

Mental health and fisheries—An understudied topic of global relevance

At the time this Editorial was written, the first author had just finished a delicious seafood-based paella, sitting in a rented house facing the coastline of Mallorca, Spain, while enjoying a few weeks of a relaxing summer break. His mental health was subjectively defined as being pretty good, and the essential nutrients in the seafood dish likely contributed to physical health.

Such a nutrient-based, consumer-centred perspective is probably the most studied aspect of the theme of “health” in fisheries. Fish and other seafoods provide essential micronutrients and fatty acids, and some of the most vulnerable communities in the world depend crucially on fish from capture fisheries for their livelihood (Maire et al., 2021). Seafood generated from capture fisheries has in many cases a much lower environmental footprint than the production of other animal protein (Hilborn et al., 2018). Sustainable fisheries in well-functioning ecosystems can thus be perceived as an important provider of health for consumers and fish-reliant communities, the benefits of which likely translate into the mental health of those who enjoy fresh seafood as illustrated by the gastronomic experience of the first author as he contributed to this editorial.

But what about the mental health of the providers of seafood, the commercial fishers? Several events over the past 2 years have catapulted the important issue of mental health to the forefront of public attention. Most prominently, the COVID-19 outbreak has been the principal stimulus to the recent discussion of mental health, but other modern developments have conspired to boost the attention paid to it in the press and among policy makers. For example, cyberbullying is affecting many, mostly young, users of social media platforms, which without doubt can severely affect their mental health. Do we live at a time when the general level of mental health is particularly poor? And does this rise in mental health issues also manifest itself in the health status of fishers and anglers?

Clearly, many commercial fishers are exposed to dangerous environments that provide substantial physical risks (Woodhead et al., 2018). Yet, fishers and fisher-dependent communities have coped with highly stressful environments for millennia, and some fisher cultures describe the risk as something one “has signed up for” (King et al., 2021). There are of course also many positive aspects of being a fisher, such as the physical exercise demanded by the work and spending a lot of time outdoors, which is clearly healthy. Therefore, fostering experiences in green or blue spaces has been an important target of urban planning in all metropolitan areas of the world to improve the health of all citizens (Wolcha et al., 2014). Without dedicated research, it is not obvious what the net effects of

the perceived stressors and stress-relieving actions are in ultimately affecting the mental state of fishers.

We argue that mental well-being is a function of two factors. First, the social and personal norms that hold at a particular time and second the degree to which the stressful conditions are under the control of the individual. Looking back at historical periods, people were subjected to experiences and conditions that today would be regarded as unacceptable, probably causing immense stress. People had to cope with these conditions and to continue to function. For example, before modern public health measures were employed, child mortality was high so that few parents escaped the trauma of losing at least one of their children before they reached maturity. Travelling across the north Atlantic to America in the 18th century was a hazardous enterprise, which would have broken all modern health and safety rules and created considerable stress and fear in the traveller. And not so long ago, the use of physical power to sanction poor performance of school pupils was not uncommon in many countries. For a modern fisher, facing the uncertainties of meeting a dangerous oceanic front during a fishing trip can likely compete with these historic situations, but the difference is that the fisher has had the power to decide to expose himself or herself to the risk. Thus, one could expect that this type of risk will have a less significant long-term effect on an individual compared to situations that are imposed by external pressures.

In this issue, using a national level survey, King et al. (2021) present novel data on the mental health in the commercial fishing industry. Their article is based around a study of Australian commercial fishers although the broader implications are discussed as they are globally relevant, justifying publication of this research paper in *Fish and Fisheries*. King and colleagues divide activities that have the potential to lead to mental health problems into two categories. The first, labelled as traditional risks, includes long-standing elements of the industry, such as working in a dangerous environment, dealing with crew disputes and dissatisfactions or stresses caused by fluctuations of the market. Apart from the last, these are factors that are an acknowledged part of the job or can be expected to arise with a high probability. In some ways, these characteristics of fishing may be the reason why fishers enjoy the job; they gain satisfaction from being at sea, away from pressures of normal life and doing a job they have chosen to do in a well-defined environment that they have some control over. Similar issues will happen in other primary industries, for example in the agricultural sector.

The second category of stressors described by King et al. is labelled as modern uncertainties, which are substantially different as they emanate from outside sources and are less controllable by the fisher. Such pressures are rapid changes in quotas imposed by management agencies, unexpected restrictions on where fishing can take place and intensive conflicts with other stakeholders, such as conservationists. Modern uncertainties also involve eroding public support for the commercial fishing industry. In many instances, fishers are today regarded as the villains of overfishing as if they set out to destroy the resource on which they depend (Hart, 2021).

Unsurprisingly perhaps, but fortunately now backed up by data, the Australian study shows that modern uncertainties are of much greater concern to fishers than are traditional risks, and the evidence presented by King et al. shows that they cause greater mental stress. This also reflects how fishers have come to be regarded with suspicion by the general population in Western countries, a situation driven to some degree by the continued negative press around the overfishing crisis on the oceans, despite evidence of recent recovery of many historically overfished stocks (Hilborn et al., 2020). As pointed out by King et al., there is some interaction between the two stress factors such that the uncertain management environment can have an influence on the profitability of fishing, and this can further increase stress and cause mental health issues.

The focus of the paper by King et al. is mental health in commercial fishers who are earning a living through the activity. One of the modern uncertainties that is shown to cause stress is the interaction with recreational fisheries. For the commercial sector, recreational fishers can be regarded as taking "their" resource and contributing to overfishing in an unregulated fashion. In some more affluent countries, there is also the fear that the economic impact of recreational fisheries may favour allocation of fish away from the commercial to the recreational fishing sector. There are also strong differences in norms among many commercial and recreational fisheries, contributing to disputes over livelihood versus "fun" (Boucquey, 2017). From a mental health perspective, however, recreational fishing has large potential to improve the psychological health of practitioners. Similar to the case in commercial fisheries, there is very little research on this topic. However, the few papers that exist show that being outdoors during recreational fishing and experiencing the multiple adventure versus relaxation, dimensions inherent in recreational fishing, can have strong mental health benefits and is, for example, documented to decrease feelings of anger and depression (Pretty et al., 2006). As such, recreational fishing can be one vector by which the stress caused by the global COVID-19 pandemic could be compensated.

Research on mental health of commercial and recreational fishers is still in its infancy. Most studies rely on self-reports where measures of perceived stress and health are derived from answers to surveys. King et al. and Pretty et al. (2006) are no exceptions. For the future, linking self-reports with objective health data in epidemiological studies while controlling for confounding effects would provide a much needed step forward. Such research must control for personality-related differences as it is likely that

recreational and commercial fisheries attract a specific subset of practitioners. Of interest is the question whether the relationship of commercial and recreational fishing to water creates mental health benefits beyond those that one would expect from being active and/or relaxed in a comparative terrestrial or indoor environment. A recent study has revealed that the motives of recreational anglers are substantially different from those taking part in indoor and other forms of non-consumptive outdoor recreation (Morales-Nin et al., 2021). Motivations are the expected psychological benefits. Therefore, one can conclude that the recreational fishing experience provides a differently structured reward than do many other indoor and outdoor activities (Morales-Nin et al., 2021). Whether these motivational differences also translate into differential mental health outcomes is something we would like to have answers to.

We end with a bold hypothesis, with a hope it can inspire some research effort. Bernhardt and O'Connor (2021) revealed that high aquatic biodiversity enhances the nutritional benefits of capture fisheries to humans. It is also clear that restoring collapsed fisheries will increase abundance, catch rates and the size of fish, which will reduce the modern uncertainties commercial fishers face and find mentally stressful. A restored fishery has less need for rapid quota cuts, and conflicts with recreational fisheries will be reduced as fish abundance rebounds. Natural ecosystems, for example restored rivers, also produce sounds that are experienced to be particularly relaxing by humans (Cassandra et al., 2017). Therefore, achieving sustainable fisheries in globally restored, healthy environments will likely be the best recipe for good mental health of both commercial and recreational fisheries. These outcomes would also benefit the population as a whole.

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