

## **Prevalance of Hypertension among Fishermen Population in Tamilnadu**

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**Abstract:** Hypertension is one of the major public health issues in worldwide. The objective of this study was to find out the prevalence of hypertension and its associated risk factors in fishermen population of Tamil Nadu, India. The descriptive cross-sectional study conducted among 113 adult Male from the Fishermen population of Parangipettai of Cuddalore district, Tamil Nadu. Out of the study sample size of 113 fishermen 41.6% were in the age group of 30-40 years, 25.7% were in the age group of 41-50 years, 32.7% were in the age group of 51-65 years. The prevalence of hypertension was 32.74% among fishermen population. The mean year of smoking is 20.84. The mean pack year is 16.96. In our present study, the risk factors included age, level of education, family history, type of boat and frequency of fruit intake have significant association ( $p < 0.05$ ) with hypertension. The prevalence of hypertension was higher among fishermen than the general population. This shows there is lack of awareness of the disease among fishermen regarding lifestyle. The life style modification may be stressed.

**Keywords:** Fishermen, Hypertension, Prevalence, Risk factors.

### **INTRODUCTION**

Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, 15 million people die from an NCD between the ages of 30 and 69 years; over 85% of these deaths occur in low- and middle-income countries[1]. In India NCDs contributes to around 5.87 million deaths that account for 60 % of all deaths. India shares more than two-third of the total deaths due to NCDs in the South-East Asia Region (SEAR) of WHO[2].

One in three adults has high blood pressure in WHO's South-East Asia Region. Nearly 1.5 million people die due to high blood pressure every year making it a leading risk factor for mortality in the Region[3]. Every fourth individual in India aged above 18 years has raised blood pressure (hypertension) and the prevalence has increased by 10% from 2010 to 2014[2].

High blood pressure increases the risk of heart attacks, strokes and kidney failure[3]. The theme for World Health Day 2013 is High blood pressure[3]. Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from a NCD[1].

Ministry of Health & Family Welfare and Indian Council of Medical Research launched India

Hypertension Management Initiative (IHMI) on 28 November 2017, in New Delhi[4].

Further, fishermen community possesses unique characteristics of a folk society, since major portion of the life of fishermen is spent at sea with bizarre sleep and eating pattern, their risk profile for NCDs are different from general population [5]. Since limited studies were done among fishermen community, this study was planned to explore the risk factor profile for Hypertension among fishermen community in Cuddalore district, Tamil Nadu.

### **AIM AND OBJECTIVES**

- To find out the prevalence of hypertension among fishermen in rural area
- To find out the existing risk factors for hypertension

**METHODS**

This is a descriptive cross-sectional study conducted among 113 adult Male from the Fishermen community of Parangipettai of Cuddalore district, Tamil Nadu. Study conducted during February 2017 to March 2018 using a semi-structured questionnaire and all the participants were motivated to undergo blood pressure measurement. The sample size was calculated on the basis of prevalence of hypertension among fishermen community (39.05%), Kanchipuram, as reported by Kalaivani Annadurai *et al.* [5]. Keeping this as prior information, using N-Master sample size software, the sample size has been determined. The procedure adopted was absolute precision with finite population correction. With the expected proportion as 0.39, level of precision as 5%, the level of confidence as 95% and 143 fishermen who ventures into the sea from that area, the required sample size was calculated as 103. However, sample of 113 has been selected for this study to avoid non responsiveness. Convenient sampling method was adopted in this study. The study participants were selected by house to house visit. Male fisherman above 30 years of age available at the time of visit were included in the study until the required sample size is reached.

Informed consent was obtained from all participants. A semi-structured questionnaire has been prepared in local language-Tamil based on WHO STEPS Schedule and integrated disease surveillance project (IDSP) NCD risk factor surveillance survey. The Blood pressure was recorded with sphygmomanometer and those who have above 140 systolic and 90 diastolic were considered hypertensive. The data entry and statistical analysis were performed using SPSS 23. Descriptive data was expressed as frequencies and percentages. Chi-square test was used to find out the significance of associations. P value of less than 0.05 was considered significant. Institutional Ethics Committee approval was obtained.

**RESULTS**

The prevalence of hypertension in the study population was 32.74%. The mean age of the participants was 43.3 years. 96% of the men were married. 47.8% not completed primary education and 89% of the participants not completed high school. (Table-1) all participants belong to low socioeconomic group.

**Table-1: Socio-demographic profile of the study population (N=113)**

Variable		Frequency (%)
Total		113 (100)
Age	30-40years	47 (41.6)
	41-50 years	29 (25.7)
	51-65 years	37 (32.7)
Marital status	Unmarried	4 (3.5)
	Married	109 (96.5)
Education	No schooling	7(6.2)
	Less than primary education	47 (41.6)
	Primary education completed	47 (41.6)
	High school completed	10 (8.8)
	Higher secondary completed	2 (1.8)
INCOME	<5999	26 (23)
	6000-10000	69 (61.1)
	>10000	18 (15.9)

Table no 2 shows 72.6% of the study population is having habit of smoking, of which 51% smokes beedi and 49% smokes cigarette. 23% having habit of chewing tobacco (smokeless tobacco). 77% of the fishermen in study population consume alcohol and most them (93%) reported brandy as the regular form of alcohol (Table.2). The average amount of alcohol consumed in each time, most of them (63.2%) replied as one quarter (180 ml), 17.3 % of people reported as more than 180ml in each time.

All the participants are having mixed dietary habit, no vegetarians. Most of them take nonvegetarian foods 3 or more days in a week, showing more frequency non-veg conception than others. 80.6 % of the study population consume fruits 2 days or less than

2 days in a week. Only 27.4 % of people take fresh vegetables along with their diet. Salted fish or dry fish consumption was 94% (<3days in a week) among study participants.

Most of the fishermen doing vigorous physical activity during fishing as most of them using hand net for fishing (95.6%). The average working time was 11hours, which increases in deep sea fishermen, 78.8% of fishermen work more than 10hour on every episode of fishing. 15.9% of the fishermen were found to be obese from their BMI.

During examination 7% fishermen reported that they are under treatment for hypertension. 25.6%

fishermen found to have high blood pressure during the survey (Table 3).

**Table-2: Risk factors of non-communicable disease (n=113)**

Variable	Key risk factors		Frequency
Behavioural risk factors	Smoking	Yes	82 (72.6)
		No	31 (27.4)
	Type of tobacco	Cigarette	40 (49)
		Beedi	42 (51)
	Smokeless tobacco	Yes	23 (20.4)
		No	90 (79.6)
	Alcohol	Yes	87 (77)
		No	26 (23)
	Type of alcohol	Brandy	81 (93)
		Others	06 (7)
	Quantity of Alcohol	<180 ml	17 (19.5)
180 ml		55 (63.2)	
>180 ml		15 (17.3)	
Dietary risk	Non-veg foods	<3 days/week	10 (8.8)
		3-4 days/week	61 (54)
		>4 days/week	42 (37.2)
	Fruits intake	<2 days/week	48 (42.5)
		2 days/week	43 (38.1)
		>2 days/week	22 (20.5)
	Vegetables	<3 days/week	43 (38.1)
		3 days/week	39 (34.5)
		>3 days/week	31 (27.4)
	Salted fish	<3 days/week	94 (83)
		3 days/week	15 (13.5)
>3 days/week		04 (3.5)	
Work risk	Type of work	Sedentary	5 (4.4)
		Vigorous	108 (95.6)
	Working hours	Up to 10 hours	24 (21.2)
		More than 10 hours	89 (78.8)
Physical risk	BMI	<18	16 (14.2)
		18-25	79 (69.9)
		>25	18 (15.9)

**Table-3: Blood pressure of fishermen**

BLOOD PRESSURE	SYSTOLE		
		90-120	53 (46.9)
		121-139	19 (16.8)
		140-160	41 (36.3)
	DIASTOLE	60-80	25 (22.1)
		81-90	55 (48.6)
		91-100	23 (20.4)
	HYPERTENTION	Normal	76 (67.3)
		Known hypertensive	8 (7.1)
		Newly diagnosed	29 (25.6)

Table no 4 shows the association of risk factors for hypertension. Increasing age is found to have association with hypertension, 31% of normal weight person and 35.7 % of abnormal BMI persons have hypertension, but it is not statistically significant. 44.7% of Fishermen who did not complete primary education have hypertension which is higher than 34% of fishermen who completed primary education and no

hypertension found in fishermen who completed higher education, which is statistically also significant.

Among the presence of family history of hypertension 44.7% have hypertension and only 26.7% of fishermen with negative family history have hypertension, with P-value of 0.05 which is significant. Type of boat users, fruit and salted fish intake has also statistically significant association with hypertension.

**Table-4: Association of hypertension with demographic and other parameters**

		N	Non hypertensive	hypertensive	Chi-square value	P-value
Age	30-40 years	47	36(76.6)	11(23.4)	23.728	.000
	41-50 years	29	9(31)	20(69)		
	51-65 years	37	31(83.8)	6(16.2)		
BMI	Normal	85	58(68.2)	27(31.8)	.149	.699
	Abnormal	28	18(64.3)	10(35.7)		
education	Illiterate	7	7(100)	0(0)	12.327	.006
	Primary	47	26(55.3)	21(44.7)		
	Secondary	47	31(66)	16(34)		
	graduate	12	12(100)	0(0)		
Family history of hypertension	No family history	75	55(73.3)	20(26.7)	3.740	.053
	Family h/o HT	38	38(55.3)	17(44.7)		
Work hours	Less than 10 hours	24	19(79.2)	5(20.8)	1.963	.161
	More than 10 hours	89	57(64)	32(36)		
Type of boat	Motor boat	93	56(60.2)	37(39.8)	11.831	.001
	Hand boat	20	20(100)	0(0)		
Pack years	Zero pack years	31	21(67.7)	10(32.3)	2.718	.257
	10 packyears	41	24(58.5)	17(41.5)		
	>10 packyears	41	31(75.6)	10(24.4)		
Fruits intake	Less than 3 days	91	56(61.5)	35(38.5)	6.940	.008
	More than 3 days	22	20(90.9)	2(9.1)		
Vegetable intake	3 or Less than 3 days	82	51(62.2)	31(37.8)	3.477	.062
	More than 3 days	31	25(80.6)	6(19.4)		
Salted fish	Nil	22	18(81.8)	4(18.2)	7.201	.027
	1 Or 2 days	72	42(58.3)	30(41.7)		
	More than 2 days	19	16(84.2)	3(15.8)		

## DISCUSSION

In this present study the Mean age of the fishermen was 43.3 years, which is lower when compared to 52.3 years study done by Shankarappa M Mudgal *et al.* [6]. The present study has identified 32.74% was prevalence of hypertension among fishermen population which is very close to 39.05% a study conducted by Kalaivani Annadurai *et al.*[5] The National Health Profile 2018 has concluded that only 10.22% in the regular NCD clinics have been diagnosed to have hypertension whereas that among fishermen population is 32.74% as per our study. This clearly indicates that fishermen are in the high risk side and that targeted approach towards them will have significant control. Age group is significantly associated with systolic and diastolic hypertension which also observed by Kalaivani Annadurai *et al.*[5].

Smoking prevalence was 72.6% in current study which is close to 73.5% a study done by Bhondve A *et al.* among Fishermen in Southern east coastal area of Mumbai [7] and it is nearly twice the prevalence of a cross sectional study done by Gopal Muthu Krishnan *et al* in fishermen community (34.4%)[8].

In this present study 77% were alcoholic among fishermen which is little higher than 61.4% a study conducted by Kalaivani Annadurai *et al* among Fishermen community of Kancheepuram district, Tamil Nadu[5]. In contrast to our study, prevalence obtained

from DLHS 19.3% and NFHS-4 findings 46% are significantly lower.

Among the hypertension, 45.9% have family history of hypertension which show the association between family history and hypertension which is almost the same as the study by Chythra R. Rao *et al.* where they concluded 45.1% have family history of hypertension [9]. Smoking and alcohol is not having statistically significant association with hypertension in the present study.

## CONCLUSION

The prevalence of hypertension was higher among fishermen than the general population. This shows there is lack of awareness of the disease among fishermen regarding lifestyle. The life style modification may be stressed. Most of the hypertension was identified only during survey shows need of regular screening among fishermen population

## REFERENCES

1. WorldHealthOrganisation. Fact sheet [Internet]. Available from: <http://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
2. World Health Organization [Country Office for India]. Burden of NCDs and their risk factors in India. (Excerpted from Glob Status Rep NCDs - 2014 [Internet]. 2014;9–10. Available from: <http://www.searo.who.int/india/topics/noncommuni>

- cable\_diseases/ncd\_situation\_global\_report\_ncds\_2014.pdf%0Ahttp://www.searo.who.int/india/topics/noncommunicable\_diseases/ncd\_situation\_global\_report\_ncds\_2014.pdf%0Ahttp://www.searo.who.int/india/topics/non
3. World Health Organisation. Hypertension [Internet]. Available from: [http://www.searo.who.int/entity/world\\_health\\_day/HBP\\_WHD\\_2013/en/](http://www.searo.who.int/entity/world_health_day/HBP_WHD_2013/en/)
  4. WHO. IHMI [Internet]. Available from: [http://www.searo.who.int/india/topics/noncommunicable\\_diseases/hypertension/en/](http://www.searo.who.int/india/topics/noncommunicable_diseases/hypertension/en/)
  5. Annadurai K, Balan N, Ranaganathan K. Non-communicable disease risk factor profile among Fishermen community of Kancheepuram district , Tamil Nadu: a cross sectional study. *Int J of community medicine and Public health*. 2018;5(2):708–13.
  6. Mudgal S, Kosgi S, Hegde V, Sharma R RS. Prevalence of Hypertension Among Fisherman Community in The Island of Bengre, Mangalore. *Intl J Heal Sci Res*. 2012;1(2):1–15.
  7. Bhondve A, Mahajan H, Sharma B, Kasbe A. Assessment of addictions among fishermen in southern-east costal area of Mumbai, India. *IOSR J Dental Med Sci*. 2013;6(6):71-9.
  8. Muthukrishnan G, Uma SB, Anantharaman VV. A cross sectional study of hypertension and their risk factors in fishermen of Chennai district. *International Journal of Community Medicine And Public Health*. 2018 May 22;5(6):2464-70.
  9. Rao CR, Kamath VG, Shetty A, Kamath A. High blood pressure prevalence and significant correlates: a quantitative analysis from coastal karnataka, India. *ISRN preventive medicine*. 2012 Dec 3;2013.