

Content available at: <https://www.ipinnovative.com/open-access-journals>

IP Journal of Nutrition, Metabolism and Health Science

Journal homepage: <https://www.jnmhs.com/>

## Review Article

## Challenges for the fishing community on nutritional perspective in West Bengal coastal areas during the COVID-19 pandemic

Pallabi Bera<sup>1,\*</sup>, Sulagna Ray<sup>1</sup><sup>1</sup>Dept. of Nutrition, Seacom Skills University, Birbhum, West Bengal, India

## ARTICLE INFO

## Article history:

Received 15-08-2021

Accepted 17-09-2021

Available online 28-10-2021

## Keywords:

Fishing community

Nutrition

livelihood

Malnutrition

Anxiety.

## ABSTRACT

**Introduction:** Covid 19 pandemic has been affecting from March 2020 to 2021 onwards to all types of people globally. The fishing community is one of the most affected communities depend on their limited income. Their health, mental condition, and lifestyles are all adversely affected by this pandemic situation, mainly for middle or lower-level income groups, including India. Additionally, covid 19 also has disrupted the livelihood of fishing communities in socio-economic and nutrition, especially health perspectives.

**Objectives:** To review and analyze current literature trends on covid 19 concerning fishing communities' life, food habits, and challenges.

**Materials and Methods:** The study was designed based on current literature from 2020 March till 2021 August, focussing mainly on the West Bengal coastal areas. 'Fishing communities,' 'West Bengal coastal areas,' 'covid-19 crisis', 'social and economic challenges,' 'nutrition crisis' are significant keywords and phrases used for the online searches in open access all databases including Pubmed, Google scholars.

**Conclusion:** Fishing communities are highly affected due to the COVID-19 pandemic economically and on nutritional perspectives due to various factors. Presently, there are scant data; hence more research and views are needed about the fishing community in Indian and global perspective as well.

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [reprint@ipinnovative.com](mailto:reprint@ipinnovative.com)

### 1. Introduction

The Novel Coronavirus SARS-CoV2, popularly known as the Covid 19 pandemic, has limited human activities with multiple lockdowns in several parts of the world. By observing the outbreak's severity, World Health Organization (WHO) declared Covid 19 a global emergency on 30<sup>th</sup> January 2020.<sup>1</sup> As the disease is highly transmissible and the vaccine was not launched till Dec 2020, the ways to flatten the curve.<sup>2,3</sup> Hence, the situation was included the imposition of self-quarantine, social distancing, closedown of transportation, and lockdown throughout the country.<sup>4</sup> The outbreak of covid 19 has also dangerously affected the livelihoods of fishing communities

like other daily-earning workers across India. The east coast of India covers four maritime states Tamilnadu, Andhra Pradesh, Odisha, and West Bengal. West Bengal is one of the vital fishing states in India, and fishing is carried out by fishing net, fishing craft, motorized boat, etc. Complete lockdown from 24<sup>th</sup> March to 31<sup>st</sup> May 2020 dramatically affected the fishing communities' day-to-day earnings during and immediately after the lockdown. Anglers could not land and catch the fish because harbors and landing centers remained closed. So, thousands of anglers were being stranded in various places along the coast, as per the report The Times of India, 2020. In total, lockdown disrupted the livelihoods of the fishing community and needed proper care for their betterment.<sup>5</sup>

\* Corresponding author.

E-mail address: [Pallabibera9@gmail.com](mailto:Pallabibera9@gmail.com) (P. Bera).

## 2. Literature Review

The covid 19, or novel coronavirus is first seen in China affected the whole world. The virus has spread from China to almost all countries and has caused millions of cases of mortality and morbidity so far.<sup>6</sup> The small-scale industries all across the globe are majorly hampered, while the fishing industry is concerned here within our paper. The small-scale fishing and coastal fishing communities underwent severe crises during the covid-19 pandemics. The fishing communities requested that local social workers and politicians hold administrative posts to take proper action for helping them. The Bennett et al. 2020 study explained that the coastal people living with such a fishing profession were almost affected all out of the Indian coastal region. Similarly, Bhargavi et al.'s 2020 study showed the poor socio-economic status of fisherwomen in the coastal area of Andhra Pradesh also. The study reported that most anglers were below the poverty line and did not have any savings.<sup>7</sup> So, during the lockdown, their livelihood became shuttered.<sup>8</sup>

Avtar et al. 2021. explained in their article that India's blue economy and small-scale fisheries are disrupted during the covid phase due to disruption in the fish catch, market, and supply chain.<sup>9</sup> Similarly, Parampriya et al. 2020 discussed on challenges of fisherfolk women of Puducherry during covid 19 and observed several cases and concluded that lockdown affects the economy of the house of fisherwomen so that they cannot buy proper food for their family and create stress, anxiety about their future.<sup>10</sup> Sunny et al. 2021 extensively studied fisheries in Bangladesh. They said that strict lockdown and transport obstacles cause labor crisis, illness, stress, anxiety in fishers and impact fishing communities' income, nutrition, and food security.<sup>11</sup> Sekhar et al. 2020 actively worked on the livelihoods of fishers in Yanam, Puducherry. They said that covid 19 has a chronic impact on fishers' livelihoods as the people of Yanam mainly depend on fishing. Due to covid 19 and strict lockdown, unemployment increased poverty, food insecurity, malnutrition.<sup>12</sup>

Purkait et al. 2020 worked on the pandemic situation in the fisheries sector of India and said that due to less demand and supply chain of fish and fishery products. During the lockdown period, their economy became fragile, and a poor economy caused poverty and less food consumption.<sup>13</sup> Campbell et al. 2021 worked on the impact of covid 19 across small tropical scale fishing communities and concluded that fishing and fish trading was in declined mode during the covid phase. Therefore, fishing communities become vulnerable to the impact of the covid 19 pandemic.<sup>14</sup> Gopal et al. 2020 said that during and immediately after lockdown, almost all the harbors were closed, so the fishermen and women were affected badly.<sup>15</sup> Deboo and Garg, 2020 of Indian Institute of Management Bangalore extensively pointed on Porbandar fisheries and

stated that the impact of covid 19 on the Porbandar fisheries sector was severe. This had a direct effect on local fisherfolk. The pandemic situation disrupted the livelihood of the fishing family.<sup>16</sup>

Food and Agricultural organization gave information on covid 19 and small-scale fisheries in the whole world and said that strict lockdown broke the supply chain of fish and caused unemployment.<sup>3</sup> Woodhead et al. 2018, worked on the health of anglers, and they said that different health issues occur on anglers in fishing. Their mental health is affected, occupational health is also affected.<sup>17</sup>

Pal B et al. 2011 showed in a study that the nutritional status of fishermen communities and said that they were living with poor dietary quality in context to BMI. The dietary pattern was very unhealthy, which caused nutritional deficiency.<sup>18</sup> Vetrivel 2019 highlighted the fisherwomen of India and said that the contribution of fishers in pre and post-harvest sectors was excellent, which increased society's economy. But they currently live below the poverty line. Hence, they need Government help for improving their professionals such as a free boat, net, free loans, house, etc.<sup>19</sup>

Vigasini 2015 showed on the health and self-employability of fisherwomen of Chennai and stated that fisherwomen have poor knowledge, low literacy, skill capacities. They have little idea about food, nutrition, hygiene, sanitation. So, self-employment is needed for their betterment.<sup>20</sup> Hossain et al. 2015 worked on hygiene practice and nutritional status of anglers residing in the southern part of Bangladesh. They observed that most respondents washed their hands before taking food and after the toilet, but they only used water to wash their hands. They do not maintain proper hygiene and sanitation, which causes several diseases like G.I. problems, skin diseases, etc., nutritionally.<sup>21</sup> Pal B et al. 2014 discussed in their paper the nutritional status of fishermen communities and stated that as their food intake was inadequate, as a consequence, their BMI was low, and they had poor dietary quality.<sup>22</sup>

## 3. Materials and Methods

The study has been designed based on current literature from 2020 March till 2021 August, focussing mainly on the West Bengal coastal areas. 'Fishing communities,' 'West Bengal coastal areas,' 'Covid-19 crisis,' 'social and economic challenges,' 'nutrition crisis' are significant keywords and phrases used for the online searches in open access all databases including Pubmed, Google scholars. 'AND' and 'OR' Boolean search has been applied for the filtration in the study,<sup>23–26</sup>

#### 4. Discussion

As per analyzing research article, we can say that pandemic situation due to covid 19 fishing community in the entire world gets suffered. According to the research article, this backward community helps to improve the Indian economy but lives below the poverty line and does not get all the required facilities. During lockdown or immediate after lockdown, the harbors remain closed. So, people involved in fishing and fish trading undergo critical situations. Research says that the socio-economic condition of the fishing community is deficient, so that the women of the family are also involved in the different fishing-related jobs. Still, their consumption of food is low. During the lockdown, catching fish was suspended, and fish selling became less in the market. They could not earn enough money for their family that affected their health indirectly. Several studies showed that anglers do not have much more savings, so during the covid phase, they did not have money in their hands and became stressed and anxious about their future. Fishers do hard work as they go to sea, catch the fishes, and then sell them in the market.<sup>24,25</sup> So, they work hard, but intake of food is deficient. Their BMI is very low live in poor nutritional status. Studies showed that fisherwomen have less hemoglobin level and vitamin-mineral deficiency. During the lockdown, food availability in the market as transportation was stopped, unavailability of local jobs, food insecurity, high cost of food substances, and less earning of people were unexpected and almost devastated. As the fishing community depends on fishing, they suffer the most.<sup>26</sup>

Among all the east coast states West Bengal coast is a busy coast as it is famous for tourism. Every day about 100 trollers go to sea to catch fish. After seeing it, they sell fish in hotels for tourists. But due to covid 19 and lockdown, very few people come to these places. Hence, the selling of fish becomes very low. Several studies showed that small-scale fisherfolk were affected by the covid situation, and their health and nutrition status got hampered. However, they tried to maintain the covid protocol lime wearing musk, washing hands frequently with soap, maintain social distancing, etc. According to one research, both fishermen and women consume a low amount of food, especially fruits, milk, vegetables. Due to the large family amount of intake of food is scarce.<sup>25</sup> They suffer from several vitamin and mineral deficiency disorders. Low immunity causes several diseases. During the strict lockdown, inadequate food intake occurs, and the community suffers from several deficiency disorders and malnutrition-related disorders.<sup>26–28</sup>

So, through different research articles, we can say that the covid 19 pandemics have disrupted fishing communities' lives. The Government should cooperate by enough compensation to them appropriately to combat this situation even in the future. During that time, even now, both state and central Government provides free Ratio (5kg rice

and 3kg wheat), health card (swasthya sathi card) facilities that might benefit them. Further, the mid-day meal system for 6-12 years students for every school is also found helpful during this pandemic situation.<sup>29</sup>

The vice president Shri M. Venkaiah Naidu, on 7<sup>th</sup> Dec 2020, said that covid 19 proven to be a game-changer for India's fisheries sector. As fish is an excellent source of protein, and according to medical persons, protein is needed for combating covid 19, so fishing gets a priority in the context of the covid 19 situations. The Government tries to enhance fish production to 22 million metric tons by 2024 25. This would be beneficial for the fishing community's livelihood, according to Press Information Bureau, Govt. of India, Vice president's secretariat, 7<sup>th</sup> December 2020, New Delhi, India.<sup>29–31</sup>

#### 5. Conclusion

The fishing sector is prominent in the whole world. This sector increases our economy, but they were primarily affected during the lockdown. They did not have local jobs and extra money or savings to move another placer for earning excess. Poor income causes an inadequate intake of food, and deficiency disorders ids typical for them. Hence, the Government should pay more attention to them and their family to stand up again and live a better life for the future.

#### 6. Source of Funding

None.

#### 7. Conflict of Interest

None.

#### References

1. Sohrabi C, Alsafi Z, Neill N, Khan M, Kerwan A, Jabir A. World Health Organizaition declares gklobal emergency; A review of t6he 2019 novel coronavirus( COVID19). *Int J Surg.* 2020;6(76):71–6. doi:10.1016/j.ijsu.2020.02.034.
2. Nicola M, Alsafi Z, Sohrabi C. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int J Surg.* 2020;78:185–93. doi:10.1016/j.ijsu.2020.04.018.
3. www.fao.org on Impact on COVID 19 and small-scale fisheries; 2020. Available from: [https://iimb.ac.in/turn\\_turn/porbandar-fisheries-impact-covid-19.php](https://iimb.ac.in/turn_turn/porbandar-fisheries-impact-covid-19.php).
4. Mahendra D, Sengupta S, Igidr R. COVID-19 Impact on the Indian Economy - Detailed Analysis. *Investigación económica.* 2020;80(315):1–48. doi:10.22201/fe.01851667p.2021.315.76845.
5. Ghosal S. Slow movement of fish seeds from Bengal due to lockdown to impact fish production in the country Read more at: [https://economictimes.indiatimes.com/news/economy/agriculture/slow-movement-of-fish-seeds-from-bengal-due-to-lockdown-to-impact-fish-production-in-the-country/articleshow/75152516.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cpps t](https://economictimes.indiatimes.com/news/economy/agriculture/slow-movement-of-fish-seeds-from-bengal-due-to-lockdown-to-impact-fish-production-in-the-country/articleshow/75152516.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cpps t; 2021. Available from: <a href=). Accessed on 15.

6. Lu H, Stratton CW, Tang YW. Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. *J Med Virol*. 2020;92(4):401–2. doi:10.1002/jmv.25678.
7. Bennett NJ, Finkbeiner EM, Ban NC. The COVID-19 Pandemic. *Small Scale Fisheries Coastal Fishing Commun Coast Manag*. 2020;48(4):336–47.
8. Kanchal B. Socio-economic status of fisherwomen community in coastal Vizianagaram district of Andhra Pradesh, India. *J fisheries*. 2020;8(1):741–5. doi:10.32385/JOF.2020.33.3-4.10.
9. Avtar R, Singh D, Umarhadi DA, Yunus AP, Misra P, Desai PN, et al. Impact of COVID-19 Lockdown on the Fisheries Sector: A Case Study from Three Harbors in Western India. *Remote Sensing*. 2021;13(2):183. doi:10.3390/rs13020183.
10. Premapriya M, Jeyaseelan DM. Issues and Challenges of Fisher Folk Women During Covid-19 Lockdown: A Sociological Case Study Analysis With Special Reference to Puducherry. *JCR*. 2020;7(19):3613–7.
11. Sunny AR, Mithun MH, Prodhan SH, Ashrafuzzaman M, Rahman S, Billah MM, et al. Fisheries in the Context of Attaining Sustainable Development Goals (SDGs) in Bangladesh: COVID-19 Impacts and Future Prospects. *Sustainability*. 2021;13(17):9912. doi:10.3390/su13179912.
12. Sekhar VK. The impact of covid 19 on the livelihoods of fishermen community in Yanam, Puducherry; An analysis. *Eur J Mol Clin Med*. 2020;7(8):869–80.
13. Purkait S, Karmakar S, Chowdhury S, Mali P. Impact of coronavirus (COVID19) pandemic on fisheries sector in India: A minireview. *Ind J PureApp Biosci*. 2020;8(3):487–92. doi:10.18782/2582-2845.8179.
14. Campbell SJ, Jakub R, Valdivia A. Immediate impact of COVID-19 across tropical small-scale fishing communities. *Ocean Coast Manag*. 2021;200(1):105485. doi:10.1016/j.ocecoaman.2020.105485.
15. Gopal N, Edwin L, C R. COVID-19 Throw The Indian Fisheries Sector Out Of Gear. *INFOFISH Int*. 2020;4:21–8.
16. Deboo J, Garg R. Porbandar fisheries and impact of Covid19., Indian Institute of Management Bangalore; 2020. Available from: [https://iimb.ac.in/turn\\_turn/porbandar-fisheries-impact-covid-19.php](https://iimb.ac.in/turn_turn/porbandar-fisheries-impact-covid-19.php). Accessed on 15.
17. Woodhead AJ, Abernethy E. Health in fishing communities: A global perspective. *Fish Fisheries*. 2018;19:839–52. doi:10.1111/faf.12295.
18. Pal B, Chatterjee M, Maity M, Mukhopadhyay B, Gupta M. Income and Nutritional status of the Fishing community residing in Coastal Bay of Bengal: A Case Study. *Anthropol Anzeiger*. 2011;68(2):195–208.
19. Vetrivel K. Fisher Women in India - An Overview. *Glob Dev Rev*. 2019;2(2):24–44.
20. Viganini N. Enhancing Health and Self Employability of Fisher Women in Kasimedu Fishing Hamlet of Chennai. *IJAR*. 2015;5(12):354–6.
21. Hossain S. Hygiene practice and nutritional status of fisherman residing southern part of Bangladesh. *Am Res*. 2015;4(2):3316–20.
22. Pal B, Seal B, Roy S. Nutritional Status of Fishermen Communities: Validation of Conventional Methods with Discriminant Function Analysis. *Bull Math Sci Appl*. 2014;8:49–59. doi:10.18052/www.scipress.com/BMSA.8.49.
23. Engage E. COVID-19: Examining the Impact of Lockdown in India after One Year. *Econ Polit Wkly*. 2015;p. 7–8. Available from: <https://www.epw.in/engage/article/covid-19-examining-impact-lockdown-india-after-one>.
24. Das BK, Roy A, Som S. Impact of COVID-19 lockdown on small-scale fishers (SSF) engaged in floodplain wetland fisheries: evidence from three states in India. *Environ Sci Pollut Res Int*. 2021;6:1–12. doi:10.1007/s11356-021-16074-9.
25. Taylor S, Roberts MJ, Milligan B, Ncwadi R. Measurement and implications of marine food security in the Western Indian Ocean: an impending crisis? *Food Secur*. 2019;11(5):1395–1415. doi:10.1007/s12571-019-00971-6.
26. Banerjee S, Srivastava S, Giri AK. Possible nutritional approach to cope up COVID-19 in Indian perspective. *Adv Res J Med Clin Sci*. 2020;06(06):207–219.
27. Dhakade M. COVID -19 impact on the livelihood of small and marginal farmers. *Business Agriculture*. 2020;6(1):14–5.
28. Jena J, George G. Small-scale fisheries in India: an appraisal. In: Giri S (ed) *Small-scale Fisheries in South Asia*. South Asian Association for Regional Cooperation Agriculture Centre; 2018. p. 15–41.
29. Banerjee S. Uses of technologies & social media for diet and exercise awareness among obese, hypothyroid, and pre-diabetic women - A case study in West Bengal. *Univ Archit Technol*. 2020;12(3):4682–4688.
30. Aborde DD, Martin W, Vos R. Impacts of COVID-19 on global poverty, food security and diets. IFPRI Discussion Paper; 1993. p. 50. doi:10.2499/p15738coll2.134229.
31. Mangubhai S, Nand Y, Reddy C, Jagdish A. Politics of vulnerability: impacts of COVID-19 and Cyclone Harold on Indo-Fijians engaged in small scale fisheries. *Environ Sci Policy*. 2021;120:195–203. doi:10.1016/j.envsci.2021.03.003.

## Author biography

**Pallabi Bera**, Research Scholar

**Sulagna Ray**, Associate Professor

**Cite this article:** Bera P, Ray S. Challenges for the fishing community on nutritional perspective in West Bengal coastal areas during the COVID-19 pandemic. *IP J Nutr Metab Health Sci* 2021;4(3):83-86.