



Socio-Economic Conditions and Occupational Health Hazards of Fish Hook Makers in Rural Bengal

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Abstract: Fish hook making is subject to health risks In the rural areas of West Bengal, a notable part of population is engaged in fish related activities in diverse ways either instantaneously or incidentally. The sector of activity of fish hook making is essentially rural and it being most haphazard, no focus has been given to the occupational health problems of these workers by politicians, planners, administrators and scientists. The objectives of our study is to access the occupational health hazards of fish hook makers and to give essential suggestions for the mitigation measures of those hazards resulting in a more desirable quality of life for the countryside inhabitants. A standardized structured questionnaire, with modification to suit the local context was used to collect the data. Data was analyzed in the form of percentage (%), mean and standard deviation. Out of the total 51 respondents 15 were male and 36 were female. It revealed that in supreme number of cases hook workers experience hazards due to machinery induced injury, musculo-skeletal disease, eye disease, skin disease due to working in unhealthy workplaces, manual handling of machines and not using personal protective equipments. So, fish hook makers need a notable degree of consciousness through regular safety training for minimizing their occupational health hazards.,

Keywords: Fish hook, health, countryside, inhabitants, musculo-skeletal, eye disease, safety training

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I. INTRODUCTION

Fish is used as the favourite food item of people of West Bengal. So a large population of the villagers is engaged with the fishing and fishing gear related work in rural areas. From ancient times, man tried out various ways for catching fish and using hook is one of such methods. Hook is a simple, easy to operate and selective fishing device.¹ Excavation of a unique late bronze age copper fish-hook from Bet Dwarka Island, Gujarat, west coast of India proved that advanced

hook fishing technology existed in ancient India.² In hook fishing, partly fixed baits are offered to the fish and fish swallows the bait and hook attached fish can be hauled from the water.³ Hooks may be in different shapes, sizes, thickness of wires, and types of end of the shank (Figure- 1). Nowadays hooks that are made well-tempered and durable, are specially protected by galvanizing, bronzing, tinning, or enamelling to prevent corrosion. The corrosion resistance of different types of fishing hooks has been studied by many authors.⁴



Fig1. Different types fish hook

In Bankura district of West Bengal, a few villagers are engaged in making fish hooks. The financially backward sections of people, who have not much traditional education, are engaged in this work. They make fish hooks along with other household activities to support their family financially. They made different types of fish hooks like Ton, Ring, Boya according to the demand of the market. The fish hooks are made by rural people in their own homes and are collected from the workers by the businessmen. So the female members in the families and few men who do not have job security around the year or few months, are engaged in this type of work. They earn something for the betterment of their families. Thus this sector is vital and an important sector of rural economy in Bankura district. The workers use unsafe and unguarded machinery and their occupational environment is not hygienic. So this occupation is not devoid of health hazards. Various types of health related problems are observed among them. On the other hand, as this occupation is rural and being most unrecognized, no focus has been given to the health problems of these workers by plan makers, politicians, and scientists. Only very few studies have been carried out to document different properties of fishing hooks but many studies were done on the fishing efficiency of the hooks.⁵⁻⁶ Socioeconomic status of individuals is the strongest indicator of people's life that provides social, economic, cultural and political characteristics of people, households, community groups, and institutions.⁷⁻⁸ In rural areas, the socio-economic status of individuals is divided into three categories namely high, middle and low. Low socioeconomic status and its correlates, such as lower education, poverty and poor health, ultimately affect our society as a whole.⁹ We have chosen this topic to assess the socioeconomic status and occupational health hazards of fish hook makers and to give essential suggestions for the mitigation measures of those hazards resulting in a more desirable quality of life for the countryside inhabitants.

2. MATERIALS AND METHODS

Field investigations were conducted in five villages namely Salbedia, Kendbana, Bankanti, Ghutgoria and



Fig2. Data collection from hook makers



Pratappur belonging to Bankura district of West Bengal, India during the time span of October,2019 to February, 2020, where a notable mass of fish hook makers are found . In these villages, more than 150 hook makers are engaged in hook making profession. A premeditated ordered questionnaire, with moderation to match the local perspective was used to gather the data from fish hook makers.The data was evaluated in the shape of percentile(%),mean and standard deviation. Selection of sample and preparation of standard questionnaires are the fundamental part of this research. Before answering all the questions were thoroughly discussed with the respondents. Questions were asked in their leisure hour so that they can get enough time for answering all the questions. The selected respondents were interviewed to collect information about socioeconomic background of the fish hook makers relating to age, sex, number of family members, education, income of the family followed by the procedure applied by Ganguly et al, 2016.¹⁰ During Interview their socioeconomic status, educational level, daily average income, available governmental facility, and health hazards were also asked (Figure-2).

3. STATISTICAL ANALYSIS

Statistical analysis of the experimental data was performed using the computer software's "STAT PLUS 2007 (Trial version)" for calculation of mean and standard error to analyse different types of health hazards among respondents. "MS EXCEL 2007" is used to find out the percentage of various parameters like comparison of age groups among male and female, educational status among male and female respondents, family size and monthly income of hook makers from hook making.

4. RESULT AND DISCUSSION

From our study it was found that among all respondents, 70.58% were female and 29.41% were male. Majority of the respondents (41.17%) were belonging to the age group of 20-40 years, surprisingly they were all females.

This was due to males engaging in other work like agriculture, business. As fish hook making is a household profession so females prefer this profession with their daily household activities. This may give some kind of women empowerment. The number of female workers decreases with their old age as evident from the observation of age group data belonging to 60-80 years where males were predominant. This may reveal that when males are unable to do outside work they tend to do hook making rather than just sitting lazily at home. Figure 3 shows that 23.52% female respondents belong to the age group 40-60 and 5.85% from 60-80 age groups (Figure 3). This may be due to the reason that they are more physiologically active during the 20-40 years of age group when they are capable of doing hook making with other household activities. As we know

education transforms human from the shape of social backwardness to light of social amelioration, from ignorance to enlightenment, and a nation from under-development to foster social and economic development.¹¹ If we consider educational status of the respondents of these villages, it was revealed that female workers are more educated than male workers. Among male workers majority (11.76%) were belonging to standard IV-VII class whereas among female workers majority (29.41%) were belonging to class VIII-IX. Not only that but a significant portion of female respondents (17.64%) were belonging to class X and above (Figure-4). This may be due to higher educated males had chosen another better occupation or due to financial crisis they were compelled to discontinue their study and search alternative.

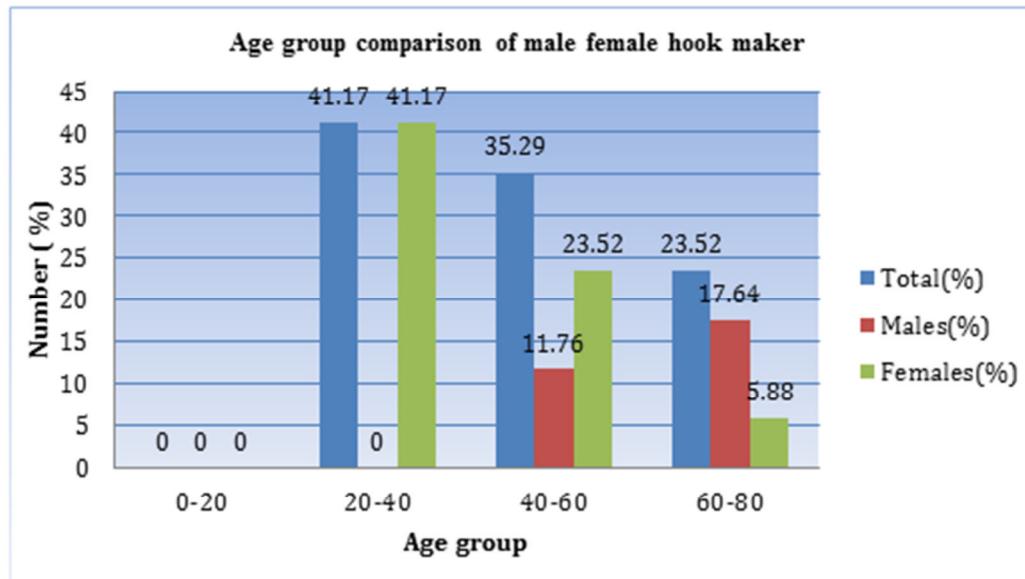


Fig3. Age group comparison between male and female hook maker

Maximum number of respondents earn Rs. 2000 to 2500 per month. A small portion (5.88%) earn up to Rs. 1000 per month, 29.41% earn rupees 1500-2000, 17.64% earn rupees 1000-1500 and 11.76% earn rupees above 2500 per month (Figure 6). So it may be told that if the income increases according to the increasing price rate of the commodities more people will get interested and would engage themselves in this work by using their leisure time

(Figure. 4). If we take a look at the family structure, it is clear that the majority of the respondents (50.01%) are belonging to such a family that consists of up to 3 members only. Only a small fraction (7.14%) of workers belongs to a large family consisting of 8 members. This may reveal that when the number of family members increases then people tend to choose another occupation (Figure. 5).

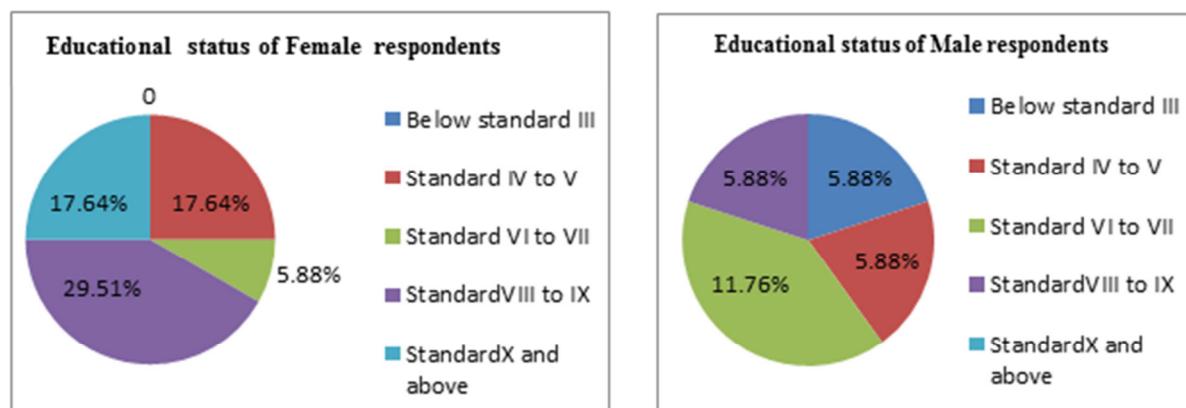
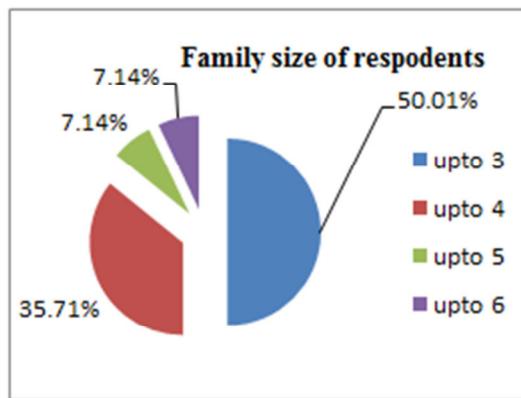
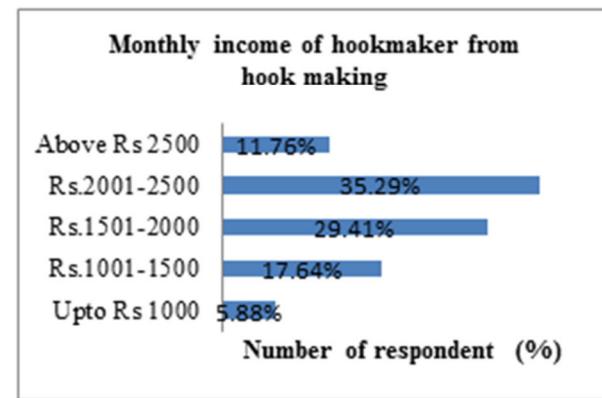


Fig4. Comparison of educational status between male and female hook maker

**Fig 5. Family size of hook makers****Fig 6. Monthly income of hook makers**

Majority (71.42%) of the respondents have a PHH type of ration card, 28.57% of the respondents possess the RKSYI type of ration card. So it is evident that fish hook makers were generally a poorer section of society. Thus this section is indispensable and a significant section of economy in rural areas in Bankura district of West Bengal. Fish hook makers experienced various types of occupational health problems. Occupational disease occurred due to an exposure to risk factors arising from work activity. It was estimated that an average of 137 persons die from occupational disease in each day and an additional 17 die from injuries throughout the world.¹² Occupational health hazards are becoming a serious concern of this sector also. Low back disorders are common, musculoskeletal injuries, particularly due to working in stooped postures in many people working in different factories.¹³ Repeated exposures to vibrations and jarring motions while operating mechanical equipment.¹⁴⁻¹⁵ also create various health hazards. In aquaculture, musculoskeletal injuries occur due to repetitive lifting or hand feeding, lifting of heavy cages or bags of feed, prolonged non-neutral postures at workstations, and tractor use.¹⁶⁻¹⁷ In this study site majority of the male respondents suffers from

musculo-skeletal disease like pain in the body muscles, joints, neck regions, tendons, ligaments where as majority of females suffer from machinery induced injury due to mal handling and not using personal protection equipments. Among five villages average machinery induced injury in males are 1.40 ± 1.14 , whereas average musculoskeletal disease among males are 1.60 ± 1.14 . A large portion of male workers suffer from machinery induced injury (40%), eye disease (0.60 ± 0.89), and skin disease (0.60 ± 0.56). Females also suffer from machinery induced injury (3.40 ± 1.51), skin disease (2.80 ± 1.30) and eye disease (1.80 ± 0.83) at older age. In each village musculo-skeletal diseases are also common among female workwe (3.00 ± 1.22) (Figure 7). Skin disease may be due to worker's negligence about personal health and hygiene or they get very little time to maintain their proper health care. Eye disease may be due to working for a long time under dim light and metal particles emerging during preparation of fish hook. Similar type of observation found among crafting communities, who work in poorly ventilated and inadequately lighted rooms. Workers have to work under unhygienic conditions leading to various health problems.¹⁸

Table 1. Various types of health hazards among hook makers

Types of health hazards	Affected males (%)	Affected females (%)
Machinery induced injury	1.40 ± 1.14	3.40 ± 1.51
Musculoskeletal disease	1.60 ± 1.14	3.00 ± 1.22
Skin disease	0.60 ± 0.56	2.80 ± 1.30
Eye disease	0.60 ± 0.89	1.80 ± 0.83

4. CONCLUSION

From our study, we can deduce that different types of occupational health hazards are regularly found among fish hook makers. So there is a need of notable degree of consciousness and sensitization through frequent safety training to reduce the health hazards. Under these circumstances, if various government sectors and NGO's came forward to overcome the hazards of these fish hook makers then in near future many other poor people engage themselves in this work to raise their socio economic standard.

5. RECOMMENDATION

Elicited from the perception of the current study we propose following recommendation:

1. Unsafe and unguarded manual handling of machines should be renewed.
2. Conscientious handling of machines, wires, marketable fish hooks and proper maintaining of machinery are necessary to avoid dreadful injuries.
3. Wearing PPE like protective goggles, hand gloves, jacket at the time of working can prevent the prevalence of accidents.
4. Occupational environment should be properly maintained.
5. Workers should pay attention to maintain their proper health and hygiene to avoid skin disease.
6. Workers should get systematic and consistent safety training to make aware of various types of protective measures to avoid hazards.
7. There is urgency of more illuminative investigation in attention of prior detection, safeguard and management

of job related diseases damages amongst fish hook makers.

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7. AUTHORS CONTRIBUTION STATEMENT

Mr AnimeshMandal conceptualized and gathered data with regard to this work. MrRajendra Prasad Mondal analyzed these data. The necessary inputs towards the designing of the manuscript were given by Mr AnimeshMandal. Both the authors discussed the methodology and results and contributed to the final manuscript.

8. CONFLICT OF INTEREST

Conflict of interest declared none.