

WORK RELATED INJURIES AMONG FISHERMEN – A DESCRIPTIVE STUDY IN FEW COASTAL AREAS OF SOUTH INDIA

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ABSTRACT

INTRODUCTION

The work of fishermen is considered one of the most dangerous and life-threatening professions all over the world.⁴ Many fishermen around the world suffer from fatal injuries every year due to harsh and dangerous environments. Hence, there is a need to know the pattern of injury and accordingly design preventive measures against work related injuries among the fishermen.

OBJECTIVES

- To estimate the prevalence and pattern of work related injuries among Fishermen.
- To study the usage of PPE's (Personal protective equipment's) among the Fishermen.

METHODOLOGY

A cross sectional study was conducted among 133 Fishermen in Four rural field practice areas of K. S. Hegde Medical Academy from July – September 2015. The sample size was arrived using prevalence of previous study. The data was analyzed using SPSS version 16 software.

RESULTS

Among 133 study subjects 125 were males and 8 were females. The mean age of the study subjects was 44 years. Majority (75.1%) of them had their education up to primary level. Around 92.2% of the fishermen experienced some or other type of injury in their life time. Majority of the injuries were due to cuts. Majority (85.5%) of the injuries were minor and 14.5% were severe. In the past 6 months 41% of the fishermen experienced injury mostly due to cuts and muscle strain. Most (58%) of the injuries occurred in the sea. Only 11.7% were using PPEs, 64.7% of them had insurance and 27.1% of them utilized the facility of insurance.

CONCLUSIONS

Work related injuries among fishermen were high in and use of PPEs were low among the study subjects.

KEYWORDS

Fishermen's Health, Injuries, Occupational Health, Personal Protective Equipment.

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INTRODUCTION: Occupational Health is a sustained activity aimed at promotion and maintenance of highest degree of physical, mental and social wellbeing of workers in all occupations.¹

Occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. The health of the workers has several determinants, including risk factors at the workplace leading

to cancers, accidents, musculoskeletal diseases, respiratory diseases, hearing loss, circulatory diseases, stress related disorders and communicable diseases and others.

Employment and working conditions in the formal or informal economy embrace other important determinants, including, working hours, salary, workplace policies concerning maternity leave, health promotion and protection provisions.²

Injuries in general account for 9% of global mortality, and are a threat to health in every country of the world. For every death, it is estimated that there are dozens of hospitalizations, hundreds of emergency department visits and thousands of doctors' appointments. A large proportion of people surviving their injuries incurs temporary or permanent disabilities.³

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Fishing is particularly dangerous profession with high risk of occupational and endemic diseases globally.⁴

This occupation is characterized by strenuous work, long hours, seasonal employment, and some of the most hazardous conditions in the workforce. They are constantly being tossed around by wind and rough seas, with water in their face and under their feet. It increases the unpredictability of their working conditions.⁵

Fishing is an occupation which should be done with prior precautionary measures with usage of necessary personal protective measures in order to avoid injuries due to the occupation.

Hence, in this study we would like to study the injuries caused due to different factors during fishing and also the usage of personal protective measures.

OBJECTIVES:

1. To estimate the prevalence and pattern of work related injuries among Fishermen.
2. To study the usage of PPE's (Personal protective equipment) among the Fishermen.

METHODOLOGY:

Study Design: This was a Cross sectional study.

Study Setting: This study was conducted among fishermen in 4 villages (Bengere, Shashitlu, Hejamadi, Mukka) which are few of the rural field practice areas attached to The Department of Community Medicine, K S Hegde Medical Academy, Mangalore, Dakshina Kannada District.

Sample Size & Sampling Method: With the formula $Z2PQ/d2$ (prevalence being 20% and absolute precision of 7%).⁶ A sample size of 133 was obtained. From each village study units were obtained according to the population proportionate to the size of the village by using purposive sampling. Total population of these villages were 10000, 2310, 3000, 335 respectively. Total fishermen population were 1000, 465, 600, 56 respectively. We included 62 from Bengere, 30 from Shashitlu, 37 from Hejamadi and 4 from Mukka to slightly exceed our sample size and obtained 133 subjects.

Study Duration: The study was conducted over a period of 2 months (9th July 2015 – 8th September 2015).

Method of Data Collection: Fishermen from 4 rural field practice areas were included in the study.

The data was collected by interview method using structured questionnaire method. The data was collected by interns who were posted in these rural centres.

Statistical Analysis: The collected data was recorded using Microsoft excel. The data was analyzed using SPSS 16 version. Proportions and rates were calculated accordingly.

Ethical Considerations: The following ethical issues were considered for this study.

1. There is no physical harm to the participants as there was no intervention or collection of blood sample.
2. Oral consent was obtained from all the participants.

RESULTS:

Characteristics	Frequency (%)
Gender	N=133
Males	125(94%)
Females	8(6%)
Education	N=133
Illiterate	5(3.8%)
Primary	100(75.1%)
High school	25(18.8%)
PUC	3(2.3%)
Marital Status	N=133
Married	125(94.0%)
Unmarried	8(6.0%)
BPL	N=133
Yes	91(68.4%)
Fishing – Occupation Percentage	Frequency (%), N=133
Family Occupation	104(78.2%)
By Choice	29(21.8%)

Table 1: Showing Demographic Characteristics

	Age	Income	No. years in fishing	Fishing months/year	Fishing hours/day	Hours spent on boat/day	Hours spent on shore /day
Mean	44 years	5748	23.27	7.42	9.30	6.52	3.34
Std. Deviation	11.8	3.750	10.787	2.536	3.232	3.770	2.210
Minimum	22	1000	1	3	4	0	0
Maximum	78	20000	55	12	24	24	10

Table 2: Showing age, income and intensity of fishing

No. of days spent in fishing	Frequency (%), N=133
Daily	80(60.2 %)
Sunday off	27(20.3%)
Twenty Days	14(10.5%)
<20 Days	12(9.0%)

Nature of work	N=133
Driver	12(9.0%)
In boat	78(58.7%)
Net making	18(13.5%)
Selling	5(3.8%)
Non specific	20(15%)

Table 3: Showing nature of work

Type of injury ever	Frequency (%), N=133
Injured	123(92.4%)
Laceration (cuts)	41(30.8%)
Strain	22(16.5%)
Slip & bruise	20(15%)
Fish hook & fish spike	16(12%)
Others	24(18.1%)
Injury in past six months	N=133
Injured	55(41.4%)
Laceration (cuts)	16(12%)
Others	39(29.4%)
Time of injury	N=123*
Morning	49(39.8%)
Afternoon	33(26.8%)
Night	15(12.1%)
Evening	7(5.6%)
Not sure	19(15.4%)

Table 4: Showing type and time of injury

Severity of injury among injured (%)	Frequency (%), N=123*
Minor	105(85.5%)
Severe	18(14.5 %)
Place of injury	Frequency (%), N=123*
Sea	71(58 %),
Shore	49(40%)
Travel	3(2%)
Cause of discomfort at work (%)	Frequency (%), N=133
Hot weather	103(77.4%)
Noise	19(14.2%)
Poor food	11(8.2%)
Dampness	6(4.5%)
Unpotable water	4(3%)
Others	3(2.2%)

Table 5: Showing severity, place of injury and cause of discomfort

Health care seeking behaviour	Frequency (%), N=133
Yes	70(52.7%)
Type of care	N=133
Doctor	29(21.8%)
Self-care	29(21.8%)
Others	9(7.2%)
Ayush doctor	3(1.8%)
Access to doctor	N=133
Yes	73(54.9%)
Insurance	N=133
Yes	86(64.7%)
No	47(35.3%)
Ever usage	N=133
Yes	36(27.1%)

Table 6: Showing care health seeking behaviour of fishermen and usage of insurance

Available facilities at boat	Frequency (%), N=133
Safety jackets	20(15%)
First aid kit	15(11.2%)
Toilet	2(1.5%)
Radio	4(3%)
Use of PPE	N=133
Boots/footwear	12(9%)
Gloves	2(1.5%)
Full clothes	1(0.7%)
Frequency of PPE usage	N=133
Daily	10(7.5%)
In need	3(2.3%)
Post injury	1(0.8%)

Table 7: Availability of PPE'S and their usage

RESULTS: In this study totally 133 individuals were included. Out of 133 fishermen 94% of them were males and 6% were females. Majority (75.1%) of the fishermen were educated up to primary level, 18.8 % were educated up to high school, 3.8% were illiterate and 2.3% were educated up to pre-university. Similarly, 94% of them were married and 6% of them were unmarried. Around 68% of them were below poverty line and 31.8% of them were above poverty line. For around 78.2% of the fishermen it was a family occupation.

The mean age of the individuals was 44 years, the minimum being 22 years and the maximum being 78 years. Mean income of the families was 5748±3.7, minimum being 1000 and maximum 20000.

The mean number of years spent in fishing was 23.27±10.7 years. The mean number of months spent in fishing per year was 7.42±2.5 months. The mean number of hours spent in fishing per day was 9.30±3.2 hours. The mean number of hours spent on boat per day was 6.5±3.7 hours.

The mean number of hours spent on shore per day was 3.3±2.2 hours. Around 60.2% of the fishermen worked daily, 20.3% of them most of the days with Sunday off, 10.5% of them worked for 20 days and 9% of them worked less than 20 days and 15% of them were not sure of their working days.

Around 92.2% of the fishermen had experienced injury at least once in their life time.

Most of the injuries (30.8%) of the were due to cuts, 16.5% of them due to strain, 15% due to slip and bruise, 12% due to fish hook and fish spike, 18.1% were due to other reasons. In the past 6 months 41.2% had experienced injury which was mostly (12%) due to cuts and 29.4% were due to other reasons. Most of the injuries were minor (85.5%) and only 14.5% of the injuries were severe in nature. When enquired about the time of injury most (39.8%) of the injuries were reported in the morning, 26.8% were in the afternoon, 12% in the night, 6% in the evening and 15% of them were not sure of the time of injury.

Regarding the place of injury most (58%) of the injuries occurred at the sea, 40% at the shore and 2% during the travel. On enquiring regarding the working conditions.

Most (77.4%) of the fishermen suffered discomfort at work due to hot weather conditions, 14.2% due to the noise, 8.2% due to the poor food, 4.5% due to the dampness, 3% due to the unpotable water and 2.2% due to the other reasons.

When asked about Health seeking behaviour of the individuals. Around 52.7% of them sought the help of a health care. In which most (21.8%) of them went to a doctor, 21.8% with self-care, 7.2% sought other modalities and 1.8% sought the help of a AYUSH doctor. Around 54.9% of them had access to the health care. Regarding the insurance 64.7% of them had insurance, among them only 27.1% of them utilized the facility during an injury. Regarding the available facilities in the boat. Only 15% of them had provision of safety jackets, 11.2% had first aid kit, 1.5% had toilet and 3% had radio facility. When asked regarding the usage of the personal protective equipment. Around 9% of them used boots, 1.5% of them used gloves and 0.7% of them used protective clothing. Among the users of personal protective equipment. Around 7.5% of them used daily, 2.3% of them used whenever it is needed and 0.8% of them used it post injury.

DISCUSSION: In this study totally 133 individuals were included. Out of 133 fishermen most (94%) of them were males which was similar to study by Norrish AE et al.⁶ Majority (75.1%) of the fishermen were educated up to primary level, where as in study by Basavakumar K V et al only 13% were literate.⁷ Majority (94%) of them were married. Most (68%) of them were below poverty line. In study by Basavakumar K V et al. 47% of the population had annual income less than 15,000.⁷ For Most (78.2%) of the fishermen it was a family occupation. The mean age of the individuals was 44 years, the minimum being 22 years and the maximum being 78 years. Most (60.2%) of the fishermen worked daily, where as in study by Basavakumar K V et al. most of them (48%) worked for 20-25 days.⁷

Around 92.2% of the fishermen had experienced injury at least once in their life time. In study conducted by Jensen OC et al the injury rate was 20.4% per year.⁸

Most of the injuries (30.8%) of the were due to cuts, where as in study conducted Norrish AE et al. one fourth of the injuries were due to fall in which most of the falls caused fractures.⁶ In the past 6 months 41.2% had experienced injury which was mostly (12%) due to cuts and 29.4% were due to other reasons. Most of the injuries were minor (85.5%) and only 14.5% of the injuries were severe in nature. When enquired about the time of injury most (39.8%) the injuries were reported in the morning.

Regarding the place of injury most (58%) of the injuries occurred at the sea where as in study conducted by Norrish AE et al 94% of the injuries were at sea.⁶

Most (77.4%) of the fishermen suffered discomfort at work due to hot weather conditions.

When asked about Health care seeking behaviour of the individuals. Majority (52.7%) of them sought the help of a health care. In which most (21.8%) of them went to a

doctor, where as in study conducted by Jensen O C et al the number of cases treated at hospital were 75.4%.⁸

Around 54.9% of them had access to the health care. Regarding the insurance majority (64.7%) of them had insurance but, utilization of insurance was only 27% in fishermen.

Regarding the available facilities in the boat. Only 15% of them had provision of safety jackets which is low. Even presence of first aid kit was low in the boat. Use of personal protective equipment and measures by the fishermen was found to be low in this study.

CONCLUSION: The prevalence of the work related injuries was high in the study population and the occurrence was more at the sea. Reasons quoted by the study subjects were harsh weather conditions, noise and other physical factors. Safety measures were lacking at the sailing boats. PPE usage was less among them. Health seeking behaviour was fare.

IMPLICATIONS: Dissemination of health information and training of the fishermen for the prevention of work related injuries by appropriate usage of PPEs and installation of safety equipment and behavioural change modification.

LIMITATIONS: Convenient and small sample leads to questionable external validity.

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