



# OCCUPATIONAL HEALTH PROBLEMS OF THE FISHERMEN RESIDING IN SELECTED VILLAGES AT CUDDALORE DISTRICT

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**Abstract:** Occupational health problems encountered by fishermen are vast. Long hours, extreme weather and working with heavy machinery contribute to high mortality rate among the fishermen. Health problems experienced during the past 6 months of their fishing period were heat, cold, light, noise, accidents, systemic problems and after effect on fishing episodes. Heat related health problems such as heat stress and heat exhaustion were experienced by 57.2% and 67.2% respectively. Cold related health problems such as chill blains and immersion of foot experienced were 46.5% and 27.5% respectively. Out of the fishermen working in the engine room on boat, 17% of the them had hearing problem. On light exposure 30.7% had head ache and 22.7% had eye strain. During fishing episodes accidents were very common. First aid kits were available only among 2% of fishermen's boats. Injuries from fish and the catch, cuts, abrasions and wound had experienced 43.5%. Falls, drowning slips and trips were faced by 30.7% and hospitalization due to accident in workplace were 17%. Systemic problems such as musculoskeletal problem (73%), hypertension (53.3%) and diabetes (36.2%) were present among the subjects. Based on personal habit 87% of fishermen were alcoholic, 73.2% fishermen were smokers. Based on workplace stress scale, 13.2% of them had no stress, 40.75% of them had moderate level of stress and 3% of them were having severe level of stress. There was significant association between stress level and smoking at  $p < 0.01$  level. The fishermen need to have awareness on use of personnel protective equipment to safeguard themselves while they go for fishing. Workplace safety, periodical screening and early treatment of health problems need to be ensured for the fishermen to ensure good health and to prevent occupational health hazards.

**Key words:** Fishermen, Occupational health problems, stress, accidents, systemic problems

## I. INTRODUCTION

Fishing in Indian seashore villages is considered as one of the major occupation. The occupational health problems encountered by fishermen are vast. Long hours, extreme weather and working with heavy machinery contribute to a high morbidity among the fishermen. Fishermen are at higher risk for drowning, work related traumatic injuries, asphyxia, skin allergies, gastric, skin and oesophageal cancers. Exposure to sun and extreme weather conditions were the other health concerns of fishermen. Isolated working conditions, long shifts with inadequate rest, adverse weather, lack of formal safety training, inadequate personal protective equipment, and work related stress have been found to attribute to an increased risk associated with fishing. Safety in fishing has the highest priority. The working environment of fishermen are the least safe among all the other occupations and the more dangerous physical environment. The main objective of the study was to identify the occupational health problems of fishermen residing in selected fishermen villages at Cuddalore District.

**Ansuya, Navaneetha, Kumar P Nanda (2010)** in their study on work related health problems conducted at Malpe and Kodi Bengre of Udupi district, Karnataka stated out of 100 fishermen 48% of them experienced moderate health problems. Various health problems experienced by the fishermen were back pain, burning in the eyes, scratching and sting injury, skin allergy, shoulder pain, muscle cramps and knee joint pain. Many authors have highlighted the need for analysis and prevention of the fishermen's health risk factors related to their specific work and living conditions. Multi professional collaboration is the possible way to achieve high standards of health and safety among the fishermen. (**Elpida Frantzeskou., Olaf Jensen and Athena Linos. 2014**). **Melvin L. Myers, Robert M. Durborow and Andrew S. Kane(2018)** reported that, musculoskeletal disorders were widespread among the fishermen. The other hazards included bites and stings from aquatic animals, vessel engine noise, dermatoses, and the other skin infections (including possible strep infection of wounds), solar ray induced eye diseases, and respiratory exposures leading to bronchial asthma.

## II. RESEARCH METHODOLOGY

In order to achieve the objectives general survey method was used to collect data for this study. Stratified random sampling technique was used to select 400 fishermen from fishermen villages at Parangipettai panchayat union, Cuddalore district, Tamilnadu. Ethical approval obtained from institutional human ethics committee. Obtained permission from panchayat union president and village leaders of the selected fishermen villages. Explained the procedure and informed consent was obtained from the subjects. The data were collected through structured interview questionnaire on occupational health problems of fishermen. Workplace stress scale was used to assess the level of stress. Health problems experienced by them during the past 6 months such as health hazards due to extreme heat, cold, light, noise, accidents, systemic problems and after effect of fishing episodes were collected using an interview guide and analysed using descriptive and inferential statistics.

## III. RESULTS

**Table no :1 Distribution of socio demographic variables of the subjects**

**N=400**

Demographic variables		No	%
Age in years	21-35 yeas	116	29
	36-45 yeas	103	25.7
	46-59 yeas	181	45
Education	Illiterate	92	23
	Primary	232	58
	Higher secondary	76	19
	Graduate	0	0
Marital status	Married	357	89
	Unmarried	43	10.7
Religion	Hindu	347	86.7
	Muslim	0	0
	Christian	53	13
Type of family	Nuclear family	257	64
	Joint family	143	35.7
Monthly income of the family per month	> Rs.20001	31	7.7
	Rs.10001-20000	85	21
	Rs.7001-10000	62	15
	Rs.5001-7000	195	48.7
	3001-5000	27	6.7

The results in table no.1 revealed that 29% of the subjects were between the age group of 21-35 years, 25.7% of them were between the age group of 36-45 years and 45.2% of them were between the age group of 46-59 years. Around 58% of them had only primary education and none of them were graduates. Around 89% of them were married and 11% of them were unmarried. It was found that 86.7% of the subjects were Hindus, 13% of them were Christians and none of the subjects were Muslims. Around 64.2% of the subjects were from nuclear family and 48.7% of them were earning Rs.5001 to 7000 per months.

**Table2: Personal habits of the fishermen**

**N=400**

Personal behaviour	Yes		No		Years of personal behaviour	
	Number	%	Number	%	Mean	SD
Alcohol consumption	349	87.25	51	12.75	7.55	4.01
Smoking	293	73.25	107	26.75	6.6	4.7
Tobacco	182	45.50	218	54.50	2.5	3.3

Out of 400 subjects (table no 2) 87% of them had the habit of consuming alcohol for 7.55 (mean) years, 73.2% used to smoke with 6.6 mean years of smoking and 45% of them were used to chewing tobacco.

Table no:3 Occupational health problems faced by the fishermen during the past 6 months

N=400

Occupational Health Problems		Yes		No	
		Number	%	Number	%
Heat	a. Heat stress	229	57.25	171	42.75
	b. Heat Exhaustion	269	67.25	131	32.75
	c. Cramp	210	52.50	190	47.50
	d. Rash	30	7.50	370	92.50
	e. Syncope	29	7.25	371	92.75
	f. Hyperpyrexia	28	7.00	372	93.00
	g. Heat Stroke	31	7.75	369	92.25
	h. Sun burn	32	8.00	368	92.00
Cold	a. Cold Frost	41	10.25	359	89.75
	b. Chilblains	186	46.50	214	53.50
	c. Immersion foot	111	27.75	289	72.25
	d. Frost bite	30	7.50	370	92.50
Hearing problems	a. At engine room	68	17.00	332	83.00
	b. On board	28	7.00	372	93.00
	c. Man maintained boat	44	11.00	356	89.00
	d. No risk on board	160	40.00	240	60.00
Light exposure	a. Eye strain	91	22.75	309	77.25
	b. head ache	123	30.75	277	69.25
	c. eye pain	68	17.00	332	83.00
	d. lachrymation	49	12.25	351	87.75

The result revealed that (table no 3) the occupational health problems experienced by fishermen during the past 6 months were heat stress(57%) and heat exhaustion (67%). Cold related health problems such as chill blains (46%) and immersion of foot (27%) were reported by the fishermen. Hearing problems were verbalised by 17% of the subjects who work in the engine room. Those who had no risk on board were 40%. Due to light exposure 22.7% had eye strain and head ache was experienced by 30.7% of the fishermen.

Figure no : 1 After effect of fishing episodes among the fishermen

N=400

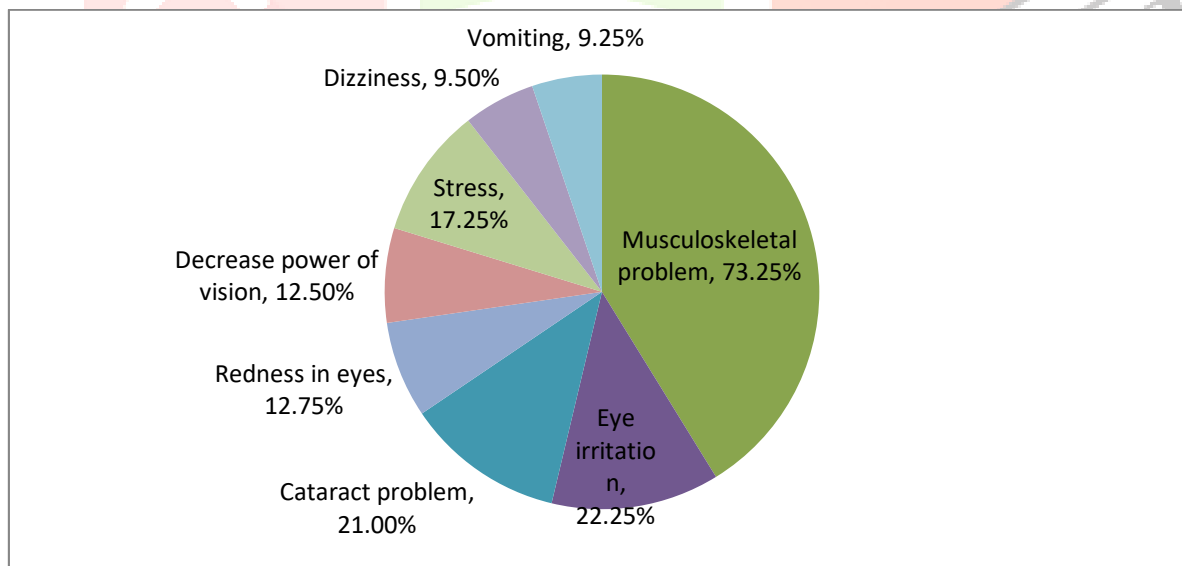


Figure no 1 reveals various other health problems faced by the fishermen after fishing episodes. Out of 400 fishermen musculoskeletal problem were verbalised by 73.2% and stress was expressed by 17%. Apart from this redness of eyes (12%), irritation of the eyes (22%), and cataract (21%) were the problem faced by fishermen.

Figure no: 2 Accidents experienced by the fishermen

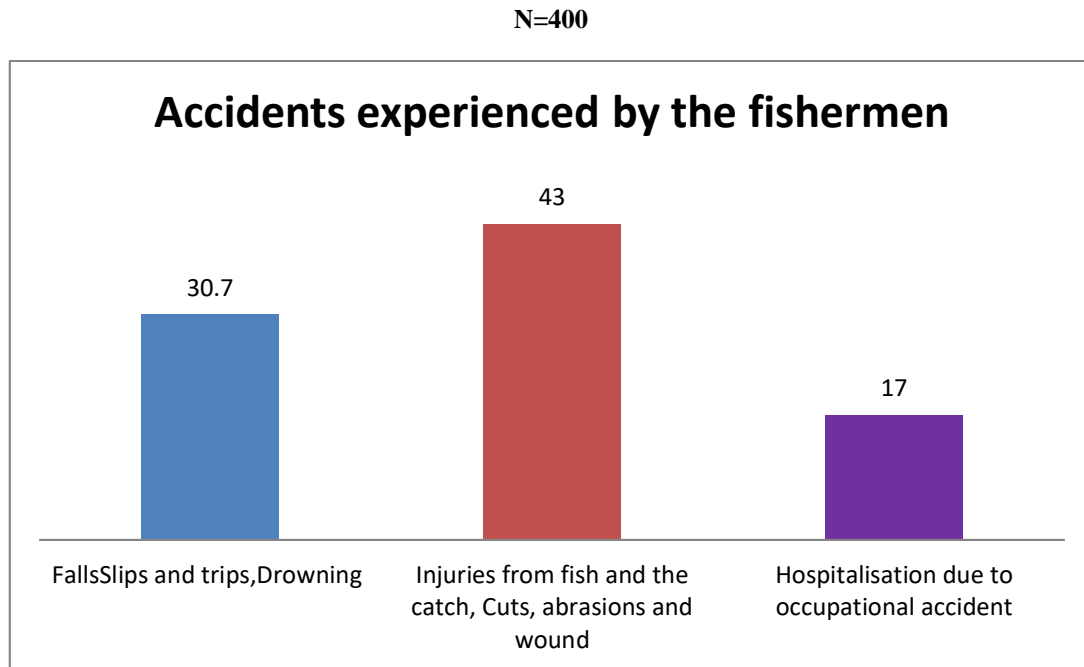


Fig.no 2 shows the common accidents which occurred the last 6 months during fishing episodes. First aid kits were available only in 2% of fishermen's boats. Injuries from fish and the catch, cuts, abrasions and wound were experienced by 43.5%. Falls, drowning, slips and trips faced by fishermen were 30.7% and 17% of the subjects were hospitalised due to accident.

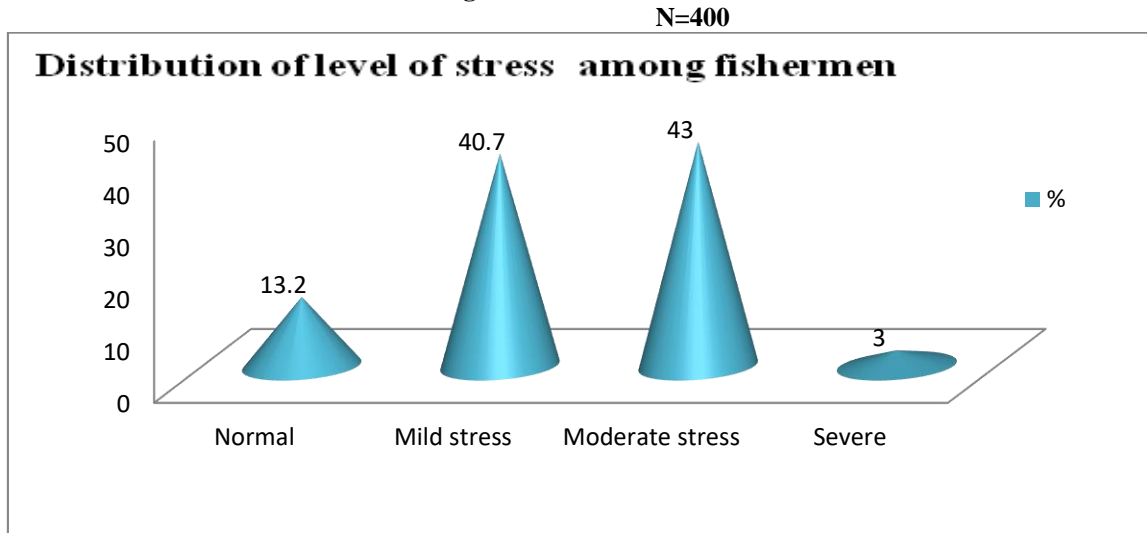
Table no: 4 Systemic health problems faced by the subjects

N=400

Systemic problem	Yes		No	
	Number	%	Number	%
Dermatitis	126	31.50	274	68.50
Respiratory problems	45	11.25	355	88.75
Cardiovascular problem	1	0.25	399	99.75
Hypertension	213	53.38	186	46.62
Diabetes mellitus	143	36.29	251	63.71
Stroke	1	0.25	399	99.75
Liver problem	6	1.50	394	98.50
Dust related problems: Allergic reaction	8	2.00	392	98.00
sleeplessness	65	16.25	335	83.75
Others if any	29	7.25	371	92.75

Out of 400 (table number 4) subjects systemic problems experienced by the fishermen included were dermatitis (31.5%), respiratory problem (11.2%), cardiovascular problem (7%), hypertension (53.3%), diabetes (36.2%) and sleeplessness (16.2%). The other systematic problems like urinary tract infection, prostate hypertrophy, gastritis, hair fall and minor problems were also verbalised by 7% of the fishermen.

Figure no 3: Distribution of level of stress among fishermen



As given in figure No.3, 13.2% had no stress, 40.75% had mild stress and 43% had moderate level of stress based on stress score by using workplace stress scale.

Table no 5: Association between level of stress and predisposing factors of fisherman

N=400

Risk factor		Moderate Level of stress		Mild Level of stress		Chi square test	Level of significance
		Number	%	Number	%		
Alcohol consumption	Yes	155	52.01	143	47.98	$\chi^2=0.48$	p=0.38(NS)
	No	17	45.94	20	54.05		
Smoking	Yes	152	55.88	120	44.11	$\chi^2=11.9$	p=0.01*** (S)
	No	20	31.74	43	68.25		
Tobacco chewing	Yes	75	54.74	62	45.25	$\chi^2=1.07$	p=0.30(NS)
	No	97	48.98	101	51.01		

Table no 5 shows the association between the stress level and fishermen's personal behaviours. Chi square analysis revealed that there was. There was significant association at  $p < 0.01$  level between stress level and smoking. Other risk factors such as alcoholism and tobacco chewing were not associated with stress.

#### IV.DISCUSSION

Education is very important for fishermen to have awareness on occupational health problem. The educational status of fishermen revealed that 23% of them were illiterate. Only 58% of them had only primary education, 19% of them had higher secondary and none of them were graduates. The study results were consistent with a study on perceptions of occupational risk, which reported low levels of education among fisherfolk in the United States.<sup>10</sup> Kyei et al<sup>7</sup> also reported most of the fisherfolk had attained primary and secondary education, while only 2% had attained tertiary level of education in Ghana. Faith Waithera et al reported, only 5% fisherfolk had attained tertiary levels of education among fisherfolk.

Among the subjects specifically heat related health problems identified were heat stress (57%) and heat exhaustion (67%). The results of the Mahmoud et al (2014) showed that the majority of fishermen (51.6%) complained of sunburn and heat related problems. Hearing problems were verbalised by 17% the subjects working in the engine room. But Mahmoud et al (2014) stated that a small percentage of fishermen were affected with noise induced hearing loss. Carly Eckert et al (2018) also reported ( $n = 33$ , 50%) of hearing loss and among those, all of the fishermen reported difficulty in hearing through ambient noise. During fishing, injuries and accidents were very common. Injuries from fish and the catch, cuts, abrasions and wound were experienced by 30.7% most of the fishermen the present study which was almost similar to the study done by Elpida Frantzeskou et al. 2012 which reported that prevalence of occupational related injuries were 28% in fishermen population.

Occupational risk factors such as a constricted working environment, hazardous, and stressful working conditions, lead to other health problems such as cardiovascular, respiratory, and dermatological conditions (Frantzeskou et al., 2012). Gomathy Parasuraman et al (2015) revealed that respiratory diseases were reported by 106 (13.6%) subjects, 86 (11%) subjects suffered from systemic disorders. Cardiovascular diseases were reported by 28 (3.6%) subjects. Kirkutis et al. (2004) also reported that the prevalence of elevated blood pressure among Lithuanian fishermen was (44.9%). The above study findings were congruent with the current study findings. These occupational health problem need to be addressed and treated early to prevent further health complication. In the current study 40.75% of the fishermen reported moderate level of stress. Which was similar to the findings of Shibaji Mandal., et al (2017) revealed that 37.2% suffered with stress. But Laraqui et al (2018) identified 53.9% of fishermen had stress due to their workplace environment. There was significant association between stress level and smoking which was significant at  $p < 0.01$  level. Hongjuan Jiang, Sailan Li, Juan Yang (2018) also stated that work stress and nicotine dependence were significantly ( $p < 0.001$ ) associated.



## V.CONCLUSION

The study concluded that fishermen had high risk of occupational health problems such as environment related health problems, systematic and other health problems due to inadequate or lack of personal protective equipments and first aid kits. The researcher found that most of the fishermen had smoking and alcoholism because of long duration of working hours and separated from their family. The above risk factors may affects their health status and reflect in chronic health problems. Suggesting more number of researches need to be conducted on occupational health of the fishermen and to improve their occupational health status.

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