

Nutritional Status and Socio-Economic Profile of Farm Women of Shahdol District, Madhya Pradesh

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ABSTRACT

The study aimed to leverage traditional knowledge in order to encourage nutritional understanding, education, and behavioral change among rural communities, especially farmwomen and children about awareness of local recipes to combat malnutrition and the implementation of nutritionally sensitive agriculture through biofortified varieties cultivation and nutri kitchen gardens. Krishi Vigyan Kendra, Shahdol (MP) selected one village Kunarseja, Block- Sohagpur as Nutrismart village for this study. 73.33 % of respondents reported poor practices regarding good practices of nutrition, health, and hygiene. The majority of farm women in were non vegetarians. In terms of participants BMI, 60.84 % of women were considered normal, while 35.83% were considered underweight. It is necessary to raise awareness about the importance of a balanced diet for healthy living and assuring its availability through locally available resources.

Keywords: Behavioral change, Malnutrition, Nutri kitchen garden, Nutrismart village, BMI

ARTICLE INFO

Received on	:	03/02/2026
Accepted on	:	18/03/2026
Published online	:	31/03/2026



INTRODUCTION

Women in India deploy approximately 32% of their time to agricultural tasks and, are engaging themselves in unpaid care and domestic responsibilities (Vemireddy and Pingali, 2021). Women are responsible for about 80% of agricultural labour in India. The negative impact of this work on the health and nutrition of female farmers is yet to be thoroughly investigated (Dominic et al., 2023). Despite their crucial role in enhancing dietary diversity and managing household nutrition, women are still more likely to experience undernourishment compared to men (Sangeetha et al., 2018). Indian women face a heightened risk of malnutrition. On average, rural women consume 1853 kcal per person per day, which is 16.71% below the recommended daily intake of 2225 kcal, and they also ingest lower amounts of protein, iron, and ascorbic acid than recommended (Jethi et al., 2018). One-third of women of reproductive age in India are undernourished, with a body mass index (BMI) below 18.5 kg/m², and over half of all Indian women suffer from anemia due to insufficient essential nutrients (Ministry of Health and Family Welfare, 2017). The most recent Global Nutrition Report indicated that 48% of rural Indian women in the reproductive age group are anemic. This percentage was even higher at 54% in the NFHS-4 survey (2014-15). Maternal undernutrition poses a serious public health issue, as its effects extend far beyond the individual. It contributes to fetal growth restriction, increasing the likelihood of neonatal mortality and, for surviving children, the risk of stunting (Black et al., 2013). Research conducted by researcher (Dahiya and Viswanathan, 2015) reveals that women engaged in agriculture tend to have lower nutritional outcomes.

The average body mass index (BMI) is lower among non-agricultural workers compared to those engaged in agricultural labour. However, individuals working in agriculture face more challenges than farmers. Based on the dietary habits of rural households, agricultural development may have led to an increase in calorie intake, but this has come at the cost of protein and micronutrient consumption. Consequently, the positive impact of agriculture on the variety and nutritional adequacy of household diets is limited (Akerle et al., 2017). The health, nutrition, and ability of women to breastfeed and care for their children can be significantly affected by heavy agricultural workloads, exposure to pathogens, and childcare duties (Jones et al., 2012; Hoddinott, 2012). Furthermore, research indicates that socio-economic factors play a crucial role in determining nutritional adequacy. Evidence also points to the fact that market access and consumer nutrition knowledge can lead to a more varied diet (Hirvonen, 2016; Hirvonen et al., 2017; Stifel and Minten, 2017). To fully understand the overall effects of agriculture on farm women nutrition, empirical research is necessary. The situation in Shahdol district (MP) is particularly unique, as elements of family structure and cultural norms establish interpersonal hierarchies contribute to a low social status for women, which adversely affects both their health and that of their children over the long term. Considering the significant role women play in family dynamics, it is essential to address these issues.

Furthermore, women working in agriculture faced the risk of malnutrition; therefore, under this study, they were trained to

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prepare various traditional recipes that possess high nutritional value in the selected nutrismart village Kunarseja, block- Sohagpur. The goals of the nutrismart village program included promoting nutritional awareness, education, and behavioral change in rural areas involving farm women and children, utilizing traditional knowledge through local recipes to combat malnutrition, and implementing nutrition-sensitive agriculture through cultivation of biofortified varieties and nutri kitchen gardens.

MATERIALS AND METHODS

The present study was systematically conducted in Kunarseja village, situated within the Sohagpur Block of Shahdol district, Madhya Pradesh, approximately 18 km from the district headquarters. The primary objective of this intervention was to catalyze a shift in nutritional awareness, education, and behavioral practices among rural populations, with a specific focus on farm women and children. The methodological framework integrated traditional nutritional knowledge through local recipes with modern nutrition-sensitive agriculture, utilizing biofortified crop varieties and the establishment of nutri-gardens to mitigate region specific malnutrition.

Facilitated by Krishi Vigyan Kendra (KVK) Shahdol, Kunarseja was strategically selected to be developed as a "Nutri Smart Village." By transitioning Kunarseja into a "Nutri Smart Village," the research moves beyond traditional food security to prioritize nutritional security through a localized, self-sustaining model. The integration of biofortified crops and nutri-gardens offers a cost-effective, climate-resilient solution that empowers farm women to take control over their family's health. The research commenced with a comprehensive baseline survey of 120 rural women to evaluate multidimensional variables, including socio-economic profiles, nutritional knowledge, attitudes, and practices. From this cohort, a purposive sample of 120 farm women of productive age (18–49 years) was identified for intensive study.

Nutritional status was quantified using two primary indicators:

1. Minimum Dietary Diversity for Women (MDD-W): Adhering to Food and Agriculture Organization [FAO] (2021) protocols, a binary score was assigned (1 for 5 food groups consumed out of 10; 0 otherwise). This serves as a validated proxy for micronutrient adequacy (Martin-Prével et al., 2015).

2. Body Mass Index (BMI): Participants were categorized into standard cohorts: underweight (BMI less than 18.5), normal (18.5 to <25), overweight (BMI 25.0 to <30), and obese (BMI 30.0 or higher).

The collected data were subjected to statistical analysis, employing frequency distributions, percentages, and mean values to delineate the socio-economic and nutritional landscape of the target demographic. The study creates a

scalable framework for behavioral change that respects cultural heritage while achieving global health standards. Ultimately, this work serves as a roadmap for policymakers aiming to bridge the rural health gap through nutrition-sensitive agriculture.

RESULTS AND DISCUSSION

Table 1 shows, nearly half of the respondents (45.83%) were between the ages of 29 to 38 years, followed by 30.84% of the age between 39 to 48 years. The remaining 23.33% of respondents were between 18 to 28 years. The vast majority of respondents (85.83%) were married, with 8.33% being single and 3.34% being divorced and 2.5% widowed. Also 14.17% of respondents were illiterate and 16.67% were just literate. 24.60% had primary school education, 22.50% had primary school education, 14.17% had high school education, and 5.83% had intermediate school education and 2% had graduate education. According to a field survey by Sangeeta (2019) reported that the majority of respondents are in the 30–40 age range. The majority of respondents get married in their twenties. According to Kafura et al. (2016), the majority of respondents was young (54%), had a secondary education (48%), came from small families (65%), and had a farm size of 53% and a little bit of experience in providing services (62.2%).

Table 1: Summary of profile of farm women (n=120)

S. No.	Categories	Frequency (f)	Percentage (%)
1.	Age 18-28 years	28	23.33
	29-38 years	55	45.83
	39-48 years	37	30.84
2.	Marital Status		
	Single	10	8.33
	Married	103	85.83
	Widow	3	2.5
	Divorced	4	3.34
3.	Education		
	Illiterate	17	14.17
	literate	20	16.67
	Primary school	29	24.16
	Middle school	27	22.50
	High School	17	14.17
	Intermediate	7	5.83
	Graduate and above	3	2.5

Table 2: Categorization of Farm women based on their food consumption patterns (n=120)

Food Groups	Daily		Weekly		Monthly		Festive	
	f	%	f	%	f	%	f	%
Cereals /millets	120	100	0	0	0	0	0	0
Pulses	20	16.67	97	80.83	3	2.5	0	0
Oil	85	70.83	35	29.17	0	0	0	0
Sugar and Jaggery	98	81.67	22	18.33	0	0	0	0
Green leafy vegetables	37	30.83	83	69.17	0	0	0	0
Other vegetables	117	97.5	3	2.5	0	0	0	0
Roots and tubers	101	84.17	19	15.83	0	0	0	0
Milk	0	0	0	0	0	0	120	100
Curd & butter milk	0	0	18	15	0	0	102	85
Milk products: Ghee, butter, cheese	0	0	0	0	0	0	120	100
Egg	3	2.5	113	94.17	4	3.33	0	0
Fruits	0	0	102	85	18	15	0	0
Meat	1	0.85	102	85	10	8.3	7	5.85
Nuts and oil seeds	17	14.17	34	28.33	51	42.5	18	15

Table 2 presents a comprehensive overview of the food consumption habits of women farmer in the study area. This table was created by evaluating data on daily, weekly, monthly, and festive food consumption. In Shahdol, paddy is the primary staple crop, leading to daily cereal consumption among all respondents. A substantial majority of the participants (70-98%) consumed oil, sugar, jaggery, other vegetables and tuber crops daily while pulses, GLV, eggs and fruits were consumed weekly by 69- 94% respondents. The highest consumption of cereals (98%) occurred among pregnant women, while the intake of pulses and fruits, which are essential sources of proteins and vitamins, was deemed inadequate (Umallawala *et al.*, 2022). Overall, fruit consumption was found to be insufficient among adolescent girls (56.5%). Furthermore, a significant deficiency in the intake of green leafy vegetables (36.4%) was noted among children.

Table 3: Categorization of Farm women based on by their awareness on Nutritional Knowledge, Attitude and Practices followed (n=120)

S. No.	Category	f	%
1.	Good (Above 66.66%)	8	6.67
2.	Medium (33.33% - 66.66%)	88	73.33
3.	Below medium (Less than 33.33%)	24	20

Data presented in Table 3 indicate that 73.33 percent of the participants showed medium knowledge, 6.67 percent showed good knowledge, and 20 percent of the participants possessed below medium knowledge regarding proper

nutritional practices. Bariya *et al.* (2020) reported that a significant proportion of women (73%) had a medium level of knowledge about nutrition. Suchitra (2018) carried out a study involving a sample of 120 rural women and revealed that the majority of respondents fell into the category of medium level knowledge regarding nutritional practices.

Table 4: Average anthropometric measurements of Farm women (n=120)

S. No	Parameter	Mean	SD
1.	Weight (Kg)	52.28	8.08
2.	Height (cm)	153.18	10.56

Table 4 shows the anthropometric measurements of the women. The average body weight and height were approximately 52.28 kg and 153.18 cm, with Standard deviation of 8.08 and 10.56 respectively.

Table 5: Body mass index of farm women (n=120)

S. No	BMI Analysis	f	%
1.	Underweight (<18.5)	43	35.83
2.	Normal (18.5-22.9)	73	60.84
3.	Overweight (23-24.9)	2	1.67
4.	Pre-obese (25-29.9)	1	0.83
5.	Obese (>=30)	1	0.83

Table 5 shows the Body Mass Index of farm women. Based on their body mass index, the women were classified into five categories: normal, underweight, overweight, pre-obese, and obese. The data presented in Table 6 indicates that 0.83 percent of the respondents fell into the pre-obese category and obese category, 60.84 percent were classified as normal, 35.83 percent were identified as underweight and 1.67 percent were considered overweight. According to Srivastava and Singh (2014) the highest percentage of women with a low body mass index (BMI) was found in the upper lower class at 25.87 percent, followed by the lower middle class at 19.57 percent and the upper middle class at 3.33 percent.

CONCLUSION

The current study concludes that the knowledge, attitudes, and practices of the selected farm women farmer are relatively similar. More than half of these women demonstrated an average understanding of good nutrition. In terms of nutritional, health, and hygiene practices, 20 % of the respondents engaged in poor practices. Concerning the Body Mass Index (BMI) of the respondents, 60.84% were classified as normal, while 35.83% were categorized as underweight. Thus, there is a need for increased awareness regarding the significance of good nutrition from locally available resources. Also, as per the food consumption pattern there is a need for awareness creation regarding the nutritional benefit of milk and milk products and nuts & oilseeds and emphasis to be given on their production and consumption at household level.

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Citation:

Sharma A, Singh A and Vishwakarma N. 2026. Nutritional status and socio-economic profile of farm women of Shahdol district, Madhya Pradesh. *Journal of AgriSearch* 13(1):71-75.