International Journal of Research in Medical Sciences
Sundar JS et al. Int J Res Med Sci. 2024 Aug;12(8):2949-2955
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20242225

Original Research Article

Prevalence of hypertension among fisherman community in Chennai, Tamil Nadu, South India: a descriptive cross-sectional study

Jasmine S. Sundar[1]*, Siva Vijayan[1], Hema Priya A. S.[2], Valarmathi S.[1], Kalpana S.[1], Srinivas G.[1], Arul Paul A.[1], Rajkumar D.[1]

[1]Department of Epidemiology, The Tamil Nadu Dr. MGR Medical University, Chennai, Tamil Nadu, India
[2]Master of Public Health, Independent Researcher, Chennai, Tamil Nadu, India

Received: 13 June 2024
Accepted: 22 July 2024

***Correspondence:**
Dr. Jasmine S. Sundar,
E-mail: depassp1@tnmgrmu.ac.in

ABSTRACT

Background: Hypertension, often referred to as the "silent killer," usually presents no symptoms, making many people unaware of their condition. Fishing, as a profession, poses unique health risks due to harsh environmental conditions, irregular work patterns, and strenuous physical demands. Fishermen are particularly vulnerable due to unhealthy diets, sleep disturbances, physical inactivity, tobacco and alcohol use, and obesity. Estimating the prevalence of hypertension among fishermen is crucial for understanding the extent of this hidden health issue within this high-risk group and for implementing targeted interventions to improve their health outcomes.
Methods: A cross-sectional study was conducted among Chennai's fishermen using systematic random sampling. Data were collected using a semi-structured questionnaire, and blood pressure was recorded following JNC criteria.
Results: The study included 180 fishermen with a mean (SD) age of 49 (12). The prevalence of hypertension was 38.9%. Significant associations were found between hypertension, age, and years of fishing experience. Notably, 77.2% of fishermen lacked knowledge about hypertension, and 86.1% were unaware of its risk factors. Isolated systolic hypertension was found in 16% of participants, while 36% had isolated diastolic hypertension.
Conclusions: In Chennai, hypertension is highly prevalent among fishermen and is significantly associated with age, years of fishing experience and smoking. There was no significant association with family history of hypertension, stress, or fried fish consumption. Awareness and knowledge about hypertension were very low among the fishermen. Although isolated systolic and diastolic hypertension were relatively minimal, regular hypertension screening for this community is essential.

Keywords: Chennai city, Fisherman community, Hypertension, South India, Tamil Nadu

INTRODUCTION

Hypertension is also known as “silent killer", “iceberg disease”. “Rule of halves”. Hypertension frequently presents as a prevalent condition linked to significant morbidity and mortality rates. It is adequately controlled only in less than one-third of affected individuals even in developed countries. Blood pressure (BP) is an important determinant of risk for cardiovascular and renal failure.[1] Many individuals with hypertension may be unaware of its presence due to the absence of warning signs or symptoms. For this reason, it is essential that blood pressure is measured regularly and continued care are required for effective treatment and control.[2] Among various population groups, certain occupational communities, such as fishermen, face unique challenges that could potentially influence their health outcomes. Fishermen are at risk for hypertension due to a combination of occupational, lifestyle, and environmental factors. Fishing is a hazardous occupation, the nature of

irregular work schedules and the surrounding environment in fishing makes the fishermen prone for a lot of health disorders. These health-related morbidities have serious consequences in the lives of the fishermen population.[3] Furthermore, fishermen are one of the most vulnerable occupational groups with unique characteristics of a folk society, since a major portion of the life of fishermen is spent at sea with bizarre sleep and eating pattern, excess salt consumption produces their risk profile for NCDs are different from the general population.

Hypertension is recognized by the WHO as a significant public health concern. Nearly one in five individuals in coastal populations suffer from chronic diseases. A 2015 morbidity profile study among fishermen in Chennai revealed a hypertension prevalence ranging from 4% to 45% and musculoskeletal disorders affecting around 30%.[3] This variability indicates a need for updated and comprehensive data. The present study aims to bridge this gap by understanding the prevalent health-related morbidities within the fishermen community. The findings will help in establishing occupational health services to screen, diagnose, and manage non-communicable diseases (NCDs) in this high-risk population at an early stage. Objectives were to estimate the prevalence of hypertension among the fisherman community in Chennai. To assess the associated risk factors of hypertension among fisherman community in Chennai. To study the knowledge about morbidity associated with hypertension among the fisherman community in Chennai.

METHODS

A descriptive cross-sectional study was conducted from September 2022 to September 2023 among the fishermen community at Kasimedu Fisher Harbour in Chennai. Systematic random sampling was used to select participants, resulting in a total sample size of 180 fishermen. The inclusion criteria were male fishermen aged 18 years and above who were actively involved in fishing and residing in the Chennai Kasimedu region, including those with known cases of hypertension and other co-morbidities. Females were excluded from the study.Approval from the institutional ethics committee was obtained before conducting the study. Informed consent was secured from each participant after explaining the study's purpose. Data were collected using a semi-structured questionnaire, which gathered information on physical characteristics, blood pressure readings (according to JNC criteria), food habits, physical activity levels, and sleep patterns. The data collected from the study were analyzed and represented using descriptive statistics, including frequency and percentage for categorical variables. Continuous variables were summarized as mean and standard deviation. The correlation between quantitative categorical variables was analyzed using the chi-square test, with a level of significance set at 5% (0.05).

RESULTS

Table 1: Socio-Demographic characteristics of study participants (n=180).

S. No	Variable	N	%
1	**Age (in years)**		
	26-35	23	12.7
	36-45	48	26.7
	46-60	84	46.7
	>60	25	13.9
2	**Educational Status**		
	Illiterate	71	39.4
	Primary	80	44.4
	Secondary	15	8.3
	Higher Sec	12	6.7
	Graduate	2	1.1
3	**Marital status**		
	Unmarried	10	5.6
	Married	168	93.3
	Divorced	2	1.2
4	**Type of family**		
	Nuclear Family	89	49.4
	Joint Family	91	50.6
5	**Type of house**		
	Pucca House	34	18.9
	Semi Pucca	17	9.4
	Kutcha House	129	71.7
6	**Boat Possession**		
	Owned	61	33.9
	Rented	119	66.1
7	**Income distribution**		
	<10,000	34	18.9
	10001-20000	142	78.9
	>20000	4	2.2

Table 1 shows the demographic and socioeconomic profile of the participants, with a mean age of 49±12 years. The majority of individuals were within the age range of 46-60 years. Educational attainment varies, with a significant portion being either illiterate or having completed primary education, while smaller percentages have attained higher levels of education. Most participants were married and belong to joint families, reflecting prevalent family structures in the community. Housing predominantly consists of Kutcha houses, indicating lower-income housing situations. While a substantial proportion of participants rent boats, a notable percentage own their boats, highlighting a diverse range of economic activities within the community. Income distribution reveals that the majority of participants earn from 10,001 to 20,000 per month. Table 2 reveals a multifaceted picture of the fishing community's working conditions and characteristics. A considerable proportion of fishermen (46.1%) reported employing various types of boats, reflecting their adaptability and resourcefulness in optimizing fishing operations.

Table 2: Occupational history of study participants.

Characteristics	Description	N	%
Type of boat	Fibre boat	36	20.0
	Trail boat	40	22.2
	Gill net boat	21	11.7
	All of above	83	46.1
Work assigned while fishing	Drive the boat	5	2.8
	Pursing and pulling lodes	18	10.0
	Carrying heavy loads	29	16.1
	All the above	128	71.1
Working hours in Sea per day	<6 hours	11	6.1
	6-12 hours	84	46.7
	>12 hours	83	46.1
Workings days in sea per month	<1 week	147	81.7
	1-2 weeks	14	7.8
	2-3 weeks	14	7.8
	3-4 weeks	5	2.8
Years of fishing	10-20	35	19.4
	21-30	79	43.9
	31-40	51	28.3
	41-60	15	8.4
Alternate job	Yes	27	15
	No	153	85

Table 3: Behavioral patterns among fishermen: personal habits and practices.

Characteristics	Description	n	%
Refreshment drinks	Yes	154	85.6
	No	26	14.4
Smokeless tobacco	Yes	87	48.3
	No	93	51.7
Smoking	Yes	26	14.4
	No	154	85.6
Alcohol consumption	Yes	130	72.2
	No	50	27.8
Regular physical exercise	Yes	138	76.7
	No	42	23.3
Average sleeping hours	<6 hours	45	25.0
	>6 hours	77	42.8
	Interrupted sleep	58	32.2
Stress during fishing	Yes	160	88.9
	No	20	11.1

Furthermore, the majority (71.1%) indicated performing all assigned tasks while fishing, showcasing their hands-on approach and collaborative efforts at sea. Long working hours are evident, with nearly half (46.7%) working between 6 to 12 hours per day, indicating the demanding nature of their profession. Despite these long hours, most fishermen (81.7%) spend less than one week at sea per month, highlighting the intermittent nature of fishing trips. Experience within the community varies, with a significant portion (72.2%) boasting 21-40 years of fishing experience, showcasing a seasoned workforce with valuable expertise. Moreover, a notable proportion (15%) engage in alternate jobs, illustrating the diversification of income sources within the community, providing additional financial stability and resilience.The table 3 presents an overview of the personal habits and characteristics of fishermen. A significant majority of fishermen reported consuming refreshment drinks (85.6%) and alcohol (72.2%), while smokeless tobacco use was reported by nearly half of the participants (48.3%). Smoking was less prevalent, with only 14.4% of fishermen reporting this habit. In terms of health behaviors, a majority of fishermen engaged in regular physical exercise (76.7%) and reported sleeping for more than 6 hours (42.8%), although a considerable proportion experienced interrupted sleep (32.2%). The majority also reported experiencing stress during fishing activities (88.9%).

Table 3: Dietary patterns of Fishermen.

Characteristics	Description	n	%
Skip breakfast	Yes	68	37.8
	No	112	62.2
Frequency of skipping breakfast	Daily	3	1.7
	Once in week	58	32.2
	More than 3 days	5	2.8
	Occasionally	2	1.1
Fish and meat	Everyday	73	40.6
	Once a week	2	1.1
	Twice a week	14	7.8
	Thrice a week	73	40.6
	More than thrice a week	18	10.0
Dry fish	Once a week	87	48.3
	Twice a week	23	12.8
	Thrice a week	3	1.7
	More than thrice a week	2	1.1
	Never	65	36.1
Green leafy vegetables	Everyday	5	2.8
	Once a week	32	17.8
	Twice a week	74	41.1
	Thrice a week	63	35.0
	More than thrice a week	1	0.6
	Never	5	2.8
Fruits	Everyday	30	16.7
	Once a week	54	30.0
	Twice a week	36	20.0
	Thrice a week	13	7.2
	More than thrice a week	7	3.9
	Never	40	22.2

Table 4 provides insight into the dietary patterns of fishermen, revealing various consumption habits

regarding different food groups. A substantial portion of fishermen reported skipping breakfast (37.8%), with the majority skipping it once a week (32.2%). Regarding fish and meat consumption, a significant proportion reported consuming these items every day (40.6%) or thrice a week (40.6%), indicating frequent inclusion in their diets. Dry fish was consumed once a week by nearly half of the participants (48.3%), while green leafy vegetables were consumed most frequently, with 41.1% of fishermen reporting consumption twice a week. Fruit consumption varied, with 16.7% reporting daily consumption and 30.0% consuming fruits once a week.

Table 5: Morbidity profile of fisherman.

Characteristics	Description	N	%
Diabetes mellitus	Yes	33	18.3
	No	147	81.7
Family history of diabetes mellitus	Mother	30	16.7
	Father	19	10.6
Family history of hypertension	Mother	11	6.1
	Father	10	5.6
Cardiovascular disease	Yes	6	3.3
	No	174	96.7
Digestive disease	Yes	4	2.2
	No	176	97.8
Respiratory disease	Yes	5	2.8
	No	175	97.2
Integumentary disease	Yes	9	5.0
	No	170	94.4

Table 5 provides shows the prevalence of various medical conditions and family histories among fishermen. A notable proportion of fishermen reported having diabetes mellitus (18.3%), with a majority indicating no diagnosis of the condition. Family history of diabetes mellitus was reported more frequently among mothers (16.7%) compared to fathers (10.6%). Similarly, a small percentage reported family history of hypertension, with mothers (6.1%) more commonly mentioned than fathers (5.6%). Other medical conditions, such as cardiovascular disease (3.3%), digestive disease (2.2%), respiratory disease (2.8%), and integumentary disease (5.0%), were less prevalent among fishermen.

Table 6: Prevalence of Hypertension.

Characteristics	N	%	95 % confidence interval	
			Lower limit	Upper limit
Hypertensive	70	38.9	32.32	46.63
Non hypertensive	110	61.1	53.83	67.93
Isolated blood pressure				
Isolated systolic BP	29	16	11.46	22.18
Isolated diastolic BP	65	36	29.45	43.35

Table 6 shows the prevalence of hypertension among fishermen is 38.9% (95% CI: 32.32-46.63), while 61.1% (95% CI: 53.83-67.93) are non-hypertensive. Isolated systolic blood pressure affects 16% of fishermen (95% CI: 11.46-22.18), and isolated diastolic blood pressure is present in 36% (95% CI: 29.45-43.35).

Table 7: Adherence to Treatment among Hypertensive Fisherman (n=53).

Characteristic	Yes		No	
	N	%	N	%
Known case of Hypertension	19	10.5%	34	18.8 %

Table 7 shows that among the fishermen, 10.5% are known cases of hypertension, while 18.8% are not.

Table 8: Significant risk factors for Hypertension among fisherman.

Variables	Pearson chi – square	P value
Age	18.634	0.000
Years of fishing	13.710	0.008
Smoking	92.21	0.012

In Table 8, the Pearson chi-square test indicates significant associations between hypertension and age (χ^2=18.634, p=0.000), years of fishing (χ^2=13.710, p=0.008), and smoking (χ^2=92.21, p=0.012).

Table 9: Knowledge about Hypertension among Fisherman (n=180).

Characteristics	Description	N	%
Do you know, what is hypertension?	Yes	41	22.8
	No	139	77.2
Do you know, how to control of hypertension without medicine	Yes	16	8.9
	No	164	91.1
Do you know the risk factors of Hypertension	Yes	25	13.9
	No	155	86.1

Table 9 indicates that 22.8% of respondents are aware of what hypertension is, 8.9% know how to control it without medication, and 13.9% are familiar with its risk factors. Conversely, a significant majority-77.2%, 91.1%, and 86.1% respectively lack knowledge in these aspects. Table 10 shows the significance of various factors associated with hypertension among fishermen is highlighted through p values. Age shows a highly significant association with hypertension (p=0.0003), indicating that older fishermen are more likely to have hypertension. Years of fishing approach significance (p=0.08), suggesting that longer fishing experience might

be linked to higher hypertension prevalence. Other factors, such as working hours at sea per day (p=0.683), working days at sea per month (p=0.469), and dietary patterns, including dry fish (p=0.524), green leafy vegetables (p=0.07), and fruit consumption (p=0.578), do not show significant associations with hypertension. Behaviorally, current smoking is significantly associated with hypertension (p=0.01), while smokeless tobacco (p=0.575), current alcohol use (p=0.404), physical exercise (p=0.271), and sleep patterns (p=0.695) are not significantly linked.

Table 10: Factors associated with Hypertension among fisherman

Variables	Parameters	Prevalence of Hypertension			P value
		Yes	No	Total	
Age (in years)	26-35	2 (2.9%)	21 (19.1%)	23 (12.8%)	0.0003
	36-45	16 (22.9%)	32 (29.1%)	48 (26.7%)	
	46-60	35 (50.0%)	49 (44.5%)	84 (46.7%)	
	>60	17 (24.3%)	8 (7.3%)	25 (13.9%)	
Occupation					
Years of fishing	10-20	5 (7.1%)	30 (27.3%)	35 (19.4%)	0.08
	21-30	37 (52.9%)	42 (38.2%)	79 (43.9%)	
	31-40	24 (34.3%)	27 (24.5%)	51 (28.3%)	
	41-50	4 (5.7%)	10 (9.1%)	14 (7.8%)	
	51-60	0 (0.0%)	1 (0.9%)	1 (0.6%)	
Working hours in sea/ day	<6 Hours	4 (5.8 %)	7 (6.4%)	11 (6.2%)	0.683
	6-12 hours	30 (43.5 %)	54 (49.5%)	84 (47.2%)	
	>12 hours	35 (50.7 %)	48 (44.0%)	83 (46.6%)	
Workings days in sea/ month	< 1 week	54 (77.1%)	92 (83.6%)	146 (81.1%)	0.469
	1-2 week	5 (7.1%)	9 (8.2%)	14 (7.8%)	
	2-3 week	8 (11.4%)	7 (6.4%)	15 (8.3%)	
	3-4 week	3 (4.3%)	2 (1.8%)	5 (2.8%)	
Dietary pattern					
Dry fish	Weekly once	37 (52.9 %)	50 (45.5 %)	87 (48.3 %)	0.524
	Weekly twice	11 (15.7 %)	12 (10.9 %)	23 (12.8 %)	
	Weekly thrice	1 (1.4 %)	2 (1.8%)	3 (1.7 %)	
	More than thrice a week	1 (1.4 %)	1 (0.9%)	2 (1.1 %)	
	Never	20 (28.6%)	45 (40.9%)	65 (36.1%)	
Green leafy vegetables	Daily	0 (0.0%)	5 (4.5%)	5 (2.8%)	0.07
	Weekly once	15 (21.4%)	17 (15.5%)	32 (17.8%)	
	Weekly twice	24 (34.3%)	50 (45.5%)	74 (41.1%)	
	Weekly thrice	27 (38.6%)	36 (32.7%)	63 (35.0%)	
	More than thrice a week	0 (0.0%)	1 (0.9%)	1 (0.6%)	
	Never	4 (5.7%)	1 (0.9%)	5 (2.8%)	
Fruits	Daily	12 (17.1 %)	18 (16.4%)	30 (16.7%)	0.578
	Weekly once	19 (27.1 %)	35 (31.8 %)	54 (30.0%)	
	Weekly twice	11 (15.7 %)	25 (22.7 %)	36 (20.0%)	
	Weekly thrice	7 (10.0 %)	6 (5.5 %)	13 (7.2%)	
	More than thrice a week	4 (5.7 %)	3 (2.7 %)	7 (22.2 %)	
	Never	17 (24.3%)	23 (20.9 %)	40 (22.2 %)	
Behavioural pattern					
Current smoking	Present	90 (81.8%)	6 (8.6%)	96 (14.4%)	0.01
	Absent	20 (18.2%)	64 (91.4%)	84 (85.6%)	
Habit of smokeless tobacco	Present	32 (45.7 %)	55 (50.0 %)	87 (48.3 %)	0.575
	Absent	38 (54.3 %)	55 (50.0 %)	93 (51.7 %)	
Current alcohol user	Present	53 (75.7%)	77 (70.0%)	130 (72.2%)	0.404
	Absent	17 (24.3%)	33 (30.0%)	50 (27.8%)	

Continued.

Variables	Parameters	Prevalence of Hypertension			P value
		Yes	No	Total	
Physical exercise	Present	50 (71.4 %)	87 (79.1 %)	137 (76.1 %)	0.271
	Absent	19 (27.1 %)	23 (20.9 %)	42 (23.3 %)	
Sleeping hours	<6 hours	18 (25.7 %)	27 (24.5 %)	45 (25.0 %)	0.695
	>6 hours	32 (45.7 %)	45 (40.9 %)	77 (42.8 %)	
	Interrupted sleep	20 (28.6 %)	38 (34.5 %)	58 (32.2 %)	

DISCUSSION

Socio demographic factors

Age was identified as a significant risk factor for hypertension in the current study, which demonstrated an increase in the proportion of hypertensive individuals with advancing age. Additionally, the study found a significant association between the age of individuals engaged in fishing and the prevalence of hypertension. This finding aligns with the research conducted by Gopal M et al 2013 on the physical morbidity and risk factors among fishermen in Chennai district, which also revealed a similar pattern of increasing high blood pressure prevalence with age.

Prevalence of Hypertension

The hypertension prevalence of 38.9% in this study which is close to a study by Balasundaram et al and is lower to a study Gopal M et al 46.6%.[3,4] Adherence to treatment among known cases of hypertension in this population is low, as compared to study by Nikkil et al where 28% of diagnosed individuals reported not taking daily treatment.[5]

Personal Habits and HTN

Among participants, 14.4% smoked tobacco, 48.3% used smokeless tobacco, and 72.2% consumed alcohol. This high prevalence of tobacco and alcohol use among young fishermen aligns with findings by Prasad Pramod Rane et al in Udupi taluk, Karnataka.[6] According to Annadurai et al participants averaged 7.14 hours of sleep per day, ranging from 4 to 11 hours. In this study, 42.8% of participants slept more than 6 hours per day.[7] The majority of study participants engaged in regular exercise, although the findings were not as significant as those reported in the preceding study by Gopal M et al in Chennai district.

Dietary habits and HTN

Regarding vegetable consumption, study participants consumed vegetables an average of 3 days per week. Among the research population (n=180), many reported consuming fruits an average of 2 days per week, similar to findings from a prior study by Annadurai K et al in Kancheepuram district.[7] The average daily intake of dry fish was about 61.1%, ranging from 1 to 4 days. Additionally, 61.7% of participants consumed green leafy vegetables and other vegetables once to twice a week, consistent with the research by Mudgal et al in Mangalore.[8]

Occupational history

In the current study, participants had a mean of 30.36 years (SD 9.15) involved in fishing, which is lower than the value reported in a study conducted in southern India.[9] Additionally, 36.7% of participants had spent more than 30 years in fishing.[10] The prevalence of hypertension showed a significant increase with the number of years of fishing experience, aligning with the findings of Gopal M et al study in the Chennai district. Approximately 46.1% of the participants worked for more than 12 hours. The proportion of fishermen engaged in fishing activity for more than 3 to 4 weeks in a month exhibited an increased prevalence of hypertension (53.33%), although this finding did not reach statistical significance. Long-term family separation, extended periods of strenuous work, and sleep disturbances can collectively contribute to heightened stress levels. Stress, a well-established risk factor for non-communicable diseases (NCDs) like hypertension, was prevalent in 88.9% of our study participants, categorized as mild in 23.3%, moderate in 53.3%, and severe in 12.2%. Similar findings were reported in a study by Harshani et al.[11]

Knowledge about Hypertension

In this study, 22.8% of the participants were aware of hypertension, while the remaining 77.2% were not. Similarly, in Gondar, Northwest Ethiopia, 26.8% of individuals were aware of hypertension, a percentage that closely aligns with this study results.[12]

The study relied solely on self-reported physical activity and personal habits, without direct observation. Additionally, the early morning fishing trip posed challenges due to limited access.

CONCLUSION

In conclusion, the study revealed an alarmingly high prevalence of hypertension among fishermen. Major associated risk factors included age, smoking habit, and years of experience in fishing. No association was found

with family history of hypertension, stress, or consumption of fried fish. Additionally, the study participants exhibited low awareness of hypertension and lacked knowledge about its risk factors. Moreover, the occurrence of isolated systolic and diastolic hypertension was found to be low. These findings underscore the urgent need for targeted interventions to improve awareness, address risk factors, and mitigate the burden of hypertension in this population.

Recommendations

Establish regular free medical check-up and screening programs, either through government initiatives or non-governmental organizations. These programs can help detect hypertension early and provide necessary interventions. Develop health education programs that focus on overall well-being and occupational health. Specifically target the younger generation of fishermen to prevent diseases related to their profession.

Encourage the use of PPE among fishermen during their fishing activities. Employing appropriate gear can mitigate the risk of injuries and health complications. Implement BCC strategies to address alcohol consumption and smoking habits prevalent within the fishermen community. Raise awareness about the associated health risks. Organize community-wide awareness campaigns to educate fishermen about rehabilitation techniques and available resources. Provide knowledge and guidance to fishermen on adopting healthy lifestyle practices, including making nutritious dietary choices.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Burnier M, Damianaki A. Hypertension as Cardiovascular Risk Factor in Chronic Kidney Disease. Circ Res. 2023;132(8):1050-63.
2. Hypertension. Available at: https://www.who.int/news-room/fact-sheets/detail/hypertension Accessed on 12th June 2024.
3. Muthukrishnan G, Uma SBKP. A cross-sectional study of hypertension and their risk factors in fishermen of Chennai district. Int J Community Med Public Health. 2018;5(6):2464-70.
4. Balasundaram AK, Govindarajan PK, John William Felix. Prevalance of Hypertension among Fishermen Population in Tamil Nadu. Sch J Appl Med Sci SJAMS. 2018;6(10):3890-4.
5. Sudharsanan N, Ali MK, McConnell M. Hypertension knowledge and treatment initiation, adherence, and discontinuation among adults in Chennai, India: a cross-sectional study. BMJ Open. 2021;11(1):40252.
6. Rane PP, Narayanan P, Binu V, Unnikrishnan B. Prevalence of Tobacco and Alcohol Consumption among Fishermen in Udupi Taluk' Karnataka, India: a Cross-Sectional Study. Asian Pac J Cancer Prev APJCP. 2016;17(4):1733-7.
7. 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 Community Med Public Health. 2018;5(2):708-13.
8. Mudgal, Shankarappa M, Kosgi S, Hegde VN, Sharma R, Rao SCG, et al. "Prevalence of hypertension among fisherman community in The Island of Bengre, Mangalore. IJHSR. 2012;1-15.
9. Heetveld MJ, de Visser W, Veerman DP, Bilo HJ, van Montfrans GA. Increased risk of heart and vascular diseases in fisherman from Urk. Ned Tijdschr Geneeskd. 1992;136(26):1251-5.
10. Doddamani A, Ballala AK, Madhyastha SP, Kamath A, Kulkarni MM. A cross-sectional study to identify the determinants of non-communicable diseases among fishermen in Southern India. BMC Public Health. 2021;21:1-1.
11. Harshani SR, Abeysena C. Selected non-communicable diseases and risk conditions among fishermen in Divisional Secretariat Division of Kalpitiya. 2017;22(1):20.
12. Wolde M, Azale T, Debalkie Demissie G, Addis B. Knowledge about hypertension and associated factors among patients with hypertension in public health facilities of Gondar city, Northwest Ethiopia: Ordinal logistic regression analysis. PloS One. 2022;17(6):270030.

Cite this article as: Sundar JS, Vijayan S, Hema PAS, Valarmathi S, Kalpana S, Srinivas G, et al. Prevalence of hypertension among fisherman community in Chennai, Tamil Nadu, South India: a descriptive cross-sectional study. Int J Res Med Sci 2024;12:2949-55.