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Farm Women and Nutrition Gardens: Constraints and Suggestions

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study was carried out in Vidarbha region of Maharashtra state. Farm women undergone training on nutrition garden from three KVKs were selected to conduct the study. 110 beneficiaries from each KVK were selected, thus the overall sample size considered for the study was 330. Personal interview technique was followed to collect the data. Data on major constraints perceived by participants in establishing kitchen garden were also collected. Garrett ranking method was followed to rank the constraints. Result of the study revealed that major constraints noted by the beneficiaries of the nutrition garden training are, weeds in the nutrition garden lead to increased

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pest infestation followed by the constraint preparing a circular-shaped nutrition garden requires more effort and involvement of more women power, lesser availability of biopesticides, damage due to animals is a concern for nutrition garden, fear of theft of the produce. Suggestions were given to overcome these constraints.

Keywords: Beneficiaries; constraints; Garrett ranking; nutrition garden; suggestions; Vidarbha.

1. INTRODUCTION

Food insecurity and malnutrition are serious issues in our country, affecting many people's health, finances, and social well-being. Factors like lack of resources, limited education, and poor living conditions make it hard for many to access enough nutritious food. In this context, home gardens that grow fruits and vegetables can help. These gardens provide families with direct access to fresh food, which they can harvest, prepare, and eat daily. Nutrition gardens are a long-standing local practice, often used by communities with limited resources and little outside support. A study by Knapp et al. (2019) on school-based kitchen gardens in low-income, African American communities found that to make these programs more effective, future efforts should focus on the specific needs and themes identified in the study. These gardens may help improve the factors contributing to obesity and overweight in these communities. Nutrition gardens are home gardens that grow natural and bio-fortified fruits and vegetables, chosen to provide high levels of essential nutrients like iron and vitamin A. In developing countries like India, where diets of pregnant women, nursing mothers, and young children often lack these nutrients, nutrition gardens can improve their diets by adding important proteins, vitamins, and minerals. Raising awareness about the importance of eating vegetables, good hygiene practices, and focusing on the health of women and children is essential. To tackle under nutrition, we must address several factors, including improving agriculture, raising incomes, increasing food access, and educating people about nutrition and health.

For a balanced diet, adults should eat 80 grams of fruit and 300 grams of vegetables per day. The choice of crops for a kitchen garden depends on the garden's size and the family's preferences. Grow vegetables that suit the region and yield good results. In small gardens, focus on vegetables that provide the most nutrition and yield. Choose cultivars based on the region's climate and planting time. Vegetables like tomatoes, chilies, radishes, and leafy greens are good options for small gardens, especially those that are best when fresh. Poverty and undernutrition are widespread in India, and the average calorie intake has been decreasing over the past two decades. Despite government efforts to improve food security, many people still suffer from hunger and malnutrition. Addressing nutritional security is urgent. Vegetables, which are rich in essential nutrients, can help combat micronutrient deficiencies. However, factors like low vegetable supply, high prices, and lack of awareness limit vegetable consumption in India. One solution is nutrition gardens, which are a part of agriculture in many developing countries and are essential for food and nutritional security, especially during food crises.

The nutritional home or kitchen garden is generally located close to the house and is used for growing vegetables, fruits and other food crops for the domestic purpose and sale Jana et al. (2015) and Keatinge et al. (2012). In rural areas where people have limited income and poor market access, nutrition gardens are vital (Yadav et al., 2022 and Chauhan, 2023). They provide food and income for poor households, especially in rural and semi-urban areas, helping improve their nutrition and financial status. According to the FAO, home-based nutrition gardens enhance food security by providing direct access to diverse, nutrient-rich foods, ensuring a healthy diet with enough macro and micronutrients, and supplying food during lean seasons (Dubey, 2021)]. These gardens also help conserve local vegetable species, reduce food bills, and generate income from selling garden produce. Additionally, nutrition gardens offer social benefits like empowering women, promoting fairness, preserving traditional knowledge, and strengthening community bonds.

2. METHODOLOGY

The study took place in the Vidarbha region of Maharashtra, which has 14 Krishi Vigyan Kendras (KVKs) (Rawal, 2024). These KVKs help spread agricultural knowledge and promote sustainable farming practices. During the meticulous planning phase, a close collaboration took place with the programme coordinators of each of the 14 KVKs. These coordinators

understand the local challenges and needs of the farming community in Vidarbha, making the information they share more useful. One important training carried out by several KVKs in Vidarbha is training on nutrition gardens. Since 2016, some KVKs have consistently provided this training (Jayashree, 2021). To select which KVKs to include in the study, researchers focused on those that had been offering nutrition garden training since 2016. This method of selection is called purposive sampling. The KVKs chosen were:

1. KVK, Risod, Washim (2016)
2. KVK, Selsura, Wardha (2016)
3. KVK, Jalgaon Jamod, Buldana (2016)

The research was conducted at these three KVKs. The participants of the nutrition garden training were contacted and a list of people who had consistently maintained their nutrition gardens was created. This step was important to identify people who not only received the training but also continued the practice (Sudhakarrao, 2021). To ensure fairness, simple random sampling method was followed to select the beneficiaries for study. This method gives everyone an equal chance of being selected. From each KVK, 110 beneficiaries were randomly chosen, making a total of 330 participants for the study. A structured interview schedule was prepared based on the objectives of the study (Arya, 2018). Personal interview technique was used to collect data, which allowed to have direct and meaningful conversations with the participants about their experiences and views.

Reading (1971) defined constraints as use of force to influence or prevent an action or quality or state of being completed to do or not to do something. In the present study, constraints are defined as the problems, difficulties faced by the beneficiaries in adopting nutrition garden. Basically, it refers to the problems or difficulties that people encounter during the implementation of a nutrition garden. These constraints encompass a range of challenges and obstacles that beneficiaries have faced when attempting to establish and maintain a nutrition garden aimed at producing nutritious foods. Understanding and addressing these constraints is crucial for effectively promoting and supporting nutrition gardening efforts (Savita, 2006). This will lead to overcome the barriers faced by the respondents in implementing nutrition garden. The constraints faced by beneficiaries were measured on the basis of garrett ranking technique.

In the present study, suggestions refer to the opinions provided by beneficiaries of the nutrition garden programme regarding the actions that could be taken to overcome the constraints of the programme. These suggestions are valuable insights that were carefully recorded and considered. By gathering and analyzing the responses of the beneficiaries, it can help to gain a better understanding of the areas where improvement and actions can be taken accordingly.

3. RESULTS AND DISCUSSION

3.1 Constraints Faced by the Beneficiaries

Several major constraints faced by the farm women are mentioned in the Table 1.

From Table 1 it is observed that weeds in the nutrition garden leads to increased pest infestation is the major problem faced by the respondents with garrett score of 70.8 and it ranks first, followed by, the constraint, preparing a circular-shaped nutrition garden requires more effort and involvement of more women power having garrett score of 59.63 and ranking second. Lesser availability of biopesticides with garrett score 48.01 and ranked third (Sethy, 2010). Damage due to animals is a concern for nutrition garden having garrett score 46.55 and ranked fourth. Fear of theft of the produce having garrett score 44.79 and ranked fifth.

Table 1. Constraints faced by the beneficiaries

Sr.no.	Constraint	Garrett Score	Rank
1	Weeds in the nutrition garden lead to increased pest infestation.	70.8	1
2	Preparing a circular-shaped nutrition garden requires more effort and involvement of more women power	59.63	2
3	Lesser availability of biopesticides	48.01	3
4	Damage due to animals is a concern for nutrition garden	46.55	4
5	Fear of theft of the produce	44.79	5

3.2 Suggestions to Overcome the Constraints

Here are few suggestions to overcome the constraints faced by beneficiaries of farm women implementing nutrition gardens:

1. Encourage regular weeding and mulching practices. Mulching with organic materials like straw or leaves can suppress weed growth and reduce the habitat for pests. Additionally, intercropping with pest-repellent plants, like marigolds, can help manage both weeds and pests.
2. Consider simplifying the garden design by using rectangular or square layouts that require less effort. Additionally, organizing community workdays where multiple families help each other with garden preparation can reduce the workload on individual women. Providing tools like tillers or spades can also make the work easier.
3. Promote the local production of biopesticides using readily available materials like neem, garlic, or chili. KVKs can provide training on how to prepare homemade biopesticides. Collaborating with local agricultural stores or cooperatives to stock biopesticides can also improve availability.
4. Encourage the use of physical barriers like fencing made from bamboo, netting, or thorny bushes around the garden. Involving the community in constructing shared animal-proof enclosures can also help protect multiple gardens at once. Additionally, planting border crops that animals are less likely to eat can act as a deterrent.

4. CONCLUSION

The study identified several key constraints faced by farm women in maintaining nutrition gardens, with the most significant being weed infestation leading to increased pest problems, which ranked highest with a Garrett score of 70.8. The next major issue was the additional effort required for preparing circular-shaped gardens, followed by the limited availability of biopesticides. Concerns about damage caused by animals and the fear of theft were also notable challenges. To address these issues, suggestions such as regular weeding, simplified garden designs, local biopesticide production, and the use of physical barriers were recommended. Implementing these strategies can help improve the sustainability and effectiveness of nutrition gardens for the beneficiaries.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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