

AWARENESS ABOUT AGRICULTURAL HAZARDS AMONG THE FARMERS**Kalpesh L. Chaudhary¹, A. P. Chaudhary² and P. B. Khodifad³**

1&3 Assistant Professor, Dept. of Agril. Extension & Communication, NMCA, NAU, Navsari- 396 450.

2 Assistant Professor, Dept. of Social Science, ACH, NAU, Navsari-396 450

Email : ki_ext@nau.in

ABSTRACT

Agriculture is globally recognized as one of the most hazardous occupations, exposing farmers to a wide range of risks arising from machinery, chemicals, animals and harsh working conditions. Despite these risks, awareness regarding agricultural hazards remains limited, especially in developing regions where farming is predominantly labor-intensive and less mechanized. The present study was conducted across seven districts of South Gujarat during 2020–21 to 2023–24 to assess farmers' awareness levels and identify the socio-economic factors associated with it. A total of 630 respondents were selected through a multi-stage random sampling method and data were collected using a structured interview schedule. Descriptive statistics and Karl Pearson's correlation coefficient were used for analysis. Results revealed that more than half (52.70%) of the farmers showed low awareness regarding agricultural hazards, with only (9.68 %) demonstrating high awareness. Correlation analysis showed that education, social participation, extension contact, mass media exposure and training received were positively and significantly associated with awareness levels, whereas age and farming experience were negatively and significantly related. Variables such as size of family, annual income, caste and landholding generally showed non-significant relationships. The study highlights the urgent need for targeted awareness programmes, enhanced extension services and increased training opportunities to strengthen farmers' understanding of occupational hazards and promote safer agricultural practices in South Gujarat.

Keywords: Agricultural hazards, farmer awareness, occupational safety

INTRODUCTION

Agriculture remains one of the world's most hazardous industries, employing 1.3 billion people 60 per cent of whom are in developing nations. Across crop, horticulture, and livestock production, workers face a complex, often unmitigated array of occupational risks (International Labour Organization, 2022).

Agriculture is a high risk industry where farmers face routine exposure to machinery injuries, toxic chemicals, and biological hazards. Globally, these risks contribute to a significant portion of the 335,000 annual fatal work accidents. In developing nations, the danger is heightened by labor-intensive practices and a lack of protective awareness, whereas developed countries face risks tied to large-scale mechanization. The use of pesticides in agriculture has led to several issues, including the death of beneficial insects, secondary pest outbreaks, the development of pest resistance, and significant human health problems (Kumar *et al.*, 2024). An increase of uses of high technology and pesticides to accelerate productivity of crops to meet population demands is also another factor that worsens the cause of soil damage (Vihariya *et al.*, 2017).

Despite its economic importance, agricultural safety remains neglected in policy and extension programs (Vinaya *et al.*, 2016). These gaps in support directly hinder risk awareness and the adoption of preventive measures against occupational injuries and diseases (Narayan and Kumar, 2020). These disparities in farming systems and support mechanisms have a direct influence on the level of risk awareness and the implementation of preventive measures against injuries and diseases. Keeping this in view, the present study entitled "Awareness about Agriculture Hazards among the Farmers" has been undertaken to systematically assess the extent of awareness among farmers and contribute to the development of strategies that ensure safer agricultural practices.

OBJECTIVES

- (1) To study the profile of respondents
- (2) To know the extent of awareness about agricultural hazards among the farmers
- (3) To study the association between profile of respondents and their awareness

METHODOLOGY

Ex post facto research design was used. The South Gujarat region comprises seven districts, all of which were included in the present investigation. The study was conducted over a period of three years, from 2020–21 to 2023–24. In the first year, one district was selected, while in the subsequent two years, three districts were selected each year. From every selected district, 90 respondents were randomly chosen. Three talukas from each district were selected at random, followed by the selection of two villages from each taluka using the same procedure. From each selected village, fifteen respondents were randomly chosen, making a total sample size of 630 respondents. An interview schedule was developed after due consultation with the faculty members of the discipline and data were collected using the personal interview method. The collected data were compiled and analyzed using appropriate statistical tools such as mean, standard deviation, frequency, percentage,

correlation coefficient and the arbitrary method for drawing inferences. The Simple Random Sampling technique was employed for the selection of respondents throughout the study. SPSS (version 29) software used for data analysis.

RESULTS AND DISCUSSION

Profile of respondents

On the basis of reviews of literature, some important profiles of the respondents like age, education, size of family, annual income, caste, occupation, land holding, experience in farming, social participation, extension contacts, mass media exposure and training received were selected as independent variables for the present study. Collected information pertaining these aspects had been tabulated, analyzed appropriate interpretation with adequate discussion and reliable conclusion had been made based on the results. The data regarding the personal profiles of respondents were analyzed, tabulated and presented in the following sequence.

(n=630)

Table 1 : Profile of respondents

Profile	Age Groups	Navsari (n=90)	Tapi (n=90)	Dangs (n=90)	Valsad (n=90)	Surat (n=90)	Narmada (n=90)	Bharuch (n=90)	Pooled (n=630)
Age	Young (up to 35 years)	20 (22.22)	17 (18.89)	16 (17.78)	24 (26.67)	21 (23.33)	21 (23.33)	19 (21.11)	138 (21.90)
	Middle (36 to 50 years)	44 (48.89)	46 (51.11)	42 (46.67)	37 (41.11)	38 (42.22)	41 (45.56)	45 (50)	293 (46.51)
	Old (Above 50 years)	26 (28.89)	27 (30.00)	32 (35.56)	29 (32.22)	31 (34.44)	28 (31.11)	26 (28.89)	199 (31.59)
Education	Illiterate	10 (11.11)	10 (11.11)	27 (30.00)	09 (10.00)	04 (4.44)	25 (27.78)	08 (8.89)	93 (14.76)
	Primary Education (Up to 8 th std)	23 (25.56)	25 (27.78)	24 (26.67)	29 (32.22)	31 (34.44)	28 (31.11)	27 (30.00)	187 (29.68)
	Secondary Education (9 th to 10 th std)	36 (40.00)	23 (25.56)	26 (28.89)	24 (26.67)	23 (25.56)	27 (30.00)	25 (27.78)	184 (29.21)
	Higher Education (11 th std to 12 th std)	13 (14.44)	23 (25.56)	11 (12.22)	19 (21.11)	19 (21.11)	07 (7.78)	19 (21.11)	111 (17.62)
	College and above education	08 (08.89)	09 (10.00)	02 (2.22)	09 (10.00)	13 (14.44)	03 (3.33)	11 (12.22)	55 (8.73)
Size of family	Small (up to 4 member)	32 (35.56)	26 (28.89)	39 (43.33)	31 (34.44)	31 (34.44)	29 (32.22)	26 (28.89)	214 (33.97)
	Medium (5 to 8 member)	52 (57.78)	58 (64.44)	49 (54.44)	55 (61.11)	58 (64.44)	55 (61.11)	57 (63.33)	384 (60.95)
	Large (more than 8 member)	06 (06.66)	06 (6.67)	02 (2.22)	04 (4.44)	01 (1.11)	06 (6.67)	07 (7.78)	32 (5.08)
Annual income	Low (≤ ₹ 1,50,000)	47 (52.22)	46 (51.11)	25 (27.78)	40 (44.44)	40 (44.44)	30 (33.33)	40 (44.44)	268 (42.54)
	Medium (> ₹ 1,50,001 to ₹ 3,00,0000)	34 (37.78)	36 (40.00)	42 (46.67)	37 (41.11)	36 (40.00)	38 (42.22)	38 (42.22)	261 (41.43)

Profile	Age Groups	Navsari (n=90)	Tapi (n=90)	Dangs (n=90)	Valsad (n=90)	Surat (n=90)	Narmada (n=90)	Bharuch (n=90)	Pooled (n=630)
	High (AboveRs.3,00,001)	09 (10.00)	08 (8.89)	23 (25.56)	13 (14.44)	14 (15.56)	22 (24.44)	12 (13.33)	101 (16.03)
Caste	General (non-reserved)	14 (15.56)	18 (20.00)	13 (14.44)	27 (30.00)	27 (30.00)	12 (13.33)	22 (24.44)	133 (21.11)
	Other Backward Caste(OBC)	44 (48.89)	11 (12.22)	18 (20.00)	13 (14.44)	26 (28.89)	22 (24.44)	18 (20.00)	152 (24.13)
	Schedule Caste (SC)	11 (12.22)	04 (4.44)	04 (4.44)	02 (2.22)	02 (2.22)	05 (5.56)	02 (2.22)	30 (4.76)
	Schedule Tribe (ST)	21 (23.33)	57 (63.33)	55 (61.11)	48 (53.33)	35 (38.89)	51 (56.67)	48 (53.33)	315 (50.00)
Occupation	Farming	47 (52.22)	45 (50.00)	38 (42.22)	43 (47.78)	36 (40.00)	39 (43.33)	46 (51.11)	294 (46.67)
	Farming+Animal husbandry	31 (34.44)	35 (38.89)	34 (37.78)	31 (34.44)	39 (43.33)	31 (34.44)	32 (35.56)	233 (36.98)
	Farming + Animal husbandry +Service	05 (05.56)	06 (6.67)	09 (10.00)	06 (6.67)	07 (7.78)	12 (13.33)	06 (6.67)	51 (8.10)
	Any other	07 (07.78)	04 (4.44)	09 (10.00)	10 (11.11)	08 (8.89)	08 (8.89)	06 (6.67)	52 (57.78)
Land holding	Marginal (< 1.00ha)	27 (30.00)	07 (7.78)	05 (5.56)	10 (11.11)	07 (7.78)	08 (8.89)	10 (11.11)	74 (11.75)
	Small (1.00 to2.00 ha)	49 (54.44)	28 (31.11)	23 (25.56)	30 (33.33)	25 (27.78)	28 (31.11)	34 (37.78)	217 (34.44)
	Medium (2.01 to2.00 ha)	11 (12.22)	39 (43.33)	45 (50)	36 (40)	36 (40)	37 (41.11)	38 (42.22)	242 (38.41)
	Large (>2.00ha)	03 (03.33)	16 (17.78)	17 (18.89)	14 (15.56)	22 (24.44)	17 (18.89)	08 (8.89)	97 (15.40)
Experience in farming	Low (up to 6years)	23 (25.56)	25 (27.78)	18 (20.00)	22 (24.44)	19 (21.11)	21 (23.33)	26 (28.89)	154 (24.44)
	Medium (6.1 to 12years)	54 (60.00)	51 (56.67)	55 (61.11)	60 (66.67)	62 (68.89)	55 (61.11)	57 (63.33)	394 (62.54)
	High (above 12years)	13 (14.44)	14 (15.56)	17 (18.89)	08 (8.89)	09 (10.00)	14 (15.56)	07 (7.78)	82 (13.02)
Social participation	Low (up to6score)	49 (54.44)	82 (91.11)	87 (96.67)	79 (87.78)	81 (90.00)	82 (91.11)	76 (84.44)	536 (85.08)
	Medium (6.1 to 12score)	38 (42.22)	08 (8.89)	03 (3.33)	11 (12.22)	09 (10.00)	08 (8.89)	13 (14.44)	90 (14.29)
	High (above 12score)	03 (03.33)	00 (00.00)	00 (00.00)	00 (00.00)	00 (00.00)	00 (00.00)	01 (1.11)	04 (0.63)
Extension Contact	Low (up to 8score)	54 (60.00)	79 (87.78)	79 (87.78)	76 (84.44)	76 (84.44)	74 (82.22)	74 (82.22)	512 (81.27)
	Medium (8.1 to16score)	26 (28.89)	11 (12.22)	11 (12.22)	14 (15.56)	14 (15.56)	14 (15.56)	14 (15.56)	104 (16.51)
	High (above 16score)	10 (11.11)	00 (00.00)	00 (00.00)	00 (00.00)	00 (00.00)	02 (2.22)	02 (2.22)	14 (2.22)
Mass media exposure	Low (0 to 4.0score)	36 (40.00)	36 (40.00)	45 (50.00)	41 (45.56)	43 (47.78)	42 (46.67)	34 (37.78)	277 (43.97)
	Medium (4.1 to 8.0score)	37 (41.11)	54 (60.00)	45 (50.00)	48 (53.33)	46 (51.11)	45 (50.00)	52 (57.78)	327 (51.90)
	High (8.1to12.00score)	17 (18.89)	00 (00.00)	00 (00.00)	01 (1.11)	01 (1.11)	03 (3.33)	04 (4.44)	26 (4.13)

Profile	Age Groups	Navsari (n=90)	Tapi (n=90)	Dangs (n=90)	Valsad (n=90)	Surat (n=90)	Narmada (n=90)	Bharuch (n=90)	Pooled (n=630)
Training Received	Yes	36 (40.00)	31 (34.44)	26 (28.89)	25 (27.78)	41 (45.56)	28 (31.11)	30 (33.33)	217 (34.44)
	No	54 (60.00)	59 (65.56)	64 (71.11)	65 (72.22)	49 (54.44)	62 (68.89)	60 (66.67)	413 (65.56)

(1) Age

The data presented in Table 1.0 revealed that majority of respondents of Navsari (48.89 %), Tapi (51.11 %), Dangs (46.67 %), Valsad (41.11 %), Surat (42.22 %), Narmada (45.56 %) and Bharuch (50.00 %) were in the middle age group.

Overall, nearly half (46.51 %) of the respondents belonged to the middle age category, followed by old (31.59 %) and young (21.90 %) age categories. It is clear from the data that more than half of the respondents were in the middle to old age group. The results indicate that they have enough maturity and have better experience in farming. This finding has been supported by the findings of Kumar *et al.* (2024).

(2) Education

The data presented in Table 1.0 indicated that two-fifths (40.00 %) of the respondents had a secondary level of education and 25.56 per cent had a primary level of education. While 14.44 and (11.11 %) of the respondents had a higher level of education and illiterate. Only 08.89 per cent of respondents had a college and above level of education. In Tapi district, more than one-fourth (27.78 %) of respondents belonged to primary education, in the Dangs 30.00 per cent of respondents were illiterate and in the Valsad district, 32.22 per cent of respondents completed primary education. In Surat, more than one-third (34.44 %) of the respondents had primary education, whereas in Narmada, 31.33 per cent had primary education, and in Bharuch, 30.00 per cent had primary education.

Overall, nearly one-third (29.68 %) of the respondents had a primary level of education, followed by secondary (29.21 %), higher (17.62 %), illiterate (14.76 %) and college and above education (8.73 %). It is clear from the data that more than three-fifths of respondents possessed a secondary to primary level of education. It might be due to the availability of formal schooling from only primary education to secondary education level facilities in the study area. This finding has been supported by the findings of Kumar *et al.* (2024).

(3) Size of family

The data presented in Table 1.0 show that more

than half of respondents of Navsari (57.78 %), Tapi (64.44 %), Dangs (54.44 %), Valsad (61.11 %), Surat (64.44 %), Narmada (61.11 %) and Bharuch (63.33 %) were in medium size of family, followed had small and large size of family.

Overall, the majority (60.95 %) of the respondents belonged medium size of family, followed by small (33.97 %) and large (5.08 %) size of family.

(4) Annual income

The data presented in table 1.0 indicated that more than half of the respondents of Navsari (52.22 %) and Tapi (51.11 %) belonged to low level of annual income ($\leq$ ₹ 1,50,000) and 46.67 % of Dang respondents belonged to medium level of annual income ($>$ ₹ 1,50,001 to ₹ 3,00,0000) and 44.44 per cent of Valsad and Surat respondents belonged to low level of annual income ($\leq$ ₹ 1,50,000) and 42.22 % of Narmada respondents belonged to Medium annual income ($>$ ₹ 1,50,001 to Rs. 3,00,0000) and in Bharuch, 44.44 % respondents belonged to low annual income ($\leq$ ₹ 1,50,000).

Overall, more than two-fifths (42.54 %) of the respondents belonged to low annual income, followed by medium (41.43 %) and high (16.03 %) annual income. It is clear from the data that the majority of the respondents had a low to medium level of annual income.

(5) Caste

The data in this regard are presented in Table 1.0. reveals that less than half (48.89 %) of the respondents of Navsari belonged to Other backward caste (OBC) and Tapi (63.33 %), Dangs (61.11 %), 53.33 per cent of respondents of Valsad, 38.89 per cent of Surat, 56.67 per cent of Narmada and 53.33 % of Bharuch belonged to Schedule tribe.

Overall, half (50.00 %) of the respondents belonged to the ST, followed by OBC (24.13 %), General (21.11 %) and SC (4.76 %) categories. It is clear from the data that the majority of respondents are from the ST and OBC categories.

(6) Occupation

It is obvious from the data presented in Table 1.0 that the majority of the respondents of Navsari (52.22 %), Tapi (50.00 %), Dangs (42.22 %), Narmada (43.33 %), Bharuch (51.11 %) and 47.78 % of Valsad respondents are doing

farming as their major occupation. While in Surat, 43.33 % of respondents are doing Farming + Animal husbandry as their major occupation.

Overall, more than half (57.78 %) of the respondents were doing other occupations, followed by farming (46.67 %), farming + animal husbandry (36.98 %) and farming + animal husbandry + service (8.10 %) as their occupation.

(7) Land holding

The data presented in Table 1.0 revealed that the majority of respondents of Navsari (54.44 %) had small land holdings, followed by Dangs (50.00 %), Tapi (43.33 %), Bharuch (42.22 %), Narmada (41.44 %), Valsad (40.00 %) and Surat (40.00 %) had a medium level of land holding.

Overall, more than one-third (38.41 %) of respondents belonged to medium-sized land holdings, followed by small (34.44 %), large (15.40 %) and marginal (11.75 %) size land holding. It is clear from data that majority of respondents had small to medium-sized land holdings.

(8) Experience in farming

The data presented in Table1.0 revealed that the majority of the respondents of Navsari (60.00 %), Tapi (56.67 %), Dangs (61.11 %), Valsad (66.67 %), Surat (68.89 %), Narmada (61.11 %) and 63.33 % respondents of Bharuch had a medium farming level of experience.

Overall, the majority (62.54 %) of the respondents had medium farming experience, followed by low (24.44 %) and high (13.02 %) farming experience. It is clear from the data that the majority of the respondents had a medium to low level of farming experience. This finding has been supported by the findings of Kumar *et al.* (2024).

(9) Social participation

The data presented in Table1.0 revealed that the majority of the respondents of Navsari (54.44 %), Tapi

(91.11 %), Dangs (96.67 %), Valsad (87.78 %), Surat (90.00 %), Narmada (91.11 %) and 84.44 per cent respondents of Bharuch had a low level of social participation.

Overall, the majority (85.08 %) of the respondents had low, followed by medium (14.29 %) and high (0.63 %) levels of social participation.

(10) Extension Contact

It is observed from Table1.0 that majority of the respondents of Navsari (60.00 %), Tapi (87.78 %), Dangs (87.78 %), Valsad (84.44 %), 82.22 per cent of Narmada and Bharuch respondents had low level of extension contact.

In overall, majority (81.27 %) of the respondents had low extension contact, followed by medium (16.51 %) and high (2.22 %) extension contact.

(11) Mass media exposure

The data given in Table1.0 indicated that majority of respondents of Navsari (40.00 %) belonged to low mass media exposure and in Tapi (60.00 %), Dangs (50.00 %), Valsad (53.33 %), Surat (51.11 %), Narmada (50.00 %) and Bharuch (57.78 %) belonged to medium mass media exposure category.

In overall, more than half (51.90 %) of the respondents had medium mass media exposure, followed by low (43.97 %) and high (4.13 %) mass media exposure.

(12) Training Received

The data given in Table1.0 indicated that majority of the respondents of Navsari (60.00 %) Tapi (65.56 %), Dangs (71.11 %), Valsad (72.22 percent), Surat (54.44 %), Narmada (68.89) and 66.67 % of Bharuch respondents had not received training.

In overall, majority (65.56 %) of the respondents had not received training and 34.44 % had received training.

Awareness about agricultural hazards among the farmers

Table 2 : Extent of awareness about agricultural hazards among the farmers

	Navsari (n=90)	Tapi (n=90)	Dangs (n=90)	Valsad (n=90)	Surat (n=90)	Narmada (n=90)	Bharuch (n=90)	Pooled (n=630)
Low (0 to 18.00score)	36 (40.00)	54 (60.00)	48 (53.33)	45 (50.00)	47 (52.22)	48 (53.33)	54 (60)	332 (52.70)
Medium (18.01 to36.00 score)	45 (50.00)	31 (34.44)	30 (33.33)	36 (40.00)	35 (38.89)	34 (37.78)	26 (28.89)	237 (37.62)
High (36.1to56.00 score)	09 (10.00)	05 (5.56)	12 (13.33)	09 (10.00)	08 (8.89)	08 (8.89)	10 (11.11)	61 (9.68)

The data presented in Table 2.0 clearly indicated that half (50.00 %) of Navsari district's respondents had medium level of awareness and Tapi (60.00 %), Dangs (53.33 %), Valsad (50.00 %), Surat (25.22 %), Narmada (53.33 %) and 60.00 per cent of Bharuch district's respondents had low awareness about agricultural hazards.

In overall, more than half (52.70 %) of the respondents had low awareness, followed by medium (37.62

%) and high (9.68 %) awareness about agricultural hazards. This finding has been supported by the findings of Vaidya and Trivedi (2006) and Gajera and Patel (2022).

Association between profile of respondents and their awareness about agriculture Hazards

This was determined and tested with help of Karl Pearson's coefficient correlation test and results obtained are presented in Table 3.0.

Table 3.0 Association between profile of respondents and their awareness about agriculture Hazards (n=630)

Sr. No.	Profile	Correlation coefficient (r)							Pooled Correlation coefficient (r)
		Navsari	Tapi	Dangs	Valsad	Surat	Narmda	Bharuch	
1	Age	-0.609**	-0.343**	-0.594**	-0.494**	-0.564**	-0.562**	-0.515**	-0.522**
2	Education	0.481**	0.282**	0.380**	0.305**	0.221*	0.436**	0.390**	0.332**
3	Size of family	-0.098 ^{NS}	-0.119 ^{NS}	-0.087 ^{NS}	-0.100 ^{NS}	-0.128 ^{NS}	-0.136 ^{NS}	-0.138 ^{NS}	-0.122**
4	Annual income	0.134 ^{NS}	0.063 ^{NS}	-0.147 ^{NS}	0.035 ^{NS}	0.077 ^{NS}	-0.034 ^{NS}	0.084 ^{NS}	0.031 ^{NS}
5	Caste	0.115 ^{NS}	0.052 ^{NS}	-0.113 ^{NS}	-0.027 ^{NS}	0.118 ^{NS}	-0.064 ^{NS}	-0.094 ^{NS}	-0.019 ^{NS}
6	Occupation	-0.153 ^{NS}	-0.070 ^{NS}	0.249*	0.278**	-0.134 ^{NS}	0.263*	0.312**	0.128**
7	Land holding	0.015 ^{NS}	0.185 ^{NS}	0.030 ^{NS}	0.022 ^{NS}	0.172 ^{NS}	0.056 ^{NS}	0.253*	0.090*
8	Experience in farming	-0.564**	-0.394**	-0.590**	-0.510**	-0.513**	-0.558**	-0.464**	-0.508**
9	Social participation	0.340**	0.339**	0.283**	0.250*	0.247*	0.317**	0.335**	0.282**
10	Extension contacts	0.368**	0.322**	0.099 ^{NS}	0.273**	0.269*	0.226*	0.222*	0.248**
11	Mass media exposure	0.272**	0.251*	0.284**	0.262*	0.221*	0.266*	0.224*	0.243**
12	Training received	0.321**	0.213*	0.248*	0.280**	0.230*	0.370**	0.330**	0.279**
^{NS} non-significant * Significant at 0.05 level ** Significant at 0.01 level									

The data presented in Table 3.0 shows that in Navsari district education, social participation, extension contacts, mass media exposure and training received is positive and highly significant with awareness about agriculture hazards and age and experience in farming is negative highly significant with awareness about agriculture hazards. Whereas, annual income, caste, and land holding is positive non-significant with awareness about agriculture hazards and size of family and occupation is negative and non-significant with awareness about agriculture hazards.

In Tapi district age, education, social participation, extension contacts are positive and highly significant with awareness about agriculture hazards and experience in farming are negative highly significant with awareness about agriculture hazards. Whereas, size of family, annual income, Caste, occupation and land holding are non-significant with

awareness about agriculture hazards.

In Dangs district age and experience in farming is negative and highly significant with awareness about agriculture hazards. Education, social participation, mass media exposure are positive and highly significant with awareness about agriculture hazards. Whereas, size of family, annual income, land holding and extension contacts are non-significant with awareness about agriculture hazards.

In Valsad and Surat district age and experience in farming are negatively and highly significant with awareness about agriculture hazards. Education, social participation, occupation, extension contacts and training received are positive and highly significant with awareness about agriculture hazards. Whereas, size of family, annual income, caste, land holding are non-significant with awareness about agriculture hazards.

In Narmada district, age and experience in farming are negatively and highly significant with awareness about agriculture hazards. Education, occupation, social participation, extension contacts and training received are positive and highly significant with awareness about agriculture hazards. Whereas, size of family, annual income, caste, land holding are non-significant with awareness about agriculture hazards.

In Bharuch district, age and experience in farming are negatively and highly significant with awareness about agriculture hazards. education, occupation, social participation, extension contacts, land holding and training received are positive and highly significant with awareness about agriculture hazards. Whereas, size of family, annual income and caste are non-significant with awareness about agriculture hazards.

In overall, age, education, size of family, occupation, land holding, experience in farming, social participation, extension contact, mass media exposure and training received were correlated with the awareness about agricultural hazards.

CONCLUSION

The present study clearly reveals that farmers of South Gujarat are exposed to various agricultural hazards, yet their awareness regarding these risks remains largely inadequate. More than half of the respondents exhibited a low level of awareness, indicating a substantial gap in understanding safe farming practices, use of protective measures, and prevention of occupational injuries. Although most farmers possessed moderate experience in farming and belonged to productive age groups, this experience did not translate into higher awareness, as age and farming experience were negatively associated with awareness levels. On the other hand, factors such as education, social participation, extension contact, mass media exposure, and training received showed a strong positive correlation with higher awareness, highlighting their crucial role in influencing knowledge related to farm hazards. The low participation in extension activities and limited access to training programmes further explain the limited awareness among farmers. The study promotes regular safety training, improve access to mass media, and encourage social participation to enhance farmers' understanding of agricultural hazards. Policy interventions focusing on farmer-centric safety education, localized awareness campaigns, and community-level capacity building can significantly improve occupational safety in the agricultural sector. Strengthening these efforts will not only reduce work-related injuries but also contribute to a safer and more sustainable farming environment in South Gujarat.

RECOMMENDATION

Through training and mass media usage, efforts should be made to make the farmers aware about appropriate use of insecticides, pesticides, herbicides, chemical fertilizers, their residual and hazardous effects and safety measures to be taken while making their application.

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CONFLICT OF INTEREST

This is to declare that there is "No conflict of interest" among researchers.

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