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Original Research Article

Prevalence of skin dermatoses among fishermen in Puducherry

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ABSTRACT

Background: Fishermen always work and reside in environmental conditions that are harmful to their health. The primary objective of this study was to evaluate the magnitude of skin diseases among fishermen and the secondary objective was to assess the knowledge, attitude and practices related to skin diseases and their prevention.
Methods: This was a cross-sectional study carried out among 420 fishermen and women belonging to fishing area of Puducherry for a period of three months from December 2018 to February 2019.
Results: The majority of the study populations (26.67%) were in the age group of 30-40 years. The majority were males (1.43%), 88.57% were married, 16.19% were illiterate whereas 42.86% studied up to the secondary school level. The majority (54.29%) were working for more than 12 hours daily. The majority (30.48%) were in the fishing occupation for more than 20 years. The non-infectious skin disorders were: sunburns (25.71%), palmoplantar hyperkeratosis (19.52%), melasma (14.05%), acute urticaria (7.85%), photoaging (2.86%), wrinkles (2.14%) and freckels (1.90%). Among infections, 10.48% had tinea infections followed by pityriasis versicolor in 7.38%, bacterial infection in 3.57%, onychomycosis and warts in 1.19% each respectively and all the study population had only one type of infection. All men in the study were not using sunscreens and any protective wears and they were not aware of sun induced skin damage.
Conclusions: The most common diseases encountered were sunburn, palmoplantar hyperkeratosis, melasma, acute urticaria, fungal infections, bacterial infection and photoaging. The fishermen were not using sunscreens and protective wares and they were unaware of solar skin damage.

Keywords: Skin dermatoses, Fishermen, Plantar hyperkeratosis, Acute urticaria, Sunburn, Melasma

INTRODUCTION

Fishermen are always exposed to environmental risk factors. They are constantly exposed to seawater, salt, high wind flow, humidity, solar radiations and sand that harm their skin. Stings from marine creatures, contact with sea products and sharp equipments used in marine work all pose a hazard to their skin**.** They are more prone to sustain traumatic injuries and stings that may facilitate entry of infective microorganisms.[1] Fishermen have prolonged hours of continuous work and fishing still remains a hazardous and stressful occupation as it presents difficult physical conditions, dislocation, isolation and less than ideal personal habits.[2,3] Fishermen have lower socioeconomic status and their illiteracy influence their general health.

Population based studies about fishermen are few and even globally the information on these issues is not addressed adequately. India is having one of the largest

fresh and marine water resources, stands second and seventh in the world, in total fish production from fresh and marine waters respectively.[4] Length of coastline of India is 7517 kms.[5] In India fishing is one of the most important economic occupation but there is a lack of study on the skin health of fishermen. The prevalence of skin diseases among fishermen has not been addressed adequately.

So we undertook this study to find out the magnitude of skin diseases among fishermen in Puducherry.

METHODS

This was a cross-sectional study conducted among fishermen and women in the age group of 10-70 years belonging to fishing area of Puducherry. The study was done for a period of three months from December 1st 2018 to February 28th 2019**.** Non consenting individuals were excluded from the study. Institute research committee clearance and Ethical committee clearance were obtained. Three fishermen areas of Puducherry namely Narambai, Moorthykuppam and Panithittu were selected for the study.

Sample size

Minimum sample size required was 420, calculated based on 10% prevalence, 95% CI, 3% absolute precision with using the formula $4pq/d^2$ formula. So during the 3 months period i.e., 01.12.18 to 28.02.19, total 420 subjects were included in the study.

All details of the study population like age, sex, clinical type and site of skin dermatoses if any was examined and noted. An individual questionnaire to assess the knowledge, attitude and practices related to skin diseases and their prevention was prepared. All data entered to excel sheet and analyzed by excel software for windows 10.

RESULTS

The majority of the people (26.67%) were in the age group of 30-40 followed by 23.10% each in the 20-30 and 40-50 age groups respectively. The least number of people (3.56%) belonged 10-20 age group (Table 1).

Table 1: Distribution of the patients as per the age.

Age (in years)	N	Percentage (%)
10-20	15	3.56
20-30	97	23.10
30-40	112	26.67
40-50	97	23.10
50-60	83	19.76
60-70	16	3.81
Total	420	100.00

Table 2: Distribution of the patients as per the sex.

Sex	N	Percentage (%)
Male	384	91.43
Female	36	8.57
Total	420	100.00

Table 3: Distribution of the patients as per the prevalence of various types of dermatoses (n=420).

Dermatoses	N (%)
Sunburn	108 (25.71)
Palmoplantar hyperkeratosis	82 (19.52)
Fungal infections	80 (19.04)
Tinea infection (corporis, cruris, faicei)	43 (10.24)
Pityriasis vericolor	31 (7.38)
Onychomycosis	5 (1.19)
Toe web fungal infection	1 (0.24)
Melasma	59 (14.05)
Acute urticaria	33 (7.85)
Bacterial infection	15 (3.57)
Photoaging	12 (2.86)
Wrinkles	9 (2.14)
Freckels	8 (1.90)
Wart	5 (1.19)
Injury wounds	5 (1.19)
Solar elastosis	2 (0.48)
Telangiectesia	2 (0.48)
Toe web fungal infection	1 (0.24)

The majority of the study population (91.43%) were males (Table 2).

Majority of study population (25.71%) presented with Sunburn, followed by palmoplantar hyperkeratosis in 19.52%, melasma in 14.05%, fungal infections in 19.04%, acute urticaria in 7.85%, bacterial infection in 3.57%, photoaging in 2.86%, wrinkles in 2.14%, freckels in 1.90%, wart in 1.19%, injury wounds in 1.19% and solar elastosis and telangiectesia in 0.48% each. Among the 19.04% of fungal infections, tinea infections were seen in 10.24%, onychomycosis in 1.19% and toe web nail infection in 0.24% (Table 3).

Knowledge, attitude and practices related to skin diseases and their prevention

Regarding literacy it is nice to note that 352 out of 420 study population (83.8%) were literates. Majority of them (41.9%) are in the fishing job for more than 20 years. Majority of them (54.29%) were at sea for more than 12 hours per day. All the 384 men who went for fishing were not using sunscreens, protective clothing, shoes, gloves and caps. All of them were not aware of the skin damage caused by prolonged sun exposure. All of them dry their wet clothes and take bath after fishing activity (Table 4).

Table 4: Distribution of the patients as per the various socio demographic characters.

Socio-demographic characters	N (%)
Marital status	
Married	372 (88.57)
Unmarried	40 (9.52)
Age less than marital age	8 (1.90)
No. of people living per home	
≤4	264 (62.86)
>4	156 (37.14)
Level of education	
Illiterate	68 (16.19)
Primary school level	84 (20.00)
Secondary school level	180 (42.86)
College university	88 (20.95)
Duration of employment (yrs.)	
2-10	116 (27.62)
11-20	128 (30.48)
>20	176 (41.90)
Working hours (hrs.)	
<8	172 (40.95)
8-12	20 (4.76)
>12	228 (54.29)
Addictions	
Alcohol	116 (27.62)
Tobacco	62 (14.76)
Smoking	48 (11.43)
No addiction	194 (46.19)
Type of job	
Fisherman	292 (69.52)
Pilots	84 (21.87)
Mechanic on board	8 (1.90)
Use of protective clothing, gloves, shoes and caps	Nil
Use of sunscreens	Nil
History of marine stings	30 (7.14)

DISCUSSION

In our study the majority of the study population (26.67%) were in the age group of 30-40 years. The majority of them (91.43%) were males. Basavakumar et al also noted male preponderance in their study.[4] Sunburn was the most frequent dermatosis encountered in our study in 108 people (25.71%). This may be because a majority of 54.29% of them were at sea for more than 12 hours per day and none of them were using sunscreens, protective clothes or caps. Laraqui et al observed sunburn only in 11.9% of their Moroccan study whereas Malikey et al noted sunburn in (15.2%) of their study in Basrah.[6,7]

The second frequently observed dermatosis in our study was palmoplantar hyperkeratosis seen in 82 persons (19.52%). This may be because fishing requires hard work for long hours and the fishermen are more prone to repeated friction and pressure and none of them in our study wore protective gloves and shoes. Laraqui et al noted palmar hyperkeratosis (67.1%) and plantar hyperkeratosis (59.4%) as the most frequently observed dermatosis in their study.[6] Malikey et al noted a statistically highly significant occurrence of palmar hyperkeratosis of 56.5% in their study [7]. In our study all the 82 persons showed hyperkeratosis of both palms d soles.

The third most frequently observed dermatosis in our study was fungal infection seen in 80 persons (19%). The frequency of fungal infections was 44.4% and 34.3% in the study of Laraqui et al and Malikey et al respectively.[6,7]

Melasma was seen in 14.05% of our study. Malikey et al noted melasma in 6.1% of their study whereas Laraqui et al noted nil melasma cases in their study.[6,7]

Tinea infection was seen in 10.24% in our study whereas Laraqui et al noted it only in 0.8% of their study.[6] We found pityriasis versicolor in 7.38% in our study which is same as that noted by Laraqui et al (7.3%).[7] Laraqui et al noted a high prevalence of onychomycosis (21.3%) whereas Malikey et al noted a low prevalence of 2.2% only.[6,7] Our study showed a low prevalence of 1.19% of onychomycosis.

Bacterial infections were observed in 3.57% in our study whereas it was 8.3% and 15.2% in the study by Laraqui et al and Malikey et al respectively.[6,7]

We noted viral warts in 1.19% of cases. Laraqui et al found skin warts in 4.2% and Malikey et al in 10.9% of their studies respectively.[6,7]

In the study by Laraqui et al 43% of fishermen had one type, 27.2% two types, 9.5% three types and 2.5% four types of dermatological diseases and 17.4% of them did not have any skin disease at all[6]. In our study all the 420 persons had skin disease and all had only one type of skin disease.

Though majority of the fishing population were literates, they were unaware of solar skin damage and they were not in the habit of using either sunscreens or protective wares.

CONCLUSION

Our study showed that despite majority of the fishermen being literate, they were not aware regarding how to protect themselves from physical injuries and solar skin damage as none of them were using protective clothing, gloves, shoes or caps or sunscreens. No skin malignancy was detected in our study despite majority of the study population are in the fishing occupation for more than 20 years without following any sun protective measures. This may be due to dark complexion of all the fishermen we studied. The prevention of skin diseases among

fishermen requires a comprehensive approach by a team of dermatologist, occupational physician and community medicine expert. Creation of awareness especially regarding sun protective measures and protective wares among fishermen is very important and this can be achieved by regular health education and sensitization campaigns.

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