



Cross sectional study on the association among hypertension with obesity indicators and dietary patterns of fishing community at coastal regions in India

Sk Nazibar Rahaman^a, Swarnali Das^a, Sovan Samanta^a, Rubai Ahmed^a, Jhimli Banerjee^{a,b}, Sk Sahanawaz Alam^c, Amitava Pal^{d,*}, Kazi Monjur Ali^{e,**}, Sandeep Kumar Dash^{a,*}

^a Department of Physiology, University of Gour Banga, Malda, 732103, West Bengal, India

^b Department of Food and Nutrition, Gour Mahavidyalaya, Malda, 732142, West Bengal, India

^c Department of Botany, Garhbeta College, Garhbeta, Paschim Midnapore, 721127, West Bengal, India

^d Department of Physiology, City College, 102/1, Raja Rammohan Sarani, Kolkata, 700009, West Bengal, India

^e Department of Nutrition, M.U.C Women's College, Purba Bardhaman, 713104, West Bengal, India

ARTICLE INFO

Keywords:

Fishermen
Anthropometric parameters
Obesity
Nutrition
Hypertension

ABSTRACT

Background and aim: One of the main factors of sickness and disability around the world is hypertension and obesity is the main predictor of hypertensive condition. A few population-based studies on fishermen in West Bengal, India, evaluated the association between anthropometric parameters, nutritional intake, and obesity indicators with blood pressure (BP). The present investigation aims to explore the association between obesity indicators and nutrient consumption with blood pressure.

Methods: In the present study, a number of 1202 male fishermen (ages 25–60 years) from West Bengal's coastal areas, took their anthropometric measurements, BP values, and nutritional intake using standard techniques. The cut-off values of body mass index (BMI) and percentage of body fat (BF%) correlated with hypertension were determined by using receiver operating characteristic analysis. The statistical analyses were performed using SPSS (Version 20) and MedCalc statistical software (version 20.115).

Results: The study showed that most of the anthropometric parameters were higher in the control group than the fishermen, and most of the fishermen remain in normotensive conditions. Obesity indicators were significantly high in hypertensive individuals. Increasing of the obesity indicators were associated with hypertensive condition. In the case of nutrient intake, only fat and oil intake had a significant positive correlation with an increase in BP. This finding also suggests that the BMI and BF% cut off values were associated with hypertension.

Conclusion: This study suggests that the increasing value of BMI and the cut-off value of BMI and BF% of this study are all potential risk factors for hypertension.

1. Introduction

India is the foremost producer of fish on a global scale, contributing 7.96% to the total production. About 16.24 million metric tons of fish were produced in India during FY 2020–2021.¹ It was predicted that the GDP of India will stand fifth in the world in 2022. Millions of people worldwide rely on the fishing sector for their survival and livelihood. Over 10% of the world's population makes their living from fisheries and aquaculture.²

Different weather patterns, potentially hazardous equipment, and ship movements are factors contributing to the high mortality rate among fishermen.³ Studies also revealed that tropical cyclones, which are life-threatening events in the deep sea, unsafe working conditions, days with little rest, robust physical effort, equipment failure, and continual economic and psychological stress are also risk factors for fishing and have an impact on their health, particularly their blood pressure.⁴ Irregular meal intervals and low consumption of green vegetables, roots, and tubers were very low in their diet.⁵

* Corresponding author.

** Corresponding author.

*** Corresponding author.

E-mail addresses: amitavaergo@gmail.com (A. Pal), kazimonjur1984@gmail.com (K.M. Ali), deep.vu@gmail.com (S.K. Dash).

<https://doi.org/10.1016/j.cegh.2024.101573>

Received 13 June 2023; Received in revised form 1 March 2024; Accepted 6 March 2024

Available online 11 March 2024

2213-3984/© 2024 The Authors. Published by Elsevier B.V. on behalf of INDIACLEN. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).