

Morbidity and Occupational Hazards among Prawn Peelers

Survey from Kerala, India

Abstract

Prawn pre-processing, locally called prawn peeling is a labour-intensive activity. More than 90 per cent of the workforce in prawn pre-processing centres are women. Occupational health problems among prawn-peeling workers are a matter of serious concern. The workers lack awareness and knowledge of occupational health hazards and safety. In the peeling sheds, they are exposed to cold environments, chlorinated water, and fish protein-related bio-agents.

In most of the peeling sheds, women work in a sitting or squatting position, bending forward while peeling. The floor of the peeling sheds is waterlogged, and the women must spend long hours on the wet floor which is the root cause of many of their ailments. Joint pain, low back pain, numbness of hands and legs, and various forms of allergies are health problems attributed to the work environment and work posture.

Keywords

Prawn peelers, occupational hazard

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INTRODUCTION

Women in the fisheries sector are economically and educationally backward and have only low functional health literacy. Though they are aware of the health, unemployment and socioeconomic considerations force them to work in such hostile conditions. They are employed on a contract or casual basis and hence are deprived of many of the social security benefits. Hence, the provision of quality, affordable, healthcare services to this sector of women is a difficult challenge.

Alappuzha is the leading district in fish production in Kerala. It has a fishermen population of 1.9 lakh which is the largest in Kerala. The seafood processing sector depends mainly on the pre-processing sector which is popularly known as "peeling sheds". Many prawn-peeling units are located along the coastal Ambalappuzha region of the district. With this background, a survey among workers in the prawn peeling industry in Ambalappuzha North Panchayat in Alappuzha district, Kerala was conducted to assess workers' work-related stress and health hazards.

Jeebhay et. al. 6 in a survey on seafood workers in South Africa in 2010 found that inhalation of dust, steam, vapours, and seafood proteins generated during cutting, scrubbing cleaning, cooking, or boiling and drying activities produced an IgE-mediated immune response. Dry aerosols are formed during the prawn-blowing operations. The molecular weight of crustacean allergen originating from meat and wastewater during processing ranges between 4.4 and 97 kDa.6. It has been suggested that some of these allergens in the 30-39 kDa range may be like the cross-reactive crustacean allergenic tropomyosin. The prevalence of occupational respiratory disease includes 26% allergies like rhino-conjunctivitis, dermatitis etc., suggesting that the prawn peelers are most likely to develop occupational allergy and asthma.

In Kerala Afsal et. al.2 in 2014 found that more

than 90% of workers in prawn preprocessing centres and 70% in processing of fishery products are women. Many peeling shed workers were found to suffer from a variety of occupational health hazards like back pain, pain in joints, uterine injuries and various forms of allergies or skin disorders.

Aim

To determine the prevalence of comorbidities among prawn peelers in Ambalappuzha North panchayat.

Study design

We designed a cross-sectional study of prawn peelers in Ambalappuzha North panchayat, Kerala, India in 2017-2018. Our sample size calculations were for 300. We used a simple random sampling methodology to choose the peeling centres.

Inclusion criteria - All prawn peelers of Ambalappuzha North panchayat who were willing to participate in this study. Exclusion criteria--Those who were not available at the time of study.

Ethical considerations -- Permission from the Principal and HOD Department of Community Medicine was taken before the study. Written consent from each study participant was taken before collecting the data & anonymity was maintained.

Data analysis

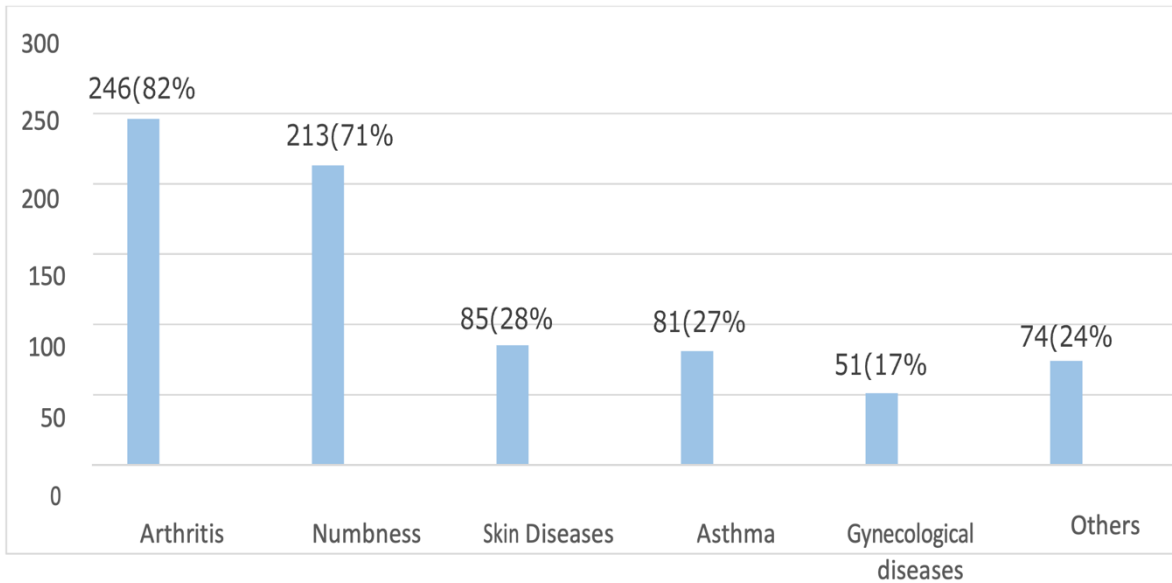
Study variables - Age, gender, duration of work, symptoms, co-morbidities. Study instruments/tools - Semi-structured questionnaire. Data entry was done through MS Excel and analysis was done with SPSS V 25.

The study participants who had health morbidities were given proper medications through nearby PHC. Health education regarding wearing gloves, avoiding sitting on wet floors, frequent change in a sitting position while peeling prawns, screening, and early treatment initiation on reproductive or urinary tract infections were given.

Results

The study was conducted among 300 prawn peelers distributed over Ward 13,14,15 in Ambalappuzha North panchayat with 58% of them from Ward 13. Most of them were female (99%). Most workers were below 50 years of age. The mean age of participants was 46.75 with a standard deviation of 9.945. 65.7% worked in standing posture. Of the 103

participants working in a sitting posture, 12.3% sat on a wet floor. 21.7% are involved in another job also. Most of them had more than 5 years of experience at prawn-peeling. Only 18% had less than 5 years' experience, suggesting new recruitments were less. 74.3% worked for less than 8 hours per day. The prevalence of co-morbidities is shown in Figure 1.



Gloves were not available for most of the workers. Only 106 of 300 participants received gloves. Among them, only 19 use it. The most common gynaecological diseases among the workers were fibroids (50%), uterine bleeding (41%) and uterine prolapse (15%). Those aged above 50 years were found to have a higher prevalence of arthritis (90.5%) than those below 50 years (Pearson Chi-square = 5.679, p = 0.017).

Table 1: Prevalence of co-morbidities vs duration of exposure to work

Duration	Arthritis present	Numbness present
> 5 years	207 (84.1%)	183 (74.4%)
<= 5 years	39 (72.2%)	30 (55.6%)

Those working for more than 5 years were found to have a significantly higher prevalence of arthritis (84.1%; Pearson Chi-square = 4.266; p = 0.039), and numbness (74.4%; Pearson Chi-square = 7.629, p= 0.006). Those working in sitting posture were found to have a significantly higher

prevalence of arthritis (90.3%) than those who were working in standing posture, Pearson Chi-square = 7.305; p = 0.007. Among prawn peelers having arthritis, 82.5 % developed the disease after starting the job and among those having numbness, 68.5 % developed it after starting the job.

Discussion

The study was conducted among prawn peeling workers in the Ambalappuzha North Panchayat to study the morbidity pattern among prawn peelers and their association with different variables. Most of the participants in our study were females. Previous study² reports suggest that more than 90% of the labour force in prawn peeling centres within the Alappuzha district comprises the female population. About 72% of the study population were aged below 50 years of age.

A vast majority of the study participants have been working in these preprocessing sites for a period of greater than 5 years, most work in the shed for less than 8 hours per day, which depends on the amount of raw material present to be preprocessed on each day. Most participants, prefer to work in the standing posture while the rest interchange between standing and sitting according to their comfort, some must sit on a wet floor. The majority did not receive gloves, and out of those who received gloves only 18% of them used them. They do not prefer to use gloves as it slows their work. None of them used masks. Previous study² in Alappuzha shows that about 95% of the workers did not receive gloves, masks, gum boots etc. suggesting that this was to reduce the cost of production.

Among the workers, arthritis was the most common complaint, followed by numbness, skin diseases, asthma, and gynaecological disorders like bleeding, fibroid and uterine prolapse. Many of the workers had acute respiratory problems and allergies. Dhanya⁴ (2013) reported that 62% suffer from back pain, arthritis, ulceration and other occupational hazards like muscle cramps, skin irritation, eczema, respiratory problems, allergy, back pain and rheumatism. A vast majority of women reported joint pain, total body pain and numbness of hands; many had problems regaining normal position from working posture (Rekha and Girija,²⁰¹⁶)³. Mohammed et al (2017)⁵ reported repetitive muscle strain. Jeebay et al (2000)⁶ reported that the prevalence of occupational asthma

ranges from 7% to 36% and for occupational protein contact dermatitis, from 3 to 11%.

Nearly 90% who developed rheumatism were above the age of 50 years and worked more frequently in sitting posture. Numbness was more common in workers who had been working in this sector for more than 5 years, with the majority developing rheumatism and numbness after starting this job. Rekha and Girija, (2016)³ reported that all the women workers complained about low backache and numbness of feet, caused by the working posture and 70% of the women in the prawn peeling sector have anterior knee pain due to their posture of work. In this study, a qualitative assessment of the problems faced by prawn-peeling women was not done. Further studies are needed to assess this.

CONCLUSION

The most common morbidity among prawn peelers was arthritis, followed by numbness, skin diseases, asthma, and gynaecological diseases. The study revealed that age, duration of work and posture are significantly associated with arthritis. Duration of work is also significantly associated with numbness of the leg. The majority developed arthritis and numbness after starting the job.

The prawn peelers in pre-processing units need better health care and working environment. The workers should be educated on better posture during work and advised on taking breaks in between work. Basic medical check-up facilities including occupational health services should be provided and workers' health should be monitored especially for arthritis, numbness, skin diseases, asthma, and gynaecological diseases. Gloves and masks should be made available for all workers and instruct workers to use them.

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