

Knowledge and Awareness of Salt workers regarding work related health hazards in Sambhar Lake of Rajasthan

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ABSTRACT

The intense heat, hard work, direct contact with salt, and glare from salt crystals in the sun pose serious health risks to the salt workers. This paper shows their knowledge, attitudes, and practices (KAP) regarding their work related hazards as well as availability and use of personal protective equipments (PPEs). A survey was conducted in 4 villages of Phulera Block. A survey of 250 salt workers selected from the selected villages was conducted. The data was collected through direct interview using a pre designed questionnaire. Majority of salt worker (79 percent) reported of being aware of one or more hazards like physical stress (78.8 percent), direct sunlight (58 percent) and injury from salt crystals (1 percent) in salt work. 89.2 percent of the salt workers were aware of one or the other personal protective equipments. However, only less than 15 percent were using the conventional PPEs. Most of the salt workers were aware of the hazards as well as one or the other methods of protective equipment but actual use of PPE is very low because PPE were mainly not provided by the employer and perception of inconvenience in using them. There is a large gap between awareness and usage of PPE by salt workers.

Keywords: Salt crystals, Occupational hazard, Salt workers, Personal protective equipments

INTRODUCTION

Salt industry is one of the oldest industries in Rajasthan. About 20,000 men and women labours are directly involved in the production and transportation of salt in Rajasthan, it is an important unorganised sector (Haladiya, K.R. et.al; 1995). In India, salt is found in sea water, inland lakes, and as rock salt. Thirty percent comes from inland sources, with the remaining seventy percent coming from sea water. In Rajasthan, salt is manufactured from inland sources. The salt workers are exposed to adversities of environmental conditions as well as salt in the air (Haladiya, K.R. et.al; 1995). Rajasthan's salt production regions include Didwana, Sujangarh, Pachpadra, Pokran, and Phalodi; Sambhar (Sambhar Lake and Gudha); Nawa City (Nawa and Rajas); and Kuchaman City (Kuchaman, Surgoth, and Mithri). Families of salt workers live close to salt plants, where access to state medical services is inadequate. Thus

this study aimed to analyse the Occupational Health Problems (OHPs) faced by the salt workers (Haldiya, K.R. et.al; 1995).

The salt industry in India is labour-intensive, employing over 1.11 Lakh people on a daily basis, with more than half of them working in Gujarat, the state that produces the most salt in the country (Government of India, Salt Industry in India. India; 2014). While the manufacturing of salt is heavily mechanised in developed nations like the United States, Canada, Australia, France, and Japan, the salt industry in India relies heavily on labour-intensive technologies (Government of India GOI. Salt Department Ministry of Commerce and Industry; 2014).

Intra-state and interstate migration of workers depend on salt industries for their livelihood. The majority of salt workers are paid on a daily basis and they are employed under contracts or subcontracts (Yadava, Y.S. 2006). In traditional salt industries workers and their families are employed but their general socioeconomic and health status is negatively impacted by a lack of basic utilities, poor housing, minimal social security, no health security, and low income (Bharwada, C. and Mahajan, V. 2008). Numerous social-epidemiological studies showed that salt workers experience a range of health problems, including ophthalmic illnesses brought on by direct sun exposure and salt dust irritation of the mucosa of their eyes. In addition, skin contact with brine solution and dermal irritation from small salt particles dispersed in the air might create dermatological problems if the particles go into cuts and injuries (National Institute of Occupational Health. Prevention and Control of Occupational Health Hazards among Salt Workers Working in Remote Desert Areas of Gujarat and Western Rajasthan, India). Workers are more likely to experience respiratory issues such as asthma and lung congestion because of the high concentration of saltwater, salt dust, and mixed dust in their workplace.

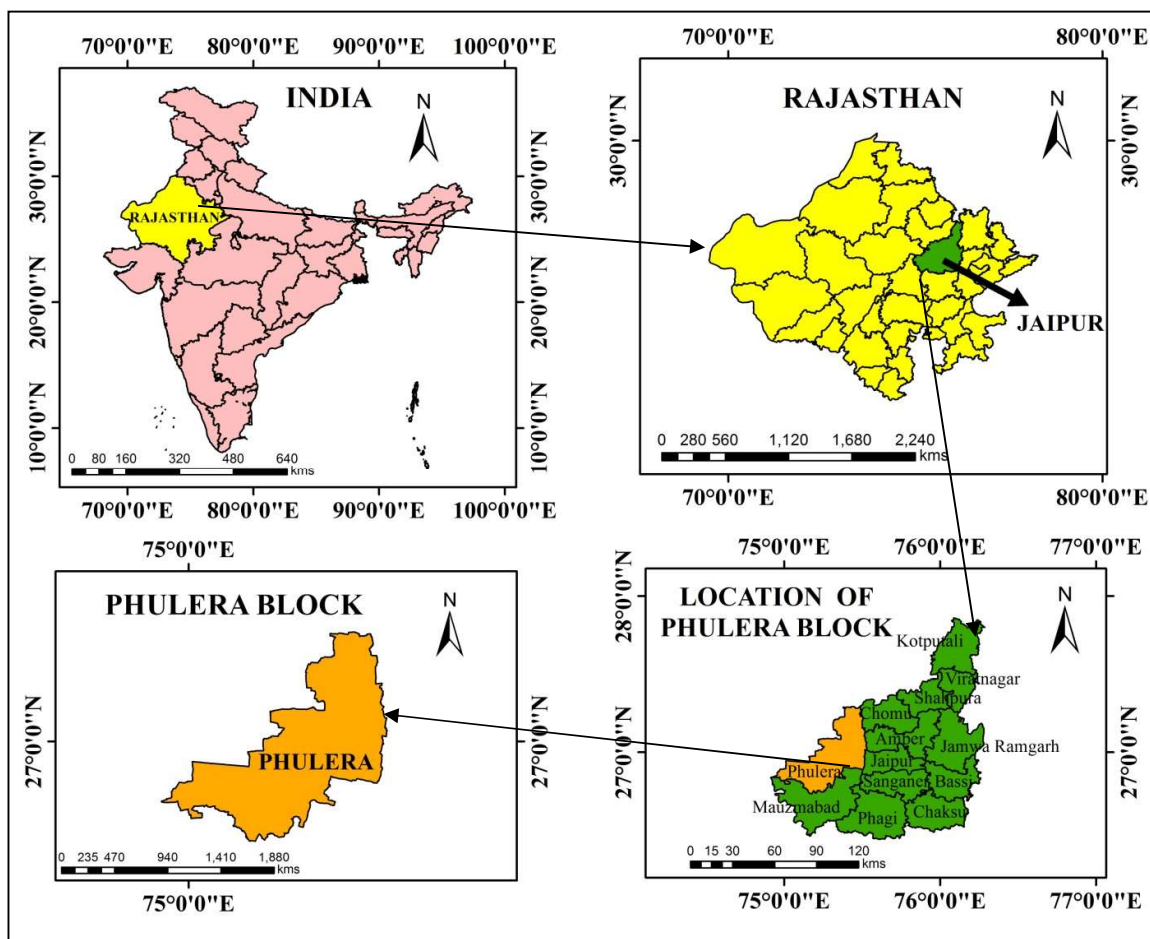
A study conducted by NIOH (National Institute of Occupational Health) on 2104 subjects of which including 1549 salt workers working at different salt sites in the little Rann of Kutch and 555 control subjects from the nearby villages suggested that the prevalence of skin and eye symptoms was found to be significantly higher among salt workers. The mean diastolic and systolic blood pressure in all categories, however, was similar. Workers in the salt production industry showed a substantial increase in serum pH and urine sodium excretion.

In Chennai's Vedaranyam and Kodikarai village, a survey was carried out for 200 salt workers. The results of the inquiry showed that every employee has a low socioeconomic position. The rate of malnourishment, anaemia, and vitamin and iodine deficits was notably elevated among the salt labourers. In addition, they experienced glare, night blindness, corneal growth, and early visual impairment. The majority of salt workers experienced muscle diseases such as joint, shoulder, and low back pain. Additional health-related conditions that were reported among young girls and women employed in the salt works included goitre, asthma, coughing, hypertension, severe rashes on the hands and legs (Swaminathan, S. 2015).

A study was carried out to evaluate work-related health problems among salt workers of Rajasthan. It found that 60.7 percent of salt workers had eye symptoms, 43.8 percent had skin symptoms, and 52.1 percent had other symptoms such headache, chest pain, breathing problems, and hypertension. The same study additionally revealed that among the salt workers, rashes, headaches, giddiness, muscular and joint problems, and traumatic ulcers were typical symptoms (Bhattacharya, M.B. 2017). The majority of salt workers experienced vision

problems. On the other hand, 12.0 percent of people had hypertension (Sachdev, R. 2006). In addition to a variety of health problems, personal safety and the work environment safety are further jeopardised. Family conflicts, school dropouts for employment opportunities, human displacement, rising rates of insecurity, poor living and working conditions, drug and alcohol abuse, workplace violence, low wages, inadequate nutrition, illiteracy, and domestic violence against women were the main social issues (Ocholla, O.G. et.al 2013). As they reside in isolated places, salt workers—especially women workers—find it challenging to get healthcare services and utilization of health care services (Saline Area Vitalization Enterprise Ltd (SAVE). Study of Salt Workers-Agarias Kutch, Patan, Rajkot and Surendranagar district, Gujarat. A report for CARE India SNEHAL Project, India).

The salt workers suffer from the saline environment in which they live and work. They work under a pitiless scorching sun doing the toughest of manual jobs without the proper safety precautions, health care, or access to basic amenities like shelter, drinking water and education. As salt workers are subjected to serious health risks such as excessive heat, hard manual labour, direct contact with salt, and glare from reflection of sunlight from the salt crystals, it is crucial to assess their knowledge, attitudes, and practices. This paper is on knowledge, attitude and practices regarding their work related hazards as well as the availability and use of Personal protective equipments.



Source: Census of India, 2011

METHODS

This study was conducted in Sambhar Lake of Phulera Block. Simple Random Sampling Survey was conducted in 4 town/villages of Phulera Block having maximum number of salt workers. From each selected town and villages, household with 95 percent confidence with 5 percent margin of error will be randomly selected i.e., a total of 1180 total household. Salt workers will be selected randomly from selected households.

RESULTS

5.1 Socio-demographic characteristics of the surveyed salt workers

Table 1: Socio-demographic characteristics of the surveyed salt workers (n=250).

Socio-demographic characteristics		Frequency	Percentage (%)
Gender	Male	178	71.2
	Female	72	28.8
Age (years)	20-39	67	26.8
	≥40	182	72
Religion	Hindu	205	82.1
	Muslim	45	18
Educational Status			
Illiterate		98	39
High school		102	41
Higher secondary		50	20
SES			
I (Upper)		0	0
II (Middle)		20	8
III(Lower)		230	92

Source: Field work, 2023

Out of the 250 salt workers enrolled in the study, 71.2 percent were males; nearly 72 percent were aged ≥40 years. Majority 82.1 percent were Hindus, rest Muslims. Only 41percent of them had been educated with high school and 20 percent had higher secondary education. Most 92 percent of them belonged to Lower Socio-economic status.

5.2 Awareness among respondents towards occupational hazards and morbidity due to salt work

Table 2: Awareness among respondents towards occupational hazards and morbidity due to salt work

Awareness of occupational hazards	Frequency	Percentage
Physical stress	197	78.8
Direct sunlight	145	58
Contact with salt and brine	17	7
Injury from salt crystals	2	1
Not aware	52	21
Awareness of occupational morbidity		

Headache	230	92
Chest pain	60	24
Gastro-intestinal	135	54
Skin Disease	97	39
Breathlessness	65	26
Hypertension	20	8
Injury	32	13
Not aware	17	7

Source: Field work, 2023

Among the 250 salt workers, 21 percent were not aware of any hazard in salt work. According to respondents 78.8 percent were facing Physical stress followed by direct sunlight 58 percent and contact with salt and brine 7 percent were the major occupational hazards. Majority 92 percent of the salt workers considered Headache as morbidity related to salt work, followed by Gastro-intestinal 54 percent and skin disease 39 percent.

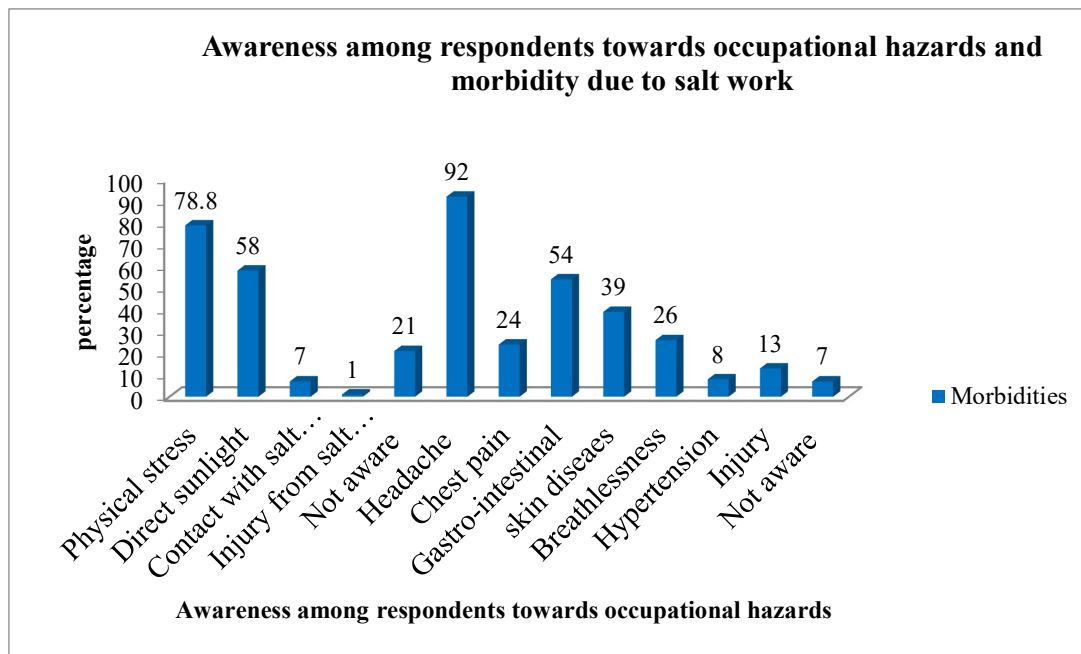


Fig:1

5.3 Attitude towards effect of salt work on health and its prevention

Table 3: Attitude towards effect of salt work on health and its prevention

	Male	Female	Total
Attitude towards salt work affecting their health			
Adversely affects health	85.39	69.4	80.8
Does not adversely health	5.05	8.33	6
Don't know	9.55	22.22	13.2

Total	71.2	28.8	100

Source: Field work, 2023

The majority of salt workers 80.8 percent believed that working with salt could have a negative impact on their health when it came to the risks and morbidity associated with their occupation. However, 6 percent of salt workers said that their work did not negatively impact their health; the remaining 13.2 percent did not know whether their health is affected or not by salt work.

5.4 Attitude of salt workers for utilization of conventional Personal Protective Equipments

Table 4: Attitude of salt workers for utilization of conventional Personal Protective Equipments

	Male (n=178)	Female (n=72)	Total (n=250)
Willing to use PPE at work			
Willing	48.87	26.38	42.4
Not willing	51.12	73.61	57.6
Any perceived benefits of using PPE at work			
Yes	50.28	31.94	46.8
No	47.19	68.05	53.2

Source: Field work, 2023

Only 42.4 percent of the 250 salt workers were aware of PPEs and were willing to use them. 46.8 percent salt workers said that wearing PPEs at work had some sort of benefit. In comparison to female workers, males were more likely to use personal protective equipment (PPE) 48.87 percent versus 26.38 percent and believed that wearing PPE would be beneficial 50.28 percent versus 31.94 percent.

5.5 Usage of Personal Protective Equipments by the salt workers

Table 5: Usage of Personal Protective Equipments by the salt workers

	Male	Female	Total
Usage of PPE			
Yes	78.65	54.16	71.6
No	21.34	45.83	28.4
Type of PPE used			
Unconventional (turban on head)	76.40	45.83	67.6

Hat/Cap	4.49	0	4.49
Boots	2.80	0	2.80
Goggles	2.24	0	2.24
Gloves	14.04	0	14.04
Reasons for not using PPE			
Not provided by employer	7.86	81.94	29.2
Inconvenience in using	58.4	61.11	59.2
No felt need	6.17	16.66	9.2
Not able to buy	82.85	84.72	83.2
Not aware of any PPE	8.98	15.27	10.8

Source: Field work, 2023

Of the 250 salt workers, 71.6 percent used one or more protective measures at work. Majority 67.6 percent of the salt workers were using unconventional PPE (turban on head) followed by gloves 14.04 percent. The conventional PPEs including hat, boots and goggles were used by very few numbers of salt workers (less than 5 percent). 29.2 percent gave reasons that PPE was not provided to them by their employers, followed by inconvenience in using 59.2 percent and 9.2 percent salt workers did not feel the need for using PPE. Among 250 salt workers 10.8 percent were not aware of any personal protective measure (PPE) used in salt pans. In all of these PPEs, female workers were less aware than the male salt workers.

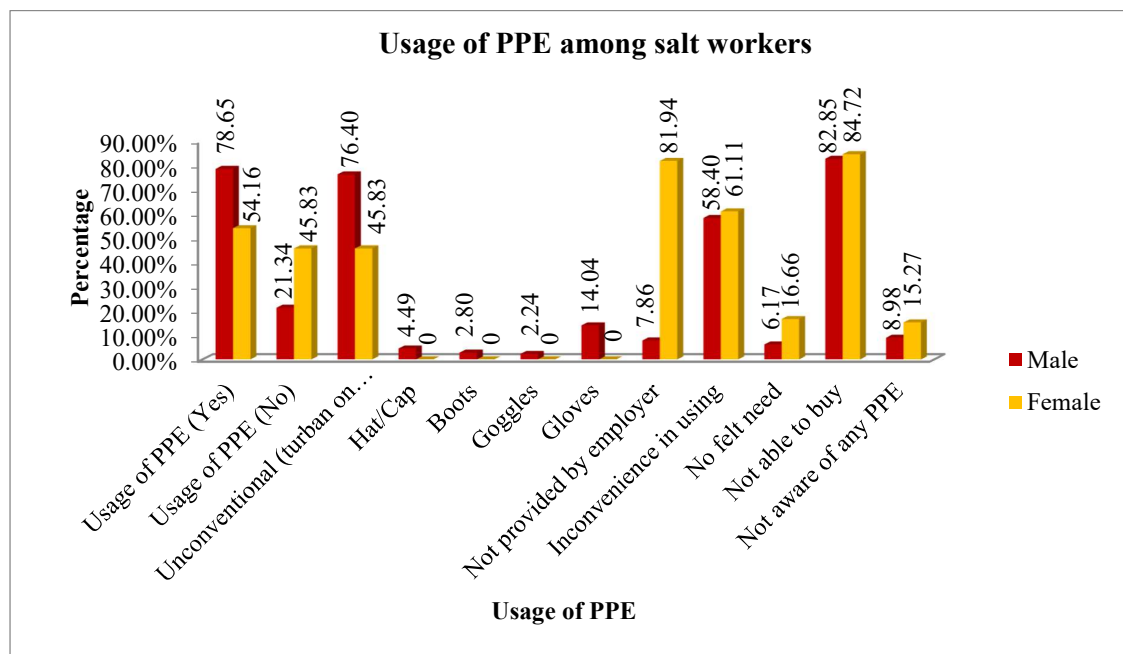


Fig: 2

CONCLUSION

The harsh working conditions and extreme weather in the salt pans lead to morbidities among the salt workers. If the salt workers do not take personal protective equipment (PPE), these morbidities will increase. Although the majority of salt workers were aware of the various ways to protect themselves from the harmful effects of working in salt pans, the actual use of PPE is very low because of non-availability and inconvenience in using them. These salt workers had a significant gap between their awareness and actual PPE use.

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