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Short Communication

Nutrition garden model (Poshan Vatika): pathway for nutrition security

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ABSTRACT

This study examines the role of nutri-gardens in enhancing dietary diversity and food security to combat malnutrition in Jharkhand, one of India's most undernourished states. Malnutrition, characterized by stunting, wasting, and anemia, especially affects women and children. Nutri-gardens, small household plots promoting the cultivation of nutrient-rich foods like fruits, vegetables, and medicinal plants, have shown promise in improving nutrition and empowering women, as seen in initiatives like the "Didi Bari" program. Despite challenges such as limited land and water, nutri-gardens have improved food security, nutritional diversity, and household income. The study highlights the need for a multisectoral approach, government support, community education, and behavior change communication to ensure the sustainability and scalability of nutri-garden programs. The research reveals that with adequate technical support and awareness, nutri-gardens can be a sustainable solution to enhance nutritional security in Jharkhand's marginalized communities. The study concludes that nutri-gardens not only improve household nutrition but also serve as an income source, particularly benefiting vulnerable groups like children, pregnant, and nursing women. However, to address malnutrition effectively, substantial government support and education programs are necessary to foster changes in food systems and improve the impact of nutri-garden initiatives.

Keywords: National Family Health Survey, Body mass index, Enhanced nutrition action

INTRODUCTION

Around 2 billion people are affected by malnutrition, which is still a serious problem in the world. Many of these individuals lack certain micronutrients. High rates of micronutrient malnutrition, particularly in developing nations, are gaining attention.[1] Promoting the eating of enough fruits and vegetables is crucial to preventing malnutrition and enhancing general health since they help diversify diets and provide critical micronutrients. With about one-third of women in India having low body mass index (BMI) (18.5 kg/m²), 38% of children being stunted, and more than half of pregnant women and children being anaemic, maternal and child malnutrition poses serious problems.[2] The enhanced nutrition action (ENA) emphasises how important it is for children, breastfeeding mothers, and pregnant women to consume a variety of foods. Consuming foods rich in vitamins A and C, such as nuts, seeds, dark green leafy vegetables, and fruit, can increase dietary variety and reduce the risk of inadequate nutrient intake, especially for vulnerable groups.[3] Inadequate nutrition during pregnancy can have negative impacts on birth outcomes and long-term health. With a sizable rural and tribal population, Jharkhand is one of India's least developed states and struggles mightily with malnutrition. Jharkhand has a high prevalence of malnourished children, with 45.3% of children under three exhibiting stunting, according to the National Family Health Survey (NFHS-4, 2015–16).[4] Additionally, 29% of kids are underweight for their age (wasted), mostly as a result of insufficient dietary intake. In addition, 65.2% of women and 65.3% of teenage girls between the ages of 15

and 19 are anaemic, while 47.8% of children are underweight.[5] Jharkhand, one of India's least developed states with a substantial rural and tribal population, suffers greatly from malnutrition. According to the NFHS-4, 2015–16, Jharkhand has a high prevalence of malnourished children, with 45.3% of children under the age of three showing stunting. In addition, 29% of children are underweight (wasted) for their age, primarily as a result of inadequate food intake.[6] In addition, 47.8% of children are underweight, while 65.2% of women and 65.3% of young females between the ages of 15 and 19 are anaemic.[7] A significant incidence of iron insufficiency (5–13%), vitamin B12 deficiency (17–22%), and folate inadequacy (5–23%) among children and adolescents is also revealed by the CNNS (2015–16) study carried out in India.[8]

A nutri-garden is a tiny, planted area that surrounds a house or farm and is intended to give the family access to fresh, nutrient-rich vegetables all year round. By assuring access to food consumed by family members, nutri-gardens play a critical role in bridging nutritional gaps. A number of programmes in Jharkhand encourage the growth of nutri-gardens in the backyard spaces of homes in an effort to fight nutritional deficiencies via dietary variety. Numerous programmes, such the Didi Bari programme and the national rural livelihood mission (NRLM), have been introduced in recent years to promote healthy eating practises and end malnutrition. Furthermore, initiatives like Poshan Vari in Jharkhand enable women to grow fruits, vegetables, medicinal herbs, and pulses to improve nutrition and earn money. Malnutrition is multifaceted, thus tackling it necessitates a multisectoral strategy including stakeholders at multiple levels. Although information on nutri-garden development and its difficulties in Jharkhand is sparse, recording this knowledge can help it be effectively disseminated through tools for community-based nutrition education.

Therefore, it's crucial to comprehend the nutri-garden model and get input from stakeholders. This study intends to explore the viewpoints and practises of various stakeholders involved in the implementation of nutri-gardens in Jharkhand.

METHODS

Study setting

To record the key elements of nutri-garden treatments in India, the study started with a thorough investigation of secondary data, including the CFNS nutri-garden Compendium and other resources. A semi-structured questionnaire was created based on the results of the secondary data analysis in order to get opinions from important stakeholders on nutri-garden initiatives especially in Jharkhand. The interviews were done over the phone due to COVID-19 constraints. The primary participants in the project were chosen from a variety of Jharkhand organizations that have showed remarkable activities and advancements in the nutri-garden sector. Eastern Indian state Jharkhand is the 14th most populous and the 15th biggest state in terms of area. Its headquarters is Ranchi, while its sub-capital is Dumka. Its total land area is 79,710 km^2 (30,778 sq. mi). Even though the state accounts for more than 40% of India's natural riches, it also confronts difficulties, with 39.1% of its people living below the poverty line and 19.6% of children under the age of five suffering from malnutrition. According to the 2011 census, Jharkhand has a total population of 32,988,134, made up of 16,930,315 men and 16,057,819 women. In 2021, Jharkhand is expected to have a population of around 4.09 crore. Scheduled castes and tribes, as well as a sizeable number of indigenous people, are found in Jharkhand. The state's abundance of surface water, groundwater, rich terrain, and a temperate climate have all helped to foster the growth of a thriving agriculture industry.

Study period

The duration of the study was for 4 months (01 March 2021 to 30 June 2021).

Study population

The study aimed to gather insights from key stakeholders involved in nutri-garden interventions in Jharkhand.

Sample size

The study ranged from 15-20 respondents.

Sampling techniques

The study employed purposive sampling techniques to select key stakeholders involved in nutri-garden interventions in India.

Survey design

Based on the results of the literature study and secondary data analysis on nutri-garden interventions and projects in Jharkhand, the survey used a semi-structured interview style and designed a questionnaire. A sample of 15 to 20 important stakeholders from Jharkhand were chosen using a purposive sampling approach, allowing for an examination of the many aspects of nutri-garden efforts throughout the interviews.

Methodology

The study's approach included a literature analysis and semi-structured interviews with important stakeholders. Scholarly publications, news articles, yearly reports, the CFNS nutri-garden compendium, and other pertinent documents were examined as part of the literature review process. This gave a thorough grasp of the history of nutri-gardens, national and state regulations in Jharkhand, as well as nutri-garden initiatives by governmental and non-governmental organisations in India. The study aimed to

learn more about the scalability, sustainability, gaps, and issues of Jharkhand's nutri-garden programmes through semi-structured interviews. To capture the viewpoints of significant participants in nutri-garden efforts, the interview transcripts underwent a qualitative analysis.

RESULTS

The study gathered information on how the Jharkhand nutri garden programme was carried out and its results. It was discovered that the Lohardaga district, which included both urban and rural regions, was where the programme first began. The state rural development department's "Didi Bari Yojana" programme was instrumental in encouraging and educating women to grow green vegetables in their own gardens for their own use. The consumption of locally cultivated foods such millets and ivy gourd has increased, according to the respondents' stated changes in eating habits. Some people have demonstrated an interest in growing hybrid and high-yield vegetable types. The cost of buying vegetables and the ease of having their own wholesome, chemical-free food were among the reasons given by the community for wanting to keep up the farming practise. Key participants in nutri garden activities were found to be women who attended training sessions offered by groups like "Didi Bari Sakhi," "Vatika Mitra," and others. Vermicomposting, organic farming, and the growing of a variety of vegetables were all covered in the training. In discussions and decision making procedures pertaining to the nutri garden, women were seen to actively participate.

Depending on the amount of available area, several nutri garden types, like as circular, rectangular, square, and ridge gardens, were used. Resource allocation decisions, such encouraging keyhole gardens in the summer, had an impact on the models chosen. The growth of tuber crops below, climbers at medium height, and creepers above the soil in a multilayer idea were two examples of creative ways. The benefits of nutri gardens on food diversification and the decrease in community malnutrition were emphasised by respondents. Through recipe demonstrations, nutrition education camps, and capacity-building initiatives for women and schoolchildren, nutrition knowledge and skills were enhanced. To encourage the creation of nutri gardens and improve dietary diversity, regular gatherings, contests, and prize distribution programmes were organised. Despite the advantages, difficulties were found, such as a lack of available space and water, psychological obstacles like superstitions, and the requirement for suitable fence to keep animals out of the gardens. Other challenges identified included pesticide chemical pollution and problems coordinating several entities. To combat these difficulties, however, respondents reported employing strategies including wastewater utilisation, effective irrigation practises, and counselling. For the nutri garden programme to be successful, the research emphasised the significance of appropriate implementation and information distribution. Respondents acknowledged its potential for securing a diverse diet, empowering women, and generating revenue. NGOs, CSR programmes, government agencies, and initiatives like MNREGA and Poshan Abhiyan were among of the external help providers.

DISCUSSION

The results of this study imply that Jharkhand families are now more likely to embrace and adopt the nutri garden initiative. The study shows that a wide range of nutrient-rich crops, including those high in iron, calcium, vitamin A, vitamin C, and folate, are cultivated and eaten from these gardens.[9] It was also said that there were therapeutic plants in the gardens. It is crucial to remember that there may be local superstitions and beliefs about eating specific food crops, particularly among pregnant women. By addressing these misconceptions and encouraging the use of native plants through behaviour change communication (BCC) and information sharing, community health outcomes may be improved.[10] The paper also emphasises how the nutri garden initiative has given women more authority. Nutrition and gender empowerment can benefit by encouraging women to participate in nutri garden activities and from supporting and advocating for the use of native foods.[11]

Several government-sponsored initiatives are being made in Jharkhand to alleviate undernutrition and micronutrient deficiencies.[12] A useful supplementary strategy to enhance clients' nutritional status is to encourage and promote increasing intake of foods from nutri gardens.[13] The development of nutri gardens in Jharkhand has the potential to improve diet quality and nutritional security while also enhancing nutrition. To guarantee the effective installation and upkeep of nutri gardens, it is necessary to concentrate on capacity building and comprehensive community nutrition education in rural regions.[14] Even if the nutri garden programme has been put into place, there is still a need for improved oversight and assistance with the continuous maintenance of these gardens. Experts in a variety of fields, including agriculture, rural development, and irrigation, have learned important lessons about the value of nutrition and the contribution of agriculture to improving nutritional status.[15] Nutritious gardens are less expensive to implement, but they may have a big influence on recipients' health. The beneficiaries do, however, confront a number of difficulties, such as a lack of quality seeds, a lack of technical expertise and training, a shortage of water and land, pest control, and pest management.[16] To guarantee the effective creation and upkeep of nutri gardens in Jharkhand, certain difficulties must be overcome.[19]

The study emphasises that the eating of food from nutri gardens rather than food bought at the market is directly associated to the dietary variety of households. This demonstrates how crucial nutrition-sensitive agriculture is to fostering dietary variety. The Jharkhand home nutritional security and nutrition might both be improved

by the nutri garden initiative. However, more has to be done to encourage and foster the growth of nutri gardens in the neighbourhood. The implementation of nutri garden programmes may be made more effective by addressing obstacles, offering technical assistance, and encouraging community involvement, which will eventually enhance the recipients' health and wellbeing.

CONCLUSION

The study shows that encouraging nutri-gardens in Jharkhand improves access to a variety of nutrient-dense vegetables, especially during emergencies like the COVID-19 epidemic, which in turn improves food security, nutrition, and families' general well-being. By improving women's nutritional status, decision-making abilities, and potential for earning cash, nutri-gardens not only protected indigenous seed types but also boosted the amount and quality of food crops. The study emphasizes how crucial training in crop and pest management, technical support, and participatory learning are to the long-term viability of these programs. These advancements were further reinforced by agricultural training and hands-on instruction in growing and preparing nutrient-dense foods. The adaptability of nutri-garden models, which can be customized to meet the demands of the local population, supports their long-term worth. The study does, however, require further assistance in the shape of seed kits, saplings, and professional advice for scaling up. In order to increase the program's reach and promote healthy eating habits, it is imperative that Anganwadi centers, schools, and colleges be integrated, and that behavior change communication be prioritized. This study contributes to our understanding of the function of nutrition-sensitive agriculture in preventing malnutrition and emphasizes the need of multi-sectoral efforts to attain food security in rural areas by addressing the dearth of agricultural and nutritional expertise in the area.

Recommendations

It is essential to raise community awareness and offer appropriate planning advice in order to encourage the development of nutri gardens and diverse food crops. More involvement will be promoted by creating training materials and integrating neighbourhood institutions. The government could take the initiative to encourage nutri garden planting in schools by giving out seed packets to the children. To guarantee the success of nutri gardens, the government must conduct regular monitoring services. Additionally, it is crucial to adapt the nutri garden concept to particular community requirements and set aside enough money to ensure its sustainability.

For efficient agency cooperation, issues with the MANREGA payment system must be resolved. To encourage healthy eating habits among the populace, counselling services and behaviour modification initiatives should be expanded. Together with more qualified volunteers participating in the nutri garden programme, improved departmental cooperation is essential. The program's reach will be increased and policy-level nutrition concerns will be addressed by integrating it with current government programmes. The programme has to enhance and include traditional farming practises in order to realise the full potential of nutri gardens. Development of science, technology, and research must be adapted to local situations, and capacity building for women and extension workers is essential to provide Jharkhand's malnourished families with the proper help.

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