

## GENDER SENSITIVITY TOWARDS NUTRITION LITERACY IN FARMING COMMUNITY

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### ABSTRACT

*Nutrition has a significant impact on the growth and development of an individual. India is suffering from the double burden of malnutrition i.e., a significant part of its population is affected by both over-nutrition and under-nutrition. One effective measure of fighting malnutrition is to consume balanced, nutritious food loaded with essential nutrients and micro-nutrients. However, to consume healthy diet, the nutrition literacy is a pre-requisite. The results of the study reveals that male farmers had low and female farmers had medium nutritional knowledge. Both male and female farmers had neutral nutritional attitude and both followed fair practices to meet their nutritional requirements. Both male and female farmers had medium sensitivity towards nutrition literacy which reflected the gaps in nutrition related aspects among both males and females.*

**Keywords:** malnutrition, gender sensitivity, nutrition literacy

### INTRODUCTION

Nutrition has a significant impact on the human capital as it enhances the physical and cognitive development of an individual. India is the fifth largest economy in the world and also the top producer of milk, millets, second largest producer of the cereals. India suffers from double burden of malnutrition (Bora et al., 2023). Child malnutrition is reported as 36.00 per cent of the children under 5 are stunted, 19.00 per cent are wasted, 32.00 per cent are underweight, 03.00 per cent are overweight and 67.00 per cent suffers from anaemia. Among adults, 16.00 per cent males and 19.00 per cent females suffer from under-nutrition, 23.00 per cent males and 24.00 per cent females suffer from over-nutrition and 25.00 per cent males and 67.00 per cent females suffer from anaemia [National Family Health Survey (NFHS– 5), 2019-21]. This introduction sets the stage for exploring the significance of gender sensitivity in promoting nutrition literacy within farming communities. It involves empowering women by enhancing their access to resources, knowledge, and decision-making power, while also engaging men as partners in promoting equitable nutrition outcomes (Vinaya et al., 2020 and Vinaya et al., 2022). Although many studies have been conducted on nutritional knowledge, attitude and practice among rural and urban women, adolescent girls in rural and urban areas, gender neutral studies are limited in number in the field of agriculture. Therefore, the study titled as “Gender sensitivity towards nutrition literacy in farming community” was conducted to explore the role

and contribution of both male and female farmers towards the nutritional literacy (knowledge, attitude and practice regarding nutrition) and understand the actual situation on the ground. It was also to enable the sensitization of male farmers towards the nutrition and involve them in household decisions regarding nutritional aspect. It will be useful to policy-makers and administrators in addressing the nutrition needs of male section of the society along with the female section. Gender inclusive approach towards nutritional literacy will be encouraged.

### OBJECTIVES

- (1) To study the profile of the farmers
- (2) To assess the gender sensitivity of the farmers towards nutrition literacy
- (3) To ascertain the relationship between the profile of the farmers and their sensitivity towards nutrition literacy

### METHODOLOGY

The present study was conducted in the Vadodara district of the Gujarat state based on the District Nutrition Profile of Vadodara district from NFHS-5 Report. Out of 8 talukas in the district, three talukas namely, Padra, Vadodara and Savli were selected for the study and five villages were randomly selected from each taluka for the sampling. Random sampling method used in case of male and female

farmers from each selected village. Sample comprised of the 75 male and 75 female farmers from the villages, making it the total sample size of 150. Ex-Post Facto research design was used in the present study (Kerlinger, 1976). The data were collected using pre-tested Gujarati interview schedule and investigator personally contacted all the respondents.

The profile of the male and female farmers was assessed. Age, education, family size, children below five years, annual family income, possession of milch animals, family land holding, extension participation, social media exposure, training received, price consciousness, health orientation, awareness about PM-POSHAN Scheme and alcohol-tobacco consumption behaviour were considered as independent variables in the study. The data of the profile of the farmers were gathered, processed and analysed to draw a meaningful conclusion. The statistical tools used for the analysis of the data were percentage, mean and correlation coefficient.

The nutrition literacy was taken as a dependent variable. It comprised of three components that is nutritional knowledge of the farming community, attitude of the farmers towards nutrition and the practices followed by them to meet their nutritional requirements. To assess the nutritional knowledge of the farmers, a structured schedule comprising 30 multiple choice questions was prepared by the researcher. The correct answer to a question was given score of 1 and for wrong answer the score of 0. The scores obtained out of all the 30 questions were summed up and total score of each respondent was measured. The minimum and maximum score one could get was 0 and 30, respectively. Based on the scores obtained, the farmers were categorized into five categories. The attitude of the farmers towards nutrition was measured using a scale developed by Geetha *et.al* (2022) with due modifications. In this total 23 statements were kept to elicit

the attitude of the farmers towards nutrition with five-point continuum of strongly agree, agree, undecided, disagree and strongly disagree carrying the scores of five (5), four (4), three (3), two (2) and one (1), respectively and the reverse scoring for negative statements. The minimum and maximum score one could get was 23 and 115, respectively. Based on the scores obtained, the farmers were categorized into unfavourable, favourable and highly favourable categories. The practice component comprised of 20 statements and each statement was measured using yes or no. Score of 1 was given to the response of yes and score of 0 to the response of no. The minimum and maximum score one could get was 0 and 20, respectively. Based on the scores obtained, the farmers were categorized into poor, fair, good and excellent categories.

To study the gender sensitivity in farmers towards the nutrition literacy, three indicators *i.e.* nutritional knowledge of the farmers, their nutritional attitude and the practices followed by them to meet their nutritional requirements were identified. Thereafter, weightage scores of the above mentioned indicators were worked out. 25 experts were requested to give their opinion to assign weightage, based on their importance to calculate and decide the overall index to measure the gender sensitivity towards nutrition literacy. The experts were requested to give scores to all the components in such a way that the total score of the indicators become 100. Based on the weightage scores received by the experts, the mean weightage score for all the three above mentioned indicators was worked out. Spearman co-efficient correlation was used to find out the relationship between the independent and dependent variable. The constraints faced by the respondents in meeting their nutritional requirement were studied and effective policy measures are suggested to address the problem.

**RESULTS AND DISCUSSIONS**

**Table 1: Profile of the male and female farmers**

(n=150)

Sr. No.	Profile of the farmers	Categories	Male		Female	
			f	%	f	%
1	Age	Young age group (Up to 35 years)	25	33.33	31	41.34
		Middle age group (36 to 50 years)	30	40.34	38	50.66
		Old age group (above 50 years)	20	26.33	06	08.00
2	Education	Illiterate	00	00.00	01	01.34
		Primary (1 <sup>st</sup> to 8 <sup>th</sup> standard)	04	05.33	34	45.34
		Secondary (9 <sup>th</sup> and 10 <sup>th</sup> standard)	23	30.66	29	38.66
		Higher secondary (11 <sup>th</sup> and 12 <sup>th</sup> standard)	35	46.66	09	12.00
		Graduation & above	13	17.34	02	02.66

Sr. No.	Profile of the farmers	Categories	Male		Female	
			f	%	f	%
3	Family size	Small (Up to 4 members)	16	21.33	09	12.00
		Medium (5 to 8 members)	46	61.33	41	54.67
		Large (Above 8 members)	13	17.34	25	33.33
4	Children below 5 years	No children below 5 years	18	24.00	26	34.67
		One	24	32.00	30	40.00
		Two	32	42.66	19	25.33
		More than two	01	01.34	00	00.00
5	Family land holding	Marginal (Up to 1.00 ha)	00	00.00	43	57.33
		Small (1.01 to 2.00 ha)	30	40.00	28	37.33
		Semi-medium (2.01 to 4.00 ha)	26	34.67	04	05.33
		Medium (4.01 to 10.00 ha)	15	20.00	00	00.00
		Large (Above 10.00 ha)	04	05.33	00	00.00
6	Annual family income	Very low (Up to ₹ 1,00,000)	15	20.00	40	53.34
		Low (₹ 1,00,001 to ₹ 2,00,000)	19	25.33	28	37.33
		Medium (₹ 2,00,001 to ₹ 3,00,000)	22	29.34	07	09.33
		High (₹ 3,00,001 to ₹ 4,00,000)	15	20.00	00	00.00
		Very high (Above ₹ 4,00,000)	04	05.33	00	00.00
7	Possession of milch animals	Small (Up to 3)	69	92.00	54	72.00
		Medium (4 to 6)	06	08.00	20	20.66
		Large (Above 6)	00	00.00	01	01.34
8	Extension participation	Very low (Up to 4)	01	01.34	20	26.66
		Low (5 to 8)	23	30.66	21	28.00
		Medium (9 to 12)	37	49.33	32	42.67
		High (13 to 16)	14	18.67	02	02.67
		Very high (17 to 20)	00	00.00	00	00.00
9	Social media exposure	Very low (0 to 2.4)	09	12.00	11	14.67
		Low (2.5 to 4.8)	29	38.67	30	40.00
		Medium (4.9 to 7.2)	26	34.66	34	45.33
		High (7.3 to 9.6)	09	12.00	00	00.00
		Very high (9.7 to 12)	02	02.67	00	00.00
10	Training received for nutrition	No training received	55	73.33	28	37.33
		One day training	20	26.67	27	36.00
		Two days training	00	00.00	12	16.00
		Three days training	00	00.00	08	10.67
		More than three days	00	00.00	00	00.00
11	Price consciousness	Very low (10 to 18)	00	00.00	00	00.00
		Low (19 to 26)	11	14.67	00	00.00
		Medium (27 to 34)	49	65.33	10	13.33
		High (35 to 42)	15	20.00	65	86.67
		Very high (43 to 50)	00	00.00	00	00.00
12	Health orientation	Very low (10 to 18)	00	00.00	00	00.00
		Low (19 to 26)	03	04.00	00	00.00
		Medium (27 to 34)	48	64.00	32	42.67
		High (35 to 42)	24	32.00	43	57.33
		Very high (43 to 50)	00	00.00	00	00.00

Sr. No.	Profile of the farmers	Categories	Male		Female	
			f	%	f	%
13	<b>Awareness about PM-POSHAN Scheme</b>	Very low (00.00% to 20.00%)	64	85.33	11	14.67
		Low (21.00% to 40.00%)	03	04.00	29	38.67
		Medium (41.00% to 60.00%)	05	06.67	31	41.33
		High (61.00% to 80.00%)	00	00.00	04	05.33
		Very high (81.00% to 100.00%)	03	04.00	00	00.00
14	<b>Alcohol-tobacco consumption behaviour</b>					
a	<b>Alcohol</b>	Never	68	90.67	75	100.00
		Occasionally	07	09.33	00	00.00
		Fortnightly	00	00.00	00	00.00
		Weekly	00	00.00	00	00.00
		Regularly	00	00.00	00	00.00
b	<b>Tobacco (chewing products)</b>	Never	11	14.67	61	81.33
		Occasionally	00	00.00	08	10.67
		Fortnightly	01	01.33	00	00.00
		Weekly	03	04.00	01	01.33
		Regularly	60	80.00	05	06.67
c	<b>Tobacco (smoking products)</b>	Never	48	64.00	75	100.00
		Occasionally	06	08.00	00	00.00
		Fortnightly	07	09.33	00	00.00
		Weekly	06	08.00	00	00.00
		Regularly	08	10.67	00	00.00

From Table 1, it is evident that among the male farmers, majority of the respondents belonged to middle age group, had completed education up to higher secondary level, has medium family size, two children below 5 years of age, medium family income, small number of milch animals, small size of family land holding, medium extension participation, low social media exposure, no training received, medium price consciousness, medium health orientation, very low awareness about PM-POSHAN Scheme, had never consumed alcohol, never smoked but daily chewed tobacco. The results were in line with the findings of Christian and Chauhan (2019), Ninama *et al.* (2022) and Geetha *et al.* (2022).

Among the female farmers, majority of the respondents belonged to middle age group, had completed education up to primary level, has medium family size, one child below 5 years of age, very low family income, small number of milch animals, marginal size of family land holding, medium extension participation, medium social media exposure, no training received, high price consciousness, high health orientation, medium awareness about PM-POSHAN Scheme, had never consumed alcohol, never smoked and never chewed tobacco. The results were in line with the findings of Geetha *et al.* (2022), Ninama *et al.* (2022) and Rathwa *et al.* (2022).

**Table 2: Distribution of the respondents according to their nutritional knowledge**

(n=150)

Sr. No.	Categories	Male (n=75)		Female (n=75)	
		f	%	f	%
1	<b>Very low</b> (00.00 % to 20.00 %)	01	01.34	00	00.00
2	<b>Low</b> (21.00 % to 40.00 %)	56	74.66	26	34.67
3	<b>Medium</b> (41.00 % to 60.00 %)	18	24.00	43	57.33
4	<b>High</b> (61.00 % to 80.00 %)	00	00.00	06	08.00
5	<b>Very high</b> (81.00 % to 100.00 %)	00	00.00	00	00.00

Table 2 reveals that among the male farmers, majority (74.66%) of the respondents had low level of nutritional knowledge followed by 24.00 per cent and 01.34 per cent with medium and very low level of nutritional knowledge. None of them had high and very high level of nutritional knowledge. In case of the female farmers, more than half (57.33%) of the respondents had medium level of

nutritional knowledge, followed by 34.67 per cent had low level of nutritional knowledge, 08.00 per cent had high level of nutritional knowledge. None of them had very low and very high level of nutritional knowledge. The findings are in line with the findings of Soni and Verma (2019) and Zala *et. al.* (2025)

**Table 3: Distribution of the respondents according to their nutritional attitude**

(n=150)

Sr. No.	Categories	Male (n=75)		Female (n=75)	
		f	%	f	%
1	<b>Strongly unfavourable</b> (23.00 to 41.40)	00	00.00	00	00.00
2	<b>Unfavourable</b> (41.41 to 59.80)	03	04.00	01	01.33
3	<b>Neutral</b> (59.81 to 78.20)	52	69.33	46	61.33
4	<b>Favourable</b> (78.21 to 96.60)	20	26.67	28	37.34
5	<b>Strongly favourable</b> (96.61 to 115.00)	00	00.00	00	00.00

Table 3 shows that among the male farmers, more than two-thirds (69.33%) of them had neutral nutritional attitude followed by 26.67 per cent had favourable nutritional attitude, 04.00 per cent had unfavourable nutritional attitude and none of them had strongly unfavourable and strongly favourable nutritional attitude. Among female farmers, slightly less than two-thirds (61.33%) of them had neutral nutritional attitude

followed by 37.33 per cent had favourable nutritional attitude, 01.34 per cent had unfavourable nutritional attitude and none of them had strongly unfavourable and strongly favourable nutritional attitude. The findings are in line with the findings of Nivedita and Shanthini (2016) and Prasanthi and Sireesha (2022).

**Table 4: Distribution of the respondents according to the practices followed by the farmers to meet their nutritional requirements**

(n=150)

Sr. No.	Categories	Male (n=75)		Female (n=75)	
		f	%	f	%
1	<b>Poor</b> (00.00 % to 25.00 % score)	09	12.00	05	06.67
2	<b>Fair</b> (26.00 % to 50.00 % score)	65	86.67	39	52.00
3	<b>Good</b> (51.00 % to 75.00 % score)	01	01.33	31	41.33
4	<b>Excellent</b> (76.00 % to 100.00 % score)	00	00.00	00	00.00

Table 4 reveals that among male farmers, more than four-fifths (86.66%) of them followed fair nutritional practices, followed by 12.00 per cent with poor practices, 01.34 per cent with good practices to meet their nutritional requirements and none of them followed excellent practices to meet their nutritional requirements. Among female farmers,

more than half (52.00%) of them followed fair practices to meet their nutritional requirements, followed by 41.33 per cent with good practices, 06.67 per cent with poor practices and none of them followed excellent practices to meet their nutritional requirement. The findings are somewhat in line with the findings of Geetha *et al.* (2022).

**Table 5: Distribution of the male and female farmers according to their overall sensitivity towards nutrition literacy**

(n=150)

Sr. No.	Categories	Male (n=75)		Female (n=75)	
		f	%	f	%
1	<b>Very low</b> (00.00 % to 20.00 % score)	00	00.00	00	00.00
2	<b>Low</b> (21.00 % to 40.00 % score)	07	09.33	00	00.00
3	<b>Medium</b> (41.00 % to 60.00 % score)	68	90.67	67	89.33
4	<b>High</b> (61.00 % to 80.00 % score)	00	00.00	08	10.67
5	<b>Very high</b> (81.00 % to 10.00 % score)	00	00.00	00	00.00

Table 5 reveals that among male farmers, majority (90.67%) of them had medium level of overall nutrition literacy, followed by 09.33 per cent with low nutrition literacy and none of them had very low, high and very high level of nutrition literacy. In case of female farmers, majority (89.33%) of them had medium level of overall nutrition literacy followed by 10.67 per cent with high level and none had very low, low and very high level of overall nutrition literacy.

**Correlation between the profile of the farmers and their sensitivity towards nutrition literacy**

Table 6 reveals that among the male farmers, independent variables viz., age, education, family size, annual family income, family land holding, social media exposure, training received, price consciousness, awareness about PM-POSHAN Scheme are positively correlated to their nutrition literacy indicating that increase in these variables will enhance nutritional literacy of the male farmers. Children below 5 years, possession of milch animals and health orientation are significantly related which indicated that these three variables have impact on nutritional literacy of male farmers and alcohol-tobacco consumption behaviour is negatively related to their nutrition literacy.

In case of the female farmers, independent variables viz., age, family land holding, extension participation, social media exposure and awareness about PM-POSHAN Scheme are positively correlated to their nutrition literacy indicating that increase in these variables will enhance nutritional literacy of the female farmers. Education, family size, children below 5 years, possession of milch animals, extension participation, training received, price consciousness and health orientation are significantly related indicating that these variables affect nutritional literacy of female farmers. Alcohol-tobacco consumption behaviour is negatively related indicating that increase in it will decrease their nutritional practice. Annual family income is significantly negative with their sensitivity towards nutrition literacy.

**Table 6 : Correlation between the profile of the farmers and their sensitivity towards Nutrition literacy**

(n=150)

Sr. No.	Independent Variables	Karl Pearson's Co-efficient of correlation (r)	
		Male (n=75)	Female (n=75)
X <sub>1</sub>	<b>Age</b>	0.100	0.025
X <sub>2</sub>	<b>Education</b>	0.124	0.234*
X <sub>3</sub>	<b>Family size</b>	0.025	0.242*
X <sub>4</sub>	<b>Children below 5 years</b>	0.258*	0.249*
X <sub>5</sub>	<b>Annual family income</b>	0.081	-0.241*
X <sub>6</sub>	<b>Possession of milch animals</b>	0.338**	0.230*
X <sub>7</sub>	<b>Family land holding</b>	0.021	0.087
X <sub>8</sub>	<b>Extension participation</b>	0.104	0.343**
X <sub>9</sub>	<b>Social media exposure</b>	0.106	0.075
X <sub>10</sub>	<b>Training received</b>	0.005	0.236*
X <sub>11</sub>	<b>Price consciousness</b>	0.164	0.300**
X <sub>12</sub>	<b>Health orientation</b>	0.273**	0.367**
X <sub>13</sub>	<b>Awareness about PM-POSHAN scheme</b>	0.038	0.149
X <sub>14</sub>	<b>Alcohol-tobacco consumption behaviour</b>	-0.109	-0.031

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

**CONCLUSION**

The study reflected the status of nutrition literacy among the farmers in the rural areas. Prevalence of low nutritional knowledge, neutral nutritional attitude and merely

fair practices followed by the male and female farmers in the area of study highlights the reason for prevailing status of malnutrition in India. There is a dire need to bridge the divide and formulate gender inclusive programmes to enhance nutrition literacy among the Indian population. Governmental initiatives, institutional support in conducting nutritional training programmes, public private partnership, active volunteering by the civil society organizations can play a pivotal role in achieving the goal.

## RECOMMENDATIONS

### (1) Targeted programmes in village schools and community led programmes

- Create awareness among the children from school stage itself about nutritional food intake
- Prepare school kitchen gardens with high nutritional value vegetables like carrot, cabbage, spinach and coriander
- Organize millet fairs and exhibitions, organic food exhibitions to promote their marketing and encourage farmers to grow nutritional crops and vegetables.

### (2) Knowledge enhancement and capacity building

- Establish social institutions for training rural population about nutritional foods like millets and include both men and women in these programmes
- Organize regular health camps in villages for providing information about nutrition-related disorders and diseases like anaemia
- Collaboration of health department persons and extension officials to cover a larger target area
- Design programs like training on kitchen gardening for both men and women
- Set up Nutri-smart villages
- Build digital tools like nutrition related information providing application, social media interventions like WhatsApp groups where healthcare staff and government officials upload information regarding nutrition.

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## CONFLICT OF INTEREST

There is “no conflict of interest” among the researcher authors.

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