



Research paper

Alarming high level of alcohol use among fishermen: A community based survey from a coastal area of south India



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ABSTRACT

Introduction: Though studies from western world have reported high prevalence of alcohol use among fishermen, there is lack of information from developing world. Hence this study was carried out among fishermen in a coastal area of southern India to 1) determine the prevalence of alcohol use among fishermen 2) describe the pattern of alcohol use 3) identify factors associated with alcohol use.

Methods: A community based cross-sectional study was carried out among fishermen in a coastal village of Puducherry, India. House to house survey was conducted, fishermen aged above 18 years and involved in catching fish at least once in last three months, were included. Data on age, marital status, education, monthly income, duration in fishing occupation, owning a boat or wayer, frequency of fishing per month/week, number of hours spent in sea, alcohol use in past one year, age at initiation, type of alcohol drink and presence of alcohol users in family.

Results: In total, 304 participants were interviewed. Mean (SD) age of the participants was 41 (11) and 82% were involved in fishing for more than 10 years. Of 304 participants, 241 (79%) reported alcohol use in past one year. Of 241 participants who used alcohol, 89% reported alcohol consumption during fishing activity. In multivariate analysis, alcohol use in other family members was independently associated with alcohol use (aRR 21.4; 95% CI 6.8–67.4).

Conclusion: Very high prevalence of alcohol use is seen among fishermen. Of those who consume alcohol, nine out of ten use during fishing activities.

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1. Introduction

Globally, “alcohol-abuse” is a major cause of mortality and morbidity with an estimated 3.3 million deaths attributed to harmful use of alcohol in 2012. Alcohol is a casual factor for more than 200 diseases and injuries.¹ Alcohol consumption not only affects the health of the individual, but also has an impact on social, economic and mental aspects of family and community as a whole.² As per World Health Organization (WHO) estimates, there are about 2 billion consumers of different alcoholic beverages and 76.3 million people were diagnosed with the alcohol use disorder worldwide.³

Several studies have reported high prevalence of alcohol use in selected occupational groups like miners, fishermen, those who

work in pubs and bar, military men and journalists.⁴ Facing harsh weather, cold sea water, delineating national boundaries in water, psychological stress, safety, fatigue and long working hours and constant movement of the boat makes every launch into sea, as a survival question of life for the fishermen.⁵ These kinds of situations make fishermen vulnerable for many substance abuse including tobacco, alcohol, and drugs. A recent systematic review on substance abuse among fishermen included only four available studies and reported alcohol use among fishermen to be as high as 79%.⁶ The study conducted among fishermen reports that they are more prone to occupational hazards such as stress, sunburn, auditory complaints, accidents and injuries compare to non-fishermen counterparts.⁷ ‘Comparative Analysis of Regulatory Regimes’ reports that, fatality rate among fishermen due to fishing occupation is not consistent among the countries. It varies from 36 to 167 per 1,00,000 fishermen.⁸

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With a long coastal region and substantial number of fishermen in India, there is a need for assessing the alcohol use and its associated factors among fishermen. Information related to burden and pattern of alcohol consumption among fishermen community needs to be captured in order to implement context specific interventions to reduce alcohol abuse. However, till date, there is only one published study from India on alcohol use among fishermen.⁹ Hence this study was carried out among fishermen in a coastal area of southern India to 1) determine the prevalence of alcohol use among fishermen 2) describe the pattern of alcohol use 3) identify factors associated with alcohol use.

2. Materials and methods

A community based cross-sectional analytical study was carried out among fishermen in a big coastal village of Puducherry, India. The village, Veerampattinam, is located on the east coast of southern India, 7 km from Puducherry town. Estimated population of the village is approximately 6000 with a literacy rate of 78%. Most of them depend on fishing and allied activities for livelihood. Only men go for fishing into the sea and women are engaged in segregating and selling fish. The village was one of the worst hit areas during Tsunami in 2004 with hundreds of fishermen losing their home and other properties. After Tsunami, about 400 families were relocated to 'fishermen colony', a part of the village developed with government aid.

All fishermen above 18 years of age residing in fishermen colony and went out to sea for catching fish at least once in last three months, were included in the study. Considering prevalence of alcohol use in general population as 43%, relative precision of 20%, design effect of 2 and alpha error of 5%, the minimum sample size required was 264. However, we enumerated all the households and all the eligible individuals were included. If houses were locked or individual eligible for study was not present during investigators initial visit, two revisits were made. Interviews were conducted after obtaining written consent from the participant. The study was conducted during the month of February, 2015.

Data variables included were age, marital status, education, monthly income, duration in fishing occupation, owning a boat or wayer, frequency of fishing per month/week, number of hours spent in sea, alcohol use in past one year, age at initiation of alcohol intake, type and quantity of alcohol drink and other alcohol users in family. We used a semi-structured interview schedule to collect the above information from participants.

Data were single entered and analyzed using EpiData software (version 3.1 for data entry and version 2.2.2.182 for analysis, Epi-Data association, Odense, Denmark).¹⁰ Alcohol use in past one year was summarized as percentage with 95% confidence intervals. To assess possible association of socio-demographic and occupational characteristics with alcohol use, we calculated prevalence ratios. Multivariate regression analysis was done for factors which had *P* value < 0.10 in bivariate analysis. A *P* value of less than 0.05 was considered as significant.

3. Results

There were 330 fishermen eligible for the study. Of them, 304 (92%) fishermen completed the interviews. Mean age (SD) was 41 (11) years, about half of them were above 40 years of age. Socio-demographic and occupation related characteristics are shown in Table 1. Majority (82%) were involved in fishing for more than 10 years. Of 304 participants, 77% did not own a fishing boat and worked as wagers. Nearly four fifths of the participants reported that ever use of alcohol by at least one of the family members.

Table 1

Socio-demographic and occupational characteristics of fishermen, Puducherry, south India, 2015 (N = 304).

| Characteristics | Frequency (%) |
|---|---------------|
| Age (years) | |
| 19–39 | 148 (48.7) |
| 40–59 | 136 (44.7) |
| ≥60 | 20 (6.6) |
| Educational status | |
| Illiterate | 54(17.8) |
| Primary and middle school | 129(42.4) |
| High school and above | 121(39.8) |
| Marital status | |
| Married | 290(95.4) |
| Unmarried | 14 (4.6) |
| Monthly income (Rupees) | |
| <1999 | 83 (27.3) |
| 2000–2999 | 114(37.5) |
| >3000 | 107(35.2) |
| Duration of occupation (years) | |
| 0–10 | 56 (18.4) |
| 11–20 | 119 (39.2) |
| 21 and above | 129 (42.4) |
| Time spent in sea per ride (hours) | |
| 0–5 | 62 (20.4) |
| 6–24 | 192 (63.2) |
| 25 and above | 50 (16.4) |
| Frequency of going to sea | |
| Daily | 241 (79.3) |
| Occasionally | 63 (20.6) |
| Type of launch | |
| Big | 55 (18.1) |
| Small | 249 (81.9) |
| Boat ownership | |
| Own | 56 (18.4) |
| Wage | 248 (81.6) |

Of 304 participants, 241 (79%) reported alcohol use in past one year. Median (IQR) age at initiation of drinking was 21 (20–25) years and 39% were consuming for duration of more than 20 years. The pattern of alcohol use is described in Table 2. Of 241 fishermen

Table 2

Pattern of alcohol use among fishermen, Puducherry, south India, 2015 (N = 241).

| Pattern of use | Number (%) |
|---|------------|
| Age at initiation | |
| 0–18 | 42 (17.4) |
| 19–25 | 144 (59.8) |
| 26–30 | 43 (17.8) |
| >30 | 12 (5.0) |
| Frequency of alcohol use | |
| Less than four times a month | 65 (27.0) |
| Four or more times a month | 152 (63.1) |
| Four or more times a week | 24 (9.9) |
| Amount spent on alcohol per month in INR | |
| ≤1000 | 136 (56.4) |
| >1000 | 105 (43.6) |
| Years of alcohol use | |
| 0–5 | 29 (12.0) |
| 6–10 | 38 (15.8) |
| 11–20 | 80 (33.2) |
| 21–30 | 56 (23.2) |
| >31 | 38 (15.8) |
| Drinking during fishing | |
| Yes | 215 (89.2) |
| No | 26 (10.8) |
| Six drinks per day | |
| Never | 66 (27.4) |
| At least once in a year | 86 (35.7) |
| At least once in a month | 86 (35.7) |
| Daily | 3 (1.2) |

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