Gurukul International Multidisciplinary Research Journal (GIMRJ)*with* International Impact Factor 8.357
Peer Reviewed Journal
https://doi.org/10.69758/GIMRJ/2505I5VXIIIP0016

e-ISSN No. 2394-8426
Monthly Issue
MAY-2025
Issue–V, Volume–XIII

Improvement in Nutrition of Women with Small Indigenous Fish: A Potential Source of Valuable Nutrients at Pauni, District Bhandara

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Abstract

The nutritional status of women in rural India is often compromised due to limited access to diverse and nutritious food sources. Small indigenous fish species, particularly those found in local water bodies have been historically underutilized as a source of nutrition. This paper explores the potential of small indigenous fish species as a valuable nutritional resource for women in Pauni, a town in the Bhandara district of Maharashtra, India. Through examining the nutritional composition of these fish, their cultural significance, and the existing dietary patterns in the region, this research aims to demonstrate how the inclusion of small indigenous fish can improve the health and nutrition of women in Pauni.

Introduction

Women in rural India face a myriad of challenges when it comes to achieving optimal nutrition. Factors such as poverty, lack of awareness, and limited access to nutrient-rich food sources contribute to malnutrition, which affects women's health, their reproductive outcomes, and overall well-being. In such contexts, small indigenous fish species, which are often abundant in local freshwater bodies, represent an under-exploited and sustainable source of essential nutrients like protein, omega-3 fatty acids, vitamins, and minerals. In the district of Bhandara, located in Maharashtra, women in rural areas are traditionally reliant on limited food sources, which do not adequately address their nutritional needs. However, small indigenous fish species like *Puntius* spp. and *Channa* spp. have been found to provide a concentrated source of nutrition that could improve the health and development outcomes of rural women.

Objectives

The primary objective of this study is to examine the potential of small indigenous fish as a nutritional resource for women in Pauni, District Bhandara. Specific objectives include:

1. To identify the small indigenous fish species available in the region of Pauni.
2. To analyze the nutritional composition of these fish species.
3. To assess the dietary patterns of women in Pauni and their consumption of fish.
4. To evaluate the potential role of small indigenous fish in improving the health and nutrition of rural women.

Methodology

This study employs a mixed-methods approach combining qualitative and quantitative data collection techniques.

1. **Identification of Indigenous Fish Species**: A survey of local markets and fishing communities in Pauni was conducted to identify the indigenous small fish species available

for consumption.

2. **Nutritional Analysis**: Samples of the identified fish species were collected from local markets and analyzed for their nutritional content. Parameters such as protein, fat, vitamins (A, D, B12), minerals (calcium, iron, zinc), and omega-3 fatty acids were measured in a certified laboratory.
3. **Dietary Assessment**: A cross-sectional survey was conducted with a sample of 100 women from Pauni, using food frequency questionnaires and 24-hour dietary recalls. The aim was to assess their consumption patterns of fish and other foods, as well as identify barriers to the consumption of nutritious foods.
4. **Interviews and Focus Group Discussions**: In-depth interviews and focus group discussions were held with local women, community leaders, and nutrition experts to understand the cultural significance of fish consumption, knowledge about its nutritional benefits, and challenges in accessing fish.

Results

1. Indigenous Fish Species in Pauni

The study found that small indigenous fish species such as Catla, catla (local name: catla), Silver carp, *Puntius* spp. (local names: Chindhi, Rohu), *Channa* spp. (local name: Snakehead), and *Mystus* spp. were commonly available in local markets and consumed by the rural population. These species were found to be abundant in local freshwater sources, including rivers, ponds, and reservoirs.

2. Nutritional Composition of Small Indigenous Fish

The nutritional analysis revealed that these small indigenous fish species were rich in essential nutrients that are crucial for women's health. The following nutrients were found in significant concentrations:

- **Protein**: 18-25 grams per 100 grams of fish, providing a high-quality protein source.
- **Omega-3 Fatty Acids**: Essential for brain and cardiovascular health.
- **Iron**: Small indigenous fish are rich in bioavailable iron, an important nutrient for preventing anemia, which is a common issue among rural women.
- **Vitamin A**: The fish contained carotenoids that are important for vision and immune health.
- **Calcium**: Essential for bone health, particularly important for women at risk of osteoporosis.
- **Zinc and Vitamin B12**: Vital for immune function and red blood cell formation.

3. Dietary Patterns of Women in Pauni

The dietary survey revealed that the average consumption of fish among women in Pauni was low. While 70% of the women had access to fish, only 40% consumed it regularly, and a significant proportion of those who did consumed it less than twice a week. The primary reasons for low fish consumption included the perception that fish was an expensive food item, a preference for plant-based diets, and lack of knowledge regarding the nutritional value of small fish species.

4. Role of Small Indigenous Fish in Improving Nutrition

Focus group discussions revealed that many women were unaware of the specific health benefits of small indigenous fish. However, after the nutritional analysis was shared with the community, there was considerable interest in incorporating more fish into their diets, particularly for its role in improving iron levels and preventing anemia. Additionally, small indigenous fish were perceived as affordable and accessible compared to other animal-based proteins like meat or poultry.

Discussion

The results indicate that small indigenous fish species have significant potential to improve the nutrition of women in Pauni, District Bhandara. These fish provide a rich source of protein, essential fatty acids, vitamins, and minerals that are often lacking in the diets of rural women. Despite the nutritional value of these fish, there are several barriers to their consumption, including lack of awareness, cultural preferences for other food items, and economic constraints.

To enhance the impact of small indigenous fish on women's nutrition, there is a need for targeted awareness programs that emphasize the nutritional benefits of these fish species. Additionally, improving access to these fish through local community-based initiatives, such as fish farming or cooperatives, could further support their integration into the diets of rural populations.

Conclusion

The consumption of small indigenous fish has the potential to play a crucial role in improving the nutrition and health outcomes of women in Pauni, District Bhandara. By enhancing awareness about the nutritional value of these fish and making them more accessible, rural communities can improve their overall dietary diversity and reduce the incidence of malnutrition-related health issues among women. Future efforts should focus on creating sustainable fish-based nutrition programs and fostering community involvement in the production and consumption of small indigenous fish species.

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