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PREVALENCE OF FEMALE ALCOHOL DEPENDENCE SYNDROME IN FISHERMAN COMMUNITY, NALLAVADU, PONDICHERRY

Psychiatry

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ABSTRACT

Introduction: Alcohol abuse was believed to be a male phenomenon and has been traditionally considered as a disease of men. But recently substance abuse in women is of great concern. Research studies on substance abuse among women in developing countries like India are sparse compared to western countries. Hence this study is undertaken in a specific population among the less studied gender.

Aim: Estimating the prevalence of female alcohol dependence syndrome in Nallavadu along with assessment of socio demographic profile of females in the community.

Methodology: The study was conducted in the second largest fisherman community in Pondicherry, Nallavadu from January 2017 to May 2017. It was a cross sectional study. The sample size was calculated using formulas and the sample size taken was 186. The sampling method followed was stratified sampling. The subjects were interviewed individually using the Performa which contained socio demographic details and questions related to alcohol consumption in subjects and their family. Those who responded positively for alcohol consumption were subjected to AUDIT questionnaire and ICD 10.

Results: The prevalence of alcohol dependence among females in fisherman community, Nallavadu, Pondicherry is 1.6%. There was an alarming rate of widow in the community which was about 12.9%. About 53% of subjects' husband consumed/ consumes alcohol (including widow/separated females) either daily/ occasionally/ weekly. Among them, 43% consumed/consumes alcohol on a daily basis. 73.1% of the females had first degree relatives with alcohol consumption. Daily alcohol consumption in father is about 64.5%. About 6.9% of the females had suicidal deaths in their family under the influence of alcohol. Among those who consume alcohol, the source of introduction was husband (family members) in all 4 members with most common reason for first alcohol use being relief of fatigue followed by psychological stress.

Conclusions: There is a need to have specific population study to assess the problem of substance abuse so that control and treatment measures can be tailored. Similarly there is a need for gender specific researches in substance abuse unlike the past as the problem of female substance abuse is on the rise.

KEYWORDS

alcohol dependence, prevalence, females

INTRODUCTION:

As per Article 47, Directive Principle of State Policy, Constitution of India "The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavor to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health." But in reality there is liberalization in production, distribution and consumption of alcohol in most states[1]. Alcohol abuse was believed to be a male phenomenon and has been traditionally considered as a disease of men. Women were believed to have immunity in terms of social inoculation. But recently substance abuse in women is of great concern[2,3]. The stigma associated with substance use in women buries the problem and by the time they seek treatment, the physical, psychological and social problems would have worsoned[4].

Research studies on substance abuse among women in developing countries like India are sparse compared to western countries[3]. The only National epidemiological survey conducted in India on drug abuse in 2001 included only male subjects and excluded females completely. The Rapid Assessment Survey, which was the component of same survey used non random sampling in 14 cities of India and reported that around 7.9% of women used atleast one type of substance. Heroin, alcohol, cannabis and pain killers were the predominant substances abused by women[5,6]. The GENACIS (Gender, Alcohol, and Culture: An International Study) chose the state of Karnataka in India and found that 5.8% of all females reported drinking alcohol atleast once in last 12 months[7]. As a part of National Family Health Survey- 3, 2005-2006, study conducted on health and living condition in 8 Indian cities, it was found that alcohol consumption among women in these cities were negligible (<1% in all cities except Hyderabad, 3%)[8]. Traditional surveys were unable to provide insight into the problem of substance abuse in women because patterns of substance abuse vary across India. The traditional surveys have identified less number of women with substance abuse than in reality which reflects the unsuitability of the current epidemiological survey. This is one reason for the recent researches to shift from traditional surveys to specific groups[2]. There are various studies done in specific groups which has shown prevalence of alcohol abuse in women ranging from 0% to 60%[9-18]. Hence this study is undertaken in specific population among the less studied gender to estimate the prevalence of female alcohol dependence syndrome along with assessing the socio demographic profile of females of the community.

METHODOLOGY:

The study was conducted in the second largest fisherman community in Pondicherry, Nallavadu from January 2017 to May 2017. It was a cross sectional study. The study sample for prevalence was calculated using the formula, $n = Z^2 P (1-P) / d^2$ where P is the prevalence, Z is 1.96 (conventional for a confidence of 95%), d is the precision. Prevalence (P), in proportion of 1, is kept as 0.06 (as per GENACIS study[7]), d is kept as 0.03 (half of P as the prevalence is less than 10%). Hence $n = 1.96 \times 1.96 \times 0.06 (1-0.06) / 0.03^2 = 240$. This sample size is > 5% of the population studied (As per the marine fisheries census 2010, the total number of adult female population in Nallavadu, Pondicherry is 735[19]). Hence sample size can further be refined applying the formula for finite population which is $n' = NZ^2 P (1-P) / d^2 (N-1) + Z^2 P (1-P)$ where n' = sample size with finite population correction, N = population size, Z = Z statistic for a level of confidence, P = expected proportion (in proportion of 1) and d= precision (in proportion of one)[20]. n' = 180.96. The sample size taken for the study was 186. The study was conducted after obtaining Institutional Ethical Committee clearance.

Subjects included for the study were 1. Females aged ≥ 18yrs and ≤ 65yrs 2. Subjects whose husband/father/guardian/themselves are involved in part time or full time fishing or fish sales or any other occupation in fisheries industry 3. Those who consent for the study.Those who did not consent or fulfill the inclusion criteria were excluded from the study. The sampling method followed was stratified sampling. There were 14 streets in Nallavadu, Pondicherry. All the streets of Nallavadu were visited and females available in their home were gathered together with the help of social worker available in the community. They were interviewed individually and those who satisfied the inclusion criteria alone were gathered. Those who did not satisfy the inclusion criteria, who were not interested, who did not consent and the locked houses were excluded and were not revisited. Simple random sampling was done in each group of each street.

Interviews were made with Performa which had the following details: Socio demographic details including age, marital status, religion, education, occupation, occupation of guardian (husband/ father /others), and total monthly income followed by questions: 1. Does your spouse consumes alcohol? How frequent? 2. Any Family history of alcohol dependence in first degree relatives? How frequent? 3. Any family history of suicides under the influence of alcohol? 4. Any other substance use (other than alcohol)? If so name them 5. Do you consume alcohol? Those who responded positively for this question alone were subjected to further questioning: 6. Source of introduction to alcohol[21] 7. Reasons for first use of alcohol[21] 8. Any consumption of alcohol during pregnancy? 8. AUDIT questionnaire (interview version): It consists of 10 questions each with a score from 0 to 4. It is a valid and reliable tool developed by WHO for screening and assessment of persons with alcohol consumption. Scores of 8 to 15 indicates medium alcohol problems and scores > 16 indicates high level of alcohol problem[22]. All questions were translated in Tamil language and the answers were entered in English. AUDIT questionnaire was translated in English and back translated in Tamil and necessary corrections were made to ensure reliability and validity. Those who scored above 8 were further assessed for alcohol dependence syndrome using ICD 10 criteria. The data was entered in Microsoft Excel 2013 and descriptive statistical analysis was done.

RESULTS:

The mean age of study population was 37.6 ± 11.6yrs. 81.7% were married, 12.9% widow, 2.1% separated from husband and 3.2% were unmarried (figure 1). 68% of the females were unemployed and among those occupied, 21% were involved in fish sales. Other occupations were running petty shops, dosa batter sales, running tuition, teacher, dobby, gardening, farmer, tailor, social worker, community professional, ANM (figure 2).

Figure 1: MARITAL STATUS OF SUBJECTS

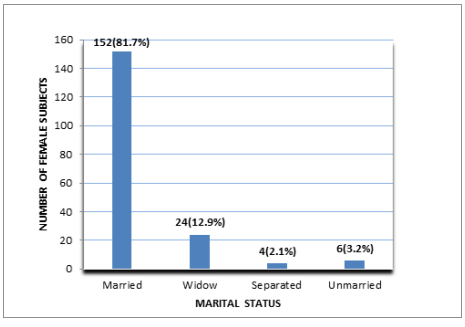
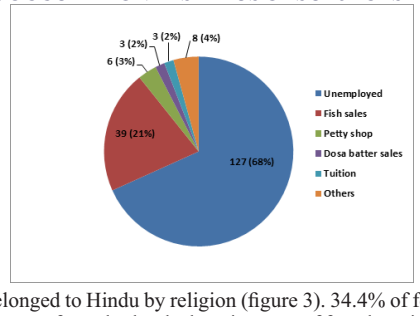


Figure 2: OCCUPATIONAL STATUS OF SUBJECTS



95.7% belonged to Hindu by religion (figure 3). 34.4% of females did not receive any formal school education, rate of females with 1st std to 5th std education is 19.3%, 6th to 10th std is 32.2%, 11th to 12th is 8.1%, >12th is 5.9% (figure 4).

Figure 3: RELIGIOUS STATUS OF SUBJECTS

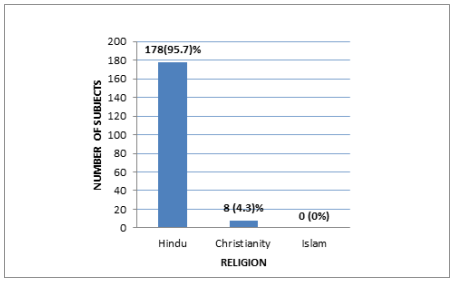
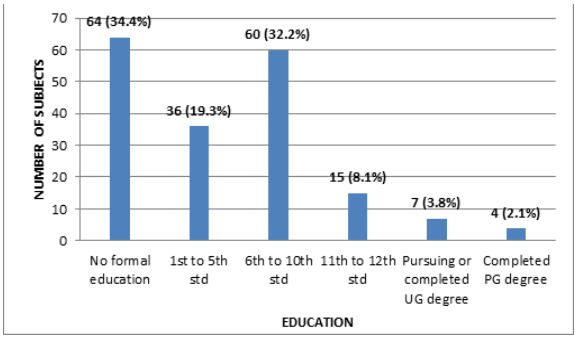


Figure 4: EDUCATIONAL STATUS OF SUBJECTS



91% of the subjects' father/husband/guardian are fisherman by occupation. The other occupations noted among them were driver, electrician, farmer, painter, coolie, running petty shop, parlor, fish processing, tree climbing (tender coconut, toddy) (figure 5). Total monthly income of subjects' family is Rs.1000 to Rs.2000 in 15% of females, Rs.3000 to Rs.6000 in 59.7%, Rs.7000 to Rs.10000 in 17.2%, > Rs. 10000 in 8.1% of females (figure 6).

Figure 5: OCCUPATION OF SUBJECTS' HUSBAND/ FATHER/ GUARDIAN

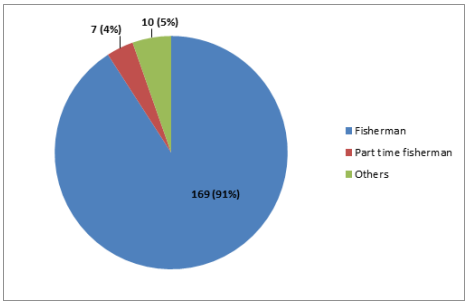
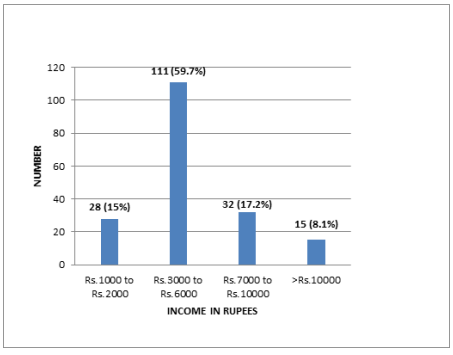
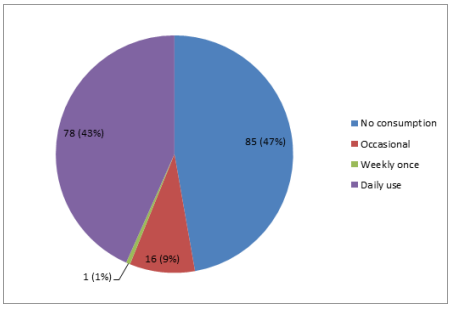


Figure 6: TOTAL MONTHLY INCOME OF SUBJECTS' FAMILY



Among the married females, 47% of the females' husband had no history of alcohol consumption, 53% consumed/consumes (including the widow and separated) alcohol daily/ weekly/ occasionally (with 43% having daily alcohol consumption) (figure 7).

Figure 7: ALCOHOL CONSUMPTION IN HUSBAND



26.9% of the females did not have any first degree relatives with alcohol consumption. 73.1% of the females had first degree relatives with alcohol consumption. Daily alcohol consumption in father is seen

in about 64.5% of females. 1.6% of females reported daily consumption of alcohol in mother. 26.3% of females have more than one first degree relative with daily alcohol consumption. About 6.9% (totally 13, males-12, females-1) of the females had suicidal deaths in their family under the influence of alcohol (table 1). The other substances abused among subjects were areca nut chewing, betel nut chewing with/ without tobacco, tobacco powder which is about 7.5% (table 2).

TABLE 1: Description of questions related to alcohol consumption in family members

Sl. No.	Questions related to alcohol consumption in family members	Number (%)
1.	No. of females with no history of alcohol consumption in first degree relatives	50 (26.9%)
2.	No. of females with history of alcohol consumption in first degree relatives	136 (73.1%)
	Occasional use in father/brother/son	5 (2.7%)
	Daily use in father	120 (64.5%)
	No. of females having more than one member in first degree relatives with daily alcohol consumption	49 (26.3%)
	No. of females having more than three member in first degree relatives with daily alcohol consumption	9 (4.8%)
	No. of females with daily consumption of alcohol in mother	3 (1.6%)
3.	No. of subjects with history of suicides under alcohol intoxication in family members	13 (6.9%)

TABLE 2: Substance use other than alcohol in subjects

Sl. No.	Type	Number (%)
1.	Areca nut	3 (1.6%)
2.	Betel nut chewing	3 (1.6%)
3.	Betel nut chewing with tobacco powder	6 (3.2%)
4.	Tobacco powder	2 (1.1%)
	Total	14 (7.5%)

2.1% of females had history of alcohol consumption whose mean age is 46 ± 3.74 yrs. Among these 4, 3 (75%) were married, 1 (25%) was a widow; 2 (50%) had no formal education, 2 (50%) had primary school education; 2 (50%) were unemployed, 2 (50%) were fish seller; 3 (75%) with total monthly income of the family as Rs.3000 to Rs.6000; all 4 (100%) had history of daily alcohol consumption in husband as well as father; source of introduction to alcohol in all 4 females (100%) is husband; reasons for first use of alcohol being to relieve fatigue in 3 (75%) and to relieve psychological distress in 1 (25%); 2 (50%) females used arrack and 2 (50%) females used brandy; no history of alcohol consumption in all 4 (100%) during pregnancy; other substances were used by 2 females (50%); 3 (75%) scored > 8 in AUDIT and were subjected to ICD 10 criteria and were found dependent (table 3).

TABLE 3: Alcohol consumption in females (subjects)

Sl. No.	Variables	Number (%)
1.	No. of females with history of alcohol consumption	4 (2.1%)
2.	Mean age ± SD	46 ± 3.74 yrs
3.	Marital status	
	Married	3 (75%)
	Widow	1 (25%)
4.	Education	
	No formal education	2 (50%)
	1st to 5th	2 (50%)
5.	Occupation	
	Unemployed	2 (50%)
	Fish seller	2 (50%)
6.	Total monthly income	
	Rs.1000 to Rs.2000	1 (25%)
	Rs.3000 to Rs.6000	3 (75%)
7.	History of daily alcohol consumption in husband	4 (100%)
	Rs.3000 to Rs.6000	3 (75%)
7.	History of daily alcohol consumption in husband	4 (100%)
8.	History of daily alcohol consumption in father	4 (100%)
9.	Source of introduction to alcohol:	
	Family members (Husband)	4 (100%)
10.	Reasons for first use of alcohol	
	To relieve Fatigue	3 (75%)
	Psychological stress	1 (25%)
11.	Type of alcohol used	
	Arrack	2 (50%)
	Brandy	2 (50%)
12.	Consumption of alcohol during pregnancy	
	Yes	0 (0%)
	No	4 (100%)
13.	Other substance use	
	Betel nut chewing	1 (25%)
	Betel nut chewing with tobacco powder	1 (25%)
	Nil	2 (50%)
14.	AUDIT score	
	>8	3 (75%)
	<8	1 (25%)
15.	No. of females satisfying ICD 10 diagnostic criteria	3 (75%)

DISCUSSION:

This study was done to focus on female alcohol dependence which is neglected in most research studies on substance abuse. We studied specifically the fisherman community. Previously a study was conducted by Eshwaran et al in the coastal area of Pondicherry in Kalapet with the main occupation of the region being fishing. But only males were included in this study too[23]. The mean age of study population was 37.6 ± 11.6 yrs which is the middle age group. Most of the subjects were married (81.7%). But there was an alarming rate of widow in the community which was about 12.9% (figure 1). The total rate of females who are either a widow or separated from husband was about 15%. As per census 2011, the proportion of widowed among females in India was 7.4%[18]. This shows that the rate of widowed females in our community is quite high. The role of alcohol in this regard and reasons for high deaths among males need to be explored.

More than half of the females were not occupied (68.3%) (figure 2) which indicates that they are dependent on the male gender for financial support. About half of the subjects 53.7% either had no formal education (34.4%) or had only primary school education (19.3%) (1st to 5th). This shows the poor educational background among females of fisherman's community (figure 4). About 53% of subjects' husband had/has history of alcohol consumption. Among them, 43% consumed/consumes alcohol on a daily basis. This indirectly gives an idea about the extent of prevailing alcohol abuse among males in this community (figure 7). 73.1% of the females had first degree relatives with alcohol consumption. Daily alcohol consumption in father is seen in about 64.5% of females. 1.6% of females reported daily consumption of alcohol in mother (table 1). The increased rate of alcohol consumption in first degree relatives, poor educational background and higher rate of financial dependency together could be reasons for the acceptance of male alcohol consumption by the females in their husband or family members. About 6.9% of the females had suicidal deaths in their family under the influence of alcohol (table 1). This aspect was taken into study to know the extent of social problem created by alcohol because the risk of suicide increases by 90 times under alcohol intoxication, according to Huffard[24]. Prevalence of females with alcohol consumption is 2.1% (4 females) (table 3) but the prevalence of alcohol dependence syndrome among females of fisherman community is 1.6% (3 females).

CONCLUSIONS:

The prevalence of alcohol dependence among females in fisherman community, Nallavadu, Pondicherry is 1.6%. As the pattern of substance abuse varies across India depending upon the availability, accessibility, educational and economic status, there is a need to have specific population study to assess the problem of substance abuse so

that control and treatment measures can be tailored accordingly. Similarly there is a need for gender specific researches in substance abuse unlike the past, as the problem of female substance abuse is on the rise. Face to face interviewing was done in this study hence there could have been under reporting which is one limitation of this study.

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