



A preliminary study on occupational problems among fisherwomen in Puducherry

¹Abhishek Madan * , ¹Ajay Kumar V.J., ¹Bhanu Rekha.V, ¹Indhu Prathibha. A, ²Kavita Vasudevan. P

¹Department of Veterinary Public Health & Epidemiology
Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry.

²Department of Community Medicine
Indira Gandhi Medical College and Research Institute, Puducherry

*Corresponding author E-mail:abmadan@outlook.com

Abstract

Aquatic Fish production in India contributes to 5.5 per cent of the agricultural GDP of the country out of which 0.04 per cent is contributed by U.T. of Puducherry. Selling of fish in Puducherry district is carried out predominantly by women. These women are at the risk of various health problems associated with the occupation. A descriptive cross sectional study was undertaken to assess health-related and other occupational problems among fisherwomen in Puducherry district. The data was collected by interviewing 55 fisherwomen using a structured pre-tested questionnaire and also by observation. Data regarding their demographic details, years in occupation, income details, hours spent at work, musculo-skeletal problems, skin problems and other occupation related problems were collected. Also, an enquiry was made to know what could be done to make their occupation more comfortable. The average age of the respondents was found to be 49 years and the average time spent at work per day per person was 8.25 hours. The results showed that out of 55 fisherwomen interviewed, all were experiencing musculo-skeletal problems related to their work posture/activity and 67.27 per cent had skin problems. Among the 67.27 per cent with skin problems, 10.81 per cent had itching alone, 54.05 per cent had blanching alone and 13.51 per cent had hyperkeratinisation due to constant handling of ice, sand, fishes, water etc. Physical injuries during handling and cutting of fish and shellfish were seen in 89.09 per cent of the fisherwomen. A container which could aid the purpose of storage of fish at point of sale was the main requirement put forward by majority of the fisherwomen (54.55 per cent). The study revealed the various occupational problems of the fisherwomen and provides insight to develop appropriate strategies to address the problems so as to improve the health and in turn the socio-economic conditions of the fisherwomen.

Keywords: Descriptive cross sectional study, Fisherwomen, Puducherry, occupational problems

Introduction

Aquatic Fish production in India contributes to 5.5 per cent of the agricultural GDP of the country out of which 0.04 per cent is contributed by U.T. of Puducherry i.e. including Karaikal, Mahe and Yanam districts (1). In Puducherry, fisherwomen constitute almost 50 per cent of the labour force in fisheries (2). As elsewhere in India, selling of fish in Puducherry district is carried out predominantly by women as it is their domain (3). Women working in fish processing, selling and cutting are exposed to many situations such as prolonged working hours without break, repetitive activity, improper body mechanics, absence of protective equipment while handling raw iced fishes and handling of sharp instruments (4). In recent times poor work environmental conditions and their effect on health has been documented as well (5) (6). Occupational injuries are followed by a severe after-effect in the long run (7). In addition, polluted environment is responsible for health problems such as respiratory irritation, blanching of hand and headache (8). Occurrence of health problems in fisherwomen also leads to decrease in work performance and productivity (9).

The present study was undertaken in Puducherry district of the U.T of Puducherry to understand the demographic details and various occupational health problems faced by the fisherwomen and to establish relationship between selected demographic factors and the occupational problems. An assessment so as to what can be done to benefit them socio-economically in the occupation was also made in the study.

Materials and Methods

Data collection

A cross sectional study was undertaken in various areas of Puducherry district using a structured pre-tested questionnaire. The respondents were selected by simple random sampling of different age groups involved with fish selling and cutting. Respondents included fisherwomen from fish markets and individual vendors. The sample size of 55 was obtained assuming prevalence of major skin problems at 30 per cent and for 10 per cent level of significance (10). Major skin problems included problems such as blanching, itching and hyperkeratinisation while physical injuries included the skin injuries. The data collected using a structured questionnaire included the

demographic details, years in occupation, income details, hours spent at work, method of storage of fish, consumption of fish and shellfish, personal hygiene, musculo-skeletal problems, skin problems, and other occupation related problems.

Analysis of data

Basic tabulation of data was done by using Microsoft Excel and *Chi-Square* test was employed to check association of specific occupational problem with chosen demographic data.

Results

The occupational health and health-related problems faced by fisherwomen are shown in Fig 1. Musculo-skeletal problems was present in 100 per cent of the fisherwomen. Among 55 fisherwomen, average age of the respondents was 49 years with the minimum age being 33 years and maximum age being 75 years. Nearly 40 per cent of the fisherwomen were aged above 50 years. Majority of the fisherwomen (26 out of 55) were only educated up to primary level and none of the fisherwomen had completed their higher secondary education. Majority of the women (67.27 per cent) spent on an average 6 – 10 hours per day at work. The per day income of 60 per cent of the fisherwomen was less than or equal to 200 INR. (Table 1)

Out of 55 fisherwomen, 49 of them reported of repeated minor cut injuries due to handling of the fish as well as other shell fish. All the fisherwomen complained of musculo-skeletal problems in various areas of their body. Major skin problems such as blanching, itching/rashes, hyperkeratinisation were seen in 67.27 per cent of the fisherwomen (37 out of 55) with blanching alone being the predominant skin issue in 20 out of 37 subjects. The split number for skin problems is also given in Table 1. and Fig 2. On constructing a frequency table, 38 out of 55 fisherwomen were working in the field for over 10 years and the rest for less than or equal to 10 years (Table 2).

To find out the association between no. of years of experience at work and skin problems, chi-square test was employed and a value of 4.846 was obtained with $p=0.02$ significant at $p<0.10$. No significant association was obtained between no. of years at work and injuries or musculo-skeletal problems (Table 3).

Table 1 Frequency and Percentage distribution of Demographic details

Characteristics	Frequency	Percentage
1. Age		
31-50 yrs	33	60.00
51-75 yrs	22	40.00
2. Hours at work per day		
1 – 5 hrs	7	12.73
6 – 10 hrs	37	67.27
>10 hrs	11	20.00
3. Educational Qualification		
No formal education	24	43.64
Primary	26	47.27
Secondary	5	9.09
Higher Secondary	0	0.00
4. Income per day (in rupees)		
<200 or =200	33	60.00
200 to 400	21	38.18
>400 or =400	1	1.82
5. Injuries at time of fish selling/cutting	49	89.09
6. Musculo-Skeletal problems	55	100.00
7. Skin problems	37	67.27
Blanching alone	20	36.36
Itching alone	4	7.27
Blanching+Itching	8	14.55
Hyperkeratinization	5	9.09
8. No. of years of work		
<8 or =8	13	23.64
>8	42	76.36

Table 2. Frequency Table for No. of years at work

No. of Years at Work	Frequency
0-5	10
6-10	7
11-15	11
16-20	6
21-25	2
26-30	9
31-35	3
36-40	6
41-45	1

Table 3. Chi-Square test result

Factor	Degrees of freedom	Cut off Chi-Square value	Observed Chi-Square value	p value
No. of years in occupation < or =8 ; >8	1	3.841	4.846	0.02 (significant at p<0.10)

Figure 1. Occupational problems among fisherwomen

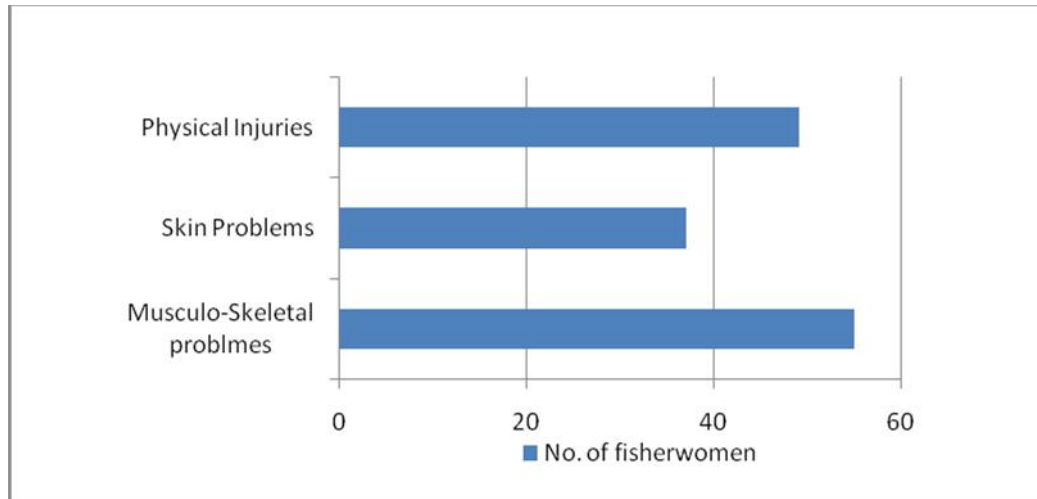
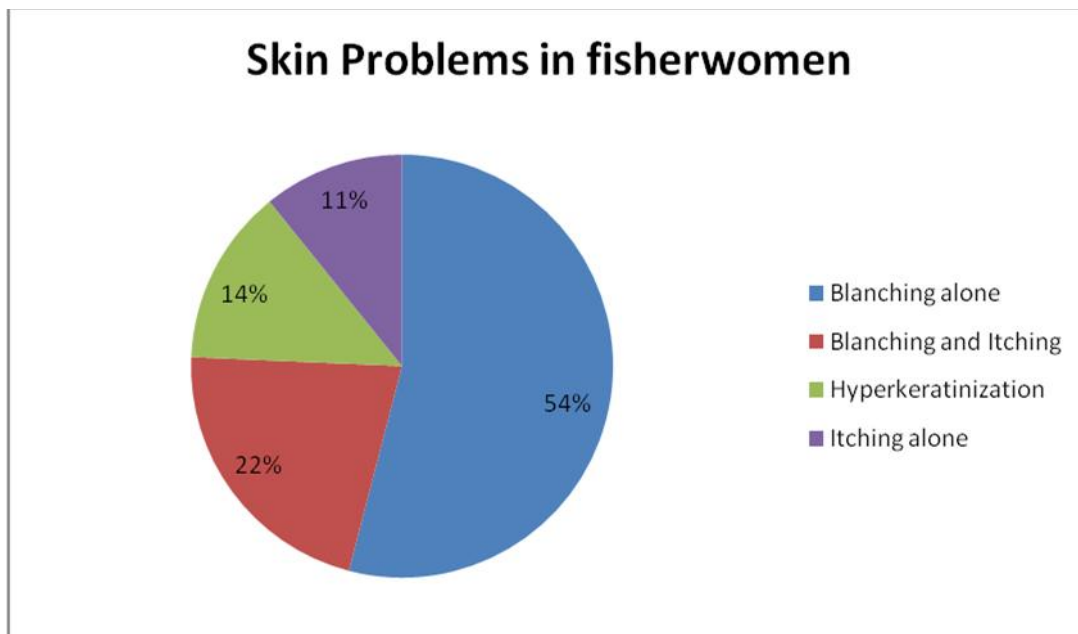


Figure 2. Skin problems among fisherwomen



Discussion

In the present study, all the fisherwomen complained of musculo-skeletal problems, predominantly pain, which may be attributed to prolonged working hours without break, repetitive activity, improper body mechanics and improper posture (4) (11). The percentage was higher than that reported by Dhaka *et.al.* in fish processing industries i.e. 88 per cent (4) and also higher than another study by Nag *et.al.* i.e. 71 per cent (11). Tenosynovitis has also been reported as a problem by Douglas *et.al.* (12). Age related musculo-skeletal problems may be an aggravating factor for musculo-skeletal problems in older fisherwomen in whom possibly improper sitting posture at work place is the main cause of musculo-

skeletal pain. There is a scope to formulate appropriate orthopaedic exercises to address the musculo-skeletal issues which may be beneficial to the fisherwomen.

Out of the respondents, 89.09 per cent seem to have frequent cuts and injuries during handling of the fish and shell fish. Chances of injuries are higher in fish processing workers than non-exposed workers (13). Though minor cuts and abrasions do not pose an immediate threat but may have long term effects. (14). Unhygienic conditions at workplace pose a threat for development of various infections. Bleeding during injury may pre-dispose to infections as well as reduced working hours which might impact them economically. Though older fisherwomen have more experience at work (4) the possibility of injury

causation by small tools such as knives or the pricks of thorny fish fins or bites of fishes are a matter of chance. The cuts and abrasions along with other skin problems tend to cause more discomfort at work. The use of protective hand gear is necessary to avoid these frequent cuts or abrasions and they to be ergonomically designed for the fisherwomen.

Major skin problems such as blanching, itching/rashes, hyperkeratinisation were seen in 67.27 per cent of the fisherwomen. This is lesser than that reported by Dhaka *et.al.* in fish processing industries i.e. 84.8 per cent (4). Another study in Norway by Asamo *et.al.* in sea food processing industries showed the skin problems in female workers to be 60.2 per cent which included dry skin, itching, rash and chronic sores. (15). Studies in fish processing workers have also highlighted allergies as common work related symptoms (16). The skin problems may be due to constant handling of ice or water whereas the rashes and itching may be due to salt in the water or allergy to fish and shell fish. On employing chi-square test and checking the association of experience at work with the skin problems, it was revealed that there is significant relationship between the no. of years at work and the skin problems; with fisherwomen having lesser experience (less than or equal to 8 years) being prone to develop more skin problems. This convinces the fact that new entrants into the profession need to be made aware of skin related issues such as rashes and itching due to potential allergens or salt water by contact and also further research needs to be carried out for factors responsible for skin problems. Older fisherwomen tend to get used to these problems and so may under-report the skin problems whereas fisherwomen with lesser experience may tend to over-report the same. To protect from the skin problems, gloving can be done or other protective hand gear can also be given to the fisherwomen which is in accordance with the suggestion by Saha *et.al.* (8). However, considering the long hours at work, the hand gear may be uncomfortable if they are not ergonomically designed and also a taboo exists among certain fisherwomen that wearing gloves or protective equipment may give an impression to the buyers that they may have some skin problems. The acceptance and comfort of protective hand gear among fisherwomen needs to be further researched upon. From an retail consumer point of view, use of hand gear may add to aesthetics of the fish selling and give an increase hygienic handling of the raw fish and shell fish.

Majority of the fisherwomen (54.55 per cent) on being asked what can be done to make their life more comfortable in the occupation, replied that they require ice boxes to enhance keeping quality of the fish. This brings back to light the need to maintain cold chain (17) at point of sale so that good quality of sea food is available to the consumers as this process seems to slow down the process of spoilage of the raw fish and shell fish.

The limitations of the present study include its nature of being cross – sectional and that it is a preliminary study. Confirmation of the information and the extrapolation of hypothesis may require study on a larger population. However, considering the demographics of fisherwomen in Puducherry district, the present study has been carried out. Also, many other possible factors responsible for skin problems in fisherwomen have not been dealt with in this study as only selected parameters have been evaluated.

Conclusion

As fish selling and cutting in Puducherry is primarily done by fisherwomen at retail points, the various occupational health problems and other related problems were identified in this study. From an economic point of view, cold storage boxes if made available to the fisherwomen at point of sale by efforts of appropriate agencies and authorities concerned will help to maintain the cold chain and consequently quality of raw fish and shell fish reaching consumers will be better. To address the musculo-skeletal problems, formulating exercises to provide relief can be carried out by physiotherapists through women self help groups. The study affirms that fisherwomen with less number of years of experience seem to be at higher risk of being affected by skin problems related to work and use of protective hand gear may help not only reduce and address the problem but also may provide better aesthetics to the consumer at the point of sale.

References

1. Annual Report. 2017-18. Department of Animal Husbandry and Dairying, Government of India.
2. Government of Puducherry. 2017-18. Department of Fisheries and Fishermen Welfare.
3. Ghosal, J. and Sikdar, M. Study on the status of fisherwomen health and other perspectives: An overview. International Journal of Current Research. June 2014. 6(6):7011-7104

4. Dhakal, H., Ansuya and Nayak, MG. Occupational health problems and factors contributing to the problem among Fisherwomen. International Journal of Advanced Research in Biological Sciences. 2015. 169-176.
5. Ghosh, A K.,Bhattacharjee, A. and Chau, N: Relationships of working conditions and individual characteristics to occupational injuries: a case-control study in coal miners. *J Occup Health* 2004, 46(6):470-80.
6. Gauchard, G., Chau.N., Mur, JMand Perrin P: Falls and working individuals: Role of extrinsic and intrinsic factors. 2001. *Ergonomics* 44(14):1330-9.
7. Larsson, TJ. And Bjornstig U: Persistent medical problems and permanent impairment five years after occupational injury. *Scand J Soc Med* 1995, 23:121-128.
8. Saha, A. Nag, A. and Nag PK. Occupational injury proneness in Indian women: A survey in fish processing industries.2006. *Journal of Occupational Medicine and Toxicology*, 1:23doi:10.1186/1745-6673-1-23
9. Makinen, TM. And Hassi, J. Health Problems in coldwork.2009 Jan; 47: 207-220. Available fromhttp://www.Jniosh.go.jp/en/induhel/pdf/IH_47_3207 .pdf
- 10.Thrusfield, M. *Veterinary Epidemiology*. Third edition. 2007. Blackwell Publishing. p.e. 233.
- 11.Nag, A.,Vyas, H., Shah, A. and Nag, PK. Risk factors and musculoskeletal disorder among women workers performing in fish processing. *AMJ Ind Med*. 2012 Sep; 55 (a): 833- 843.
- 12.Douglas, J. 1995 Salmon farming: occupational health in a new rural industry. *Occup Med.*, 45:89-92.
- 13.Palsson, B., Stromberg, U., Ohlsson, K. and Skerfving,S.: Absence attributed to incapacity and occupational disease/accidents among female and male workers in the fish-processing industry. *Occup Med (Lond)* 1998, 48(5):289-95.
- 14.Saha, A., Kulkarni, PK., Chaudhuri, RN. And Saiyed, HN.2013. An introspection into reportable accidents: Scenario of fertilizer industry. *Indian Journal of Occupational and Environmental Medicine*. 7(3):23-28.
- 15.Aasmoe, L., Bang, B., Andorsen,GS., Evans, R., Gram, IT. And Lochen, ML.2005.Skin symptoms in the seafood processing industry in north Norway. *Pubmed*.Feb;52(2):102.
- 16.Jeebhay MF, Lopata AL, Robins TG: Seafood processing in South Africa: a study of working practices, occupational health services and allergic health problems in the industry. *Occup Med (Lond)* 2000, 50(6):406-13.
- 17.Bharti A. Examining market challenges pertaining to cold chain in the frozen food industry in Indian retail sector. *Journal of Management Sciences And Technology*. 2(1),Feb- 2014.

Access this Article in Online	
	Website: www.ijarbs.com
	Subject: Occupational Medicine
Quick Response Code	
DOI: 10.22192/ijarbs.2019.06.08.004	

How to cite this article:

Abhishek Madan, Ajay Kumar V.J., Bhanu Rekha.V, Indhu Prathibha. A, Kavita Vasudevan. P. (2019). A preliminary study on occupational problems among fisherwomen in Puducherry. *Int. J. Adv. Res. Biol. Sci.* 6(8): 29-34.

DOI: <http://dx.doi.org/10.22192/ijarbs.2019.06.08.004>