

## Occupational Health Hazards of Women in Agriculture - A Study on Bargarh District of Odisha

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## OCCUPATIONAL HEALTH HAZARDS OF WOMEN IN AGRICULTURE-A STUDY ON BARGARH DISTRICT OF ODISHA

**Abstract:** The woman is the backbone of the agricultural workforce but worldwide, her hard work has mostly been unpaid. The objective of the study was to find the common occupational health hazards in women agricultural workers and their effects and to find out the protective measures used by agricultural workers for the prevention of occupational health hazards. The present study was based on 110 samples of three villages of Bhatli Block in Bargarh District in the period of 2018-2019. The results revealed that physical hazards such as body pain (86.36%) and fatigues (83.63%) were most common in all agricultural activities. The majority of respondents (77.24%) had mechanical hazards, i.e. injury occur due to farm tools and machinery. Chemical hazards like skin problems affected 39.09% of workers, and environmental hazards such as air-borne allergies (32.72%), poisonous organism bites (21.81%) were found common among the respondents, and no association was found between their socio-economic levels in the relevance of occupational health hazard. The agricultural workers were usually careless towards the prevention of occupational hazards.

**Keywords:** Women in agriculture, socio-economic class, occupational hazards

### Introduction

Agriculture is considered one of the oldest occupations, perhaps as old as human civilization. Agriculture is the basic strength of the Indian economy, and the maximum population in India depends on agriculture only for their livelihood. The woman is the backbone of the agricultural workforce, but worldwide her hard work has mostly been unpaid. As farm women involve themselves both in household and farm activities, they are more prone to this. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. Presently they contribute one-third of the agricultural labour force and about 48 per cent of self-employed farmers. More than half of the world's food is grown by women. Women's work is both wide-ranging and multifaceted throughout the year, and they perform multiple tasks in the sphere of agriculture. They are exposed to both outdoor and indoor environments. It poses many health hazards to workers such as physical, mental, social, ergonomic hazards etc. (Nayak et al.).

From seed preparation to meal preparation, women's indigenous knowledge is significant and crucial in ensuring food security through sustainable agriculture. However, there is little recognition of their significant role and contribution to the socio-economic development of a nation. The entrenched social and religious norms that define women's role as secondary and subordinate keep women vulnerable and dependent and allow women's exploitation as agricultural workers and farmers. With this backdrop, the present study was carried out.

### Objective

The objective of the present study is to find the common occupational health hazards of women in agriculture and their effects and to find out the protective measures used by agricultural workers for the prevention of occupational health hazards.

## Methodology

**Study area:** The present study was conducted in three villages: Haladipali, Nuapali and Chadeigaon of Bhatli Block in Bargarh District.

**Sampling Design:** For the present study, a purposive sampling method was followed. 110 samples of women agricultural workers were selected as respondents.

**Research Design:** Keeping the objectives in mind, the exploratory cum descriptive research method was most suitable for the present survey.

**Tools and techniques:** Keeping the objectives of the study in mind, data was collected from women agricultural workers with the help of a predesigned pretested personal interview schedule and required tools.

## Result and Discussion

Socio-economic profile of the respondents

*Table 1: Distribution of respondents on the basis of socio-economic profile*

Sl. No.	Socio-economic profile		
<b>1.1.</b>	<b>Age</b>	<b>Number</b>	<b>Percentage</b>
<b>a.</b>	20-30	43	39.09
<b>b.</b>	30-40	32	29.09
<b>c.</b>	40-50	22	20
<b>d.</b>	50 & ABOVE	13	11.82
<b>1.2.</b>	<b>Caste</b>	<b>Number</b>	<b>Percentage</b>
<b>a.</b>	GENERAL	8	7.27
<b>b.</b>	Other Backward Classes	22	20
<b>c.</b>	Scheduled Tribes	36	32.73
<b>d.</b>	Scheduled Castes	44	40
<b>1.3.</b>	<b>Education</b>	<b>Number</b>	<b>Percentage</b>
<b>a.</b>	Only Read and write	28	25.45
<b>b.</b>	Primary	35	31.82
<b>c.</b>	Middle	17	15.45
<b>d.</b>	High School	29	26.36
<b>e.</b>	More	1	0.91
<b>1.4.</b>	<b>Monthly income</b>	<b>Number</b>	<b>Percentage</b>

a.	Less than 10000	58	52.73
b.	10000-20000	39	35.45
c.	More than 20000	13	11.82
<b>1.5.</b>	<b>Socio-economic class according to Kuppuswamy Scale (Jan-2017)</b>	Number	Percentage
a.	Upper Class	0	0
b.	Upper Middle Class	0	0
c.	Lower Middle class	31	28.18
d.	Upper Lower Class	44	40
e.	Lower Class	35	31.81

Table 1 delineates results on the socio-economic profile of the respondents. Information on the age of mothers revealed that the majority of respondents (39.09%) belonged to the age group 20-30 years, followed by 29.09% of respondents having age 30-40 years. Only 20%, 11.82% of respondents belonged to the age group of 40-50 years and above 50 years respectively. Out of the total farm women, most of the respondents, *i.e.*, 40%, belonged to scheduled caste, 7.27%, 20%, and 32.73% of respondents belonged to general, other backward class and scheduled tribe caste, respectively. The majority of the respondents had education up to the Primary School level, *i.e.*, 31.82%, whereas 15.45% of respondents were educated up to middle education, and 26.36% of respondents were educated up to high school education level. Only 0.91% of respondents had above high-level education, and the rest were found to be illiterates. The source of income is closely associated with the economic status of the family. It was found that the majority (52.73%) of respondents had a monthly income of Rs. Less than 10000 followed by 35.45% of respondents had monthly family income Rs.10000-20000. Only 11.82% had a monthly income above Rs. 20000. Socio-economic status is a multi-dimensional index. As per the classification of socio-economic class, it was observed that the majority (40%) of respondents belonged to the Upper Middle Class, and 31.81% of respondents belonged to the lower-class family. Only 28.18% of respondents belonged to the lower-middle class, whereas no respondents belonged to the upper and upper-middle class.

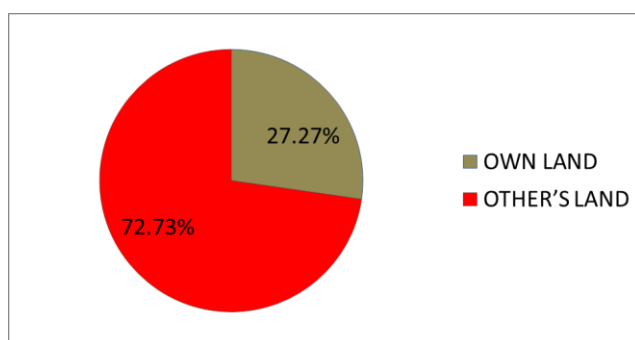


Figure 1 Distribution of respondents on the basis of working field

From figure 1, it was revealed that the majority (72.73%) of the farm women were hired laborers, followed by their own land workers, *i.e.*, 27.27%. A similar finding was also observed by Pandey (2016).

### Type of Works

Table 2: Distribution of respondents on the basis of type of work

TYPE OF WORK	NO.	%AGE
Fertilizer Carrying	35	31.81
Carrying Seeds	32	29.09
Harvesting	85	77.27
Irrigation to field	24	21.81
Cleaning Grains	63	32.72
Land Preparation	43	39.09
Applying Fertilizer	36	32.72
Weeding	95	86.36

Table 2 indicated that the majority of respondents (86.36%) engaged in weeding on-farm, followed by 77.27% farm women who were involved in harvesting, whereas 31.81%, 29.09%, 21.81%, 32.72%, 39.09% and 32.72% respondents engaged in fertilizer carrying, carrying seeds, irrigation to the field, cleaning grains, land preparation and applying fertilizer in the farm respectively.

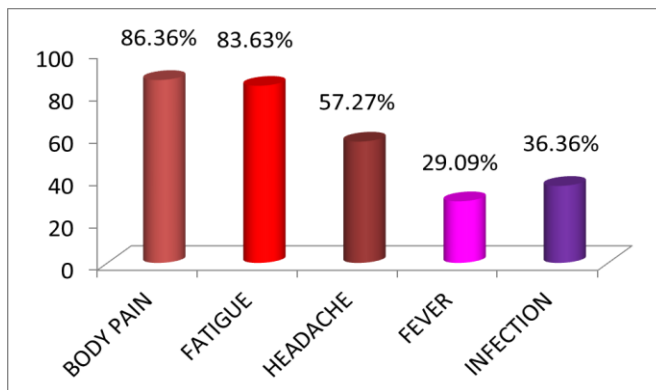


Figure 2 Distribution of respondents on the basis of physical hazards

Figure 2 revealed that in all the agricultural activities, physical hazards such as body pain (86.36%) and fatigue (83.63%) were most common, whereas 57.27%, 29.09% and 36.36% of respondents had headache, fever and infection, respectively. These were similar hazards faced by Meenakshi et al., 2020.

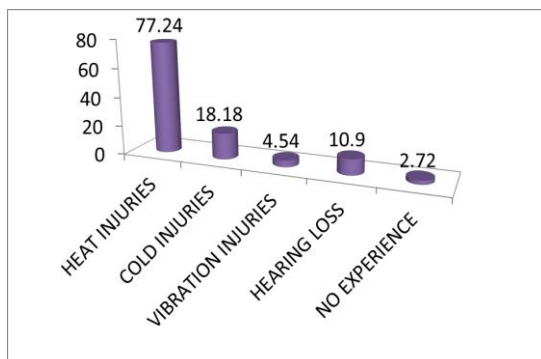


Figure 3 Distribution of respondents on the basis of mechanical hazards

The majority of respondents (77.24%) had mechanical hazards, *i.e.* injury occurred due to farm tools and machinery. It was observed in figure 3. Cold injuries, vibration injuries and hearing loss experience by 18.18%, 4.54% and 10.9%, respectively and only 2.72% of respondents had no experience of mechanical hazards.

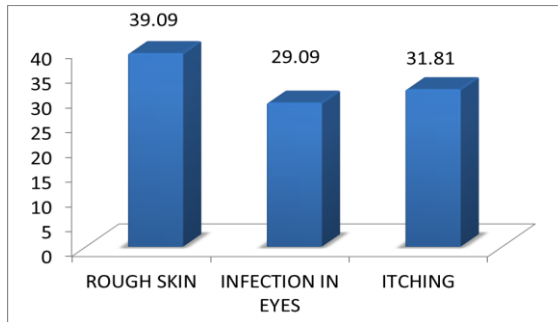


Figure 4 Distribution of respondents on the basis of chemical hazards

From figure 4, it was shown that chemical hazards like skin problems affected 39.09% of farmworkers, followed by 31.81% who felt itching of the body, and 19.09% of farmworkers suffered from infection of the eyes due to chemical hazards.

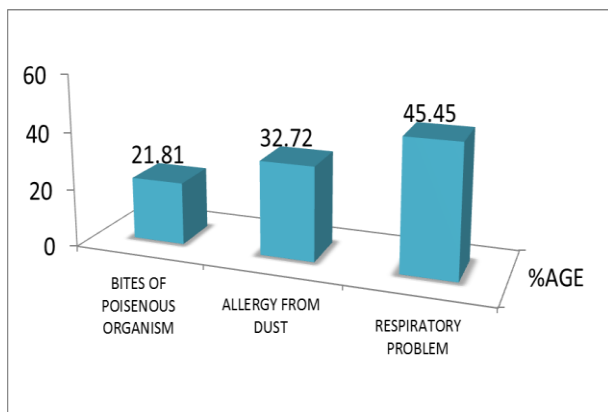


Figure 5 Distribution of respondents on the basis of environmental hazards

Figure 5 indicated that environmental hazards such as air-borne allergies (32.72%), poisonous organism bites (21.81%), and respiratory problem (45.45%) were found common among the respondents.

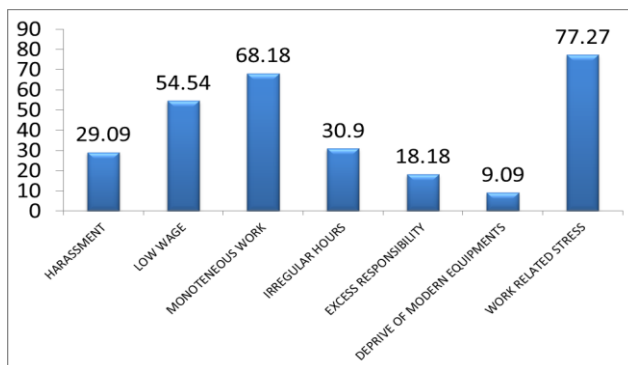


Figure 6 Distribution of respondents on the basis of psychological hazards

Figure 6 indicated that most farm agricultural workers had work-related stress, *i.e.* 77.27%, followed by 68.18% who had psychological hazards from monotonous work. Harassment, low wage, irregular work, excess responsibility and deprivation of modern equipment are very common hazards faced by agricultural farm women in their day-to-day work fields.

Table 3: Distribution of respondents on the basis of physical hazards and socio-economic class

Physical Hazards	lower Class		Upper lower Class		lower Middle Class		Chi Square Value
	%	NO	%	NO	%	NO	
<b>Body pain</b>	47.27	52	31.82	35	7.27	8	$\chi^2=3.77$ *
<b>Fatigue</b>	44.55	49	33.64	37	5.45	6	
<b>Headache</b>	34.55	38	18.18	20	4.55	5	
<b>Fever</b>	20	22	8.18	9	0.91	1	
<b>Infection</b>	21.82	24	11.82	13	2.73	3	

\*Not Significant

Table 3 revealed that in all the agricultural activities, physical hazards such as body pain (4.27%) and fatigue (44.55%) were most common among the lower socio-economic class, whereas 34.55%, 20% and 21.82% of respondents had headache, fever and infection respectively and no association was found between their socio-economic classes in the relevance of physical health hazard. Ojha and Singh found in their study a significant difference ( $p<0.0001$ ) in physiological characteristics of male and female respondents.

Table 4: Distribution of respondents on the basis of mechanical hazards and socio-economic class

Mechanical hazards	lower Class		Upper lower Class		lower Middle Class		Chi Square Value
	%	NO	%	NO	%	NO	
<b>Injuries with tools</b>	38.18	42	29.09	32	10	11	$\chi^2=3.51$ *
<b>Thermal hazards</b>	8.18	9	7.27	8	2.73	3	
<b>Vibration hazards</b>	1.82	2	1.82	2	0.91	1	
<b>Hearing loss</b>	2.73	3	0	0	0	0	

\*Not Significant

The majority of lower socio-economic class respondents (38.18%) had mechanical hazards, *i.e.* injuries occurred due to farm tools and machinery, it was observed from table 4. Cold injuries, vibration injuries and hearing loss experience by 8.18%, 1.82% and 2.73% respectively lower socio-economic class respondents and no association was found between their socio-economic classes in the relevance of mechanical hazard.

Table 5: Distribution of respondents on the basis of chemical hazards and socio-economic class

Chemical hazards	lower Class		Upper lower Class		lower Middle Class		Chi Square Value
	%	NO	%	NO	%	NO	
<b>Rough skin</b>	27.27	30	9.09	10	2.73	3	$\chi^2=2.09$ *
<b>Infection in eyes</b>	21.82	24	5.45	6	1.82	2	
<b>Itching</b>	24.55	27	6.36	7	0.91	1	

\* Not Significant

From table 5, it was shown that chemical hazards like skin problems affected 27.27% of the lower socio-economic class. Farmworkers who felt itching on their bodies followed with 24.55%, and 21.82% of the lower socio-economic class farmworkers suffered from eye infection due to chemical hazards, and no association was found between their socio-economic classes in the relevance of chemical hazard.

Table 6: Distribution of respondents on the basis of environmental hazards and socio-economic class

Environmental hazards	lower Class		Upper Class		Middle Class		Chi Square Value
	%	NO	%	NO	%	NO	
Bites of poisonous organisms	11.82	13	8.18	9	1.82	2	$\chi^2=6.74$ *
<b>Allergy from dust</b>	23.64	26	4.55	5	4.55	5	
<b>Respiratory problem</b>	26.36	29	12.73	14	6.36	7	

\*Not Significant

Table 6 indicated that environmental hazards such as air-borne allergies (23.64%), poisonous organism bites (11.82%), and respiratory problems (26.36%) were found common among the lower socio-economic class respondents. No association was found between their socio-economic classes in the relevance of environmental hazard.

Table 7: Distribution of respondents on the basis of psychological hazards and socio-economic class

Psychological Hazards	lower Class		Upper lower Class		Middle lower Class		Chi Square Value
	%	NO	%	NO	%	NO	
<b>Harassment</b>	15.45	17	14.05	9	3.64	4	$\chi^2=11.27$ *
<b>low Wage</b>	20.91	23	19.01	21	14.55	16	
<b>Monoteneous work</b>	30.00	33	27.27	28	12.73	14	



<b>Irregular work</b>	19.09	21	17.36	9	3.64	4
<b>Excess Responsibility</b>	7.27	8	6.61	6	5.45	6
<b>Deprive Modern Equipment</b>	3.64	4	3.31	3	2.73	3
<b>Work Related Stress</b>	39.09	43	35.54	29	11.82	13

\* Not Significant

Table 7 indicated that most farm agricultural workers had work-related stress. Of them, 39.09% belonged to the lower socio-economic class, followed by 30% lower socio-economic class who had psychological hazards for monotonous work. Harassment, low wage, irregular work, excess responsibility and deprivation of modern equipment are very common hazards faced by agricultural farm women in their day-to-day work fields, and no association was found between their socio-economic classes in the relevance of psychological health hazard.

Table 8: Distribution of respondents according to practices Adopted by the Farm women to overcome the Hazards

Body Pain	Massage Transformer oil at night	75.45%
Fever	Boiled water with Sephali Leaves (Nyctanthes arbor-tristis) (twice a day)	39.09%
Infection	Turmeric and Neem Leaves (Azadirachta indica) Turmeric, amla (Phyllanthus-emblica), oil and Neem Leave	85.45%
Infection in eyes	Saliva	32.72%
Itching	Cow Dung applied to the itching area	46.36%
Bites of Poisonous organisms	Cynodon Dactylon (white Duba)	44.54%
Injuries	Tridax	92.72%

Table 8 revealed that 75.45% of farm women massage transformer oil at night for body pain. They drank boiled water with sephali leaves twice a day for relief from fever, *i.e.* 39.09%. Turmeric paste and neem leaves are very common in this locality and are applied when there is an occurrence of infection (85.45%). 76.36% of respondents used turmeric, amla, oil, and neem leaves to prevent rough skin. They used saliva when they feel an infection or foreign body in the eyes (32.72%). 46.36% of respondents applied cow dung on itching area. If they feel the bite of any poisonous organism, then they apply Cynodon Dactylon (white Duba) roots paste. It was interesting to note that majority of respondents (92.72%) applied Tridax paste in injuries.

### Preventive measure

- Analysis of working conditions by regular farm visits.
- Assessing and monitoring of work-related health hazards.
- Surveillance of health through medical check-ups.
- Drawing up proposals to improve working conditions.
- Adjusting work tasks according to the employee's capabilities.

## Conclusion

The present study is based on 110 samples of 3 villages across the different agro/ecosystems with a majority of low and some middle-income holders. Interestingly the women farmers are generally knowledgeable with some educational background. Relatively, majority of young age groups (20-40) years old represent 68%. A few different types of hazards were mentioned, including body pain, fatigue, allergies and mechanical injury. Important findings indicate that the farmers are not aware of preventive measures against the hazards, and there is no association linked with the agricultural hazards and to reduce the same attached to this.

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