

Factors influencing fish oil-based lipid emulsion effects in cholestatic infants

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Description

Fish disease research plays a crucial role in understanding and mitigating the health issues that impact aquatic life. By studying the causes, symptoms, and treatments of fish diseases, scientists strive to improve aquaculture practices, protect wild fish populations, and ensure food security. However, amidst the many benefits, it is essential to acknowledge the disadvantages associated with fish disease research. This article delves into the ethical and ecological concerns that arise from this field of study. One of the primary disadvantages of fish disease research lies in the ethical considerations surrounding animal welfare. Fish are sentient beings capable of experiencing pain and distress. The invasive procedures and experimental manipulations involved in research can cause harm and suffering to these animals. Often, fish are subjected to experimental infections, stressful environmental conditions, and invasive surgeries, leading to significant physical and psychological harm. While regulations and ethical guidelines exist to protect animal subjects, the welfare of fish may not receive the same level of attention and consideration as mammals and other vertebrates. This oversight can result in the mistreatment of fish and raise ethical concerns about the moral implications of fish disease research. Fish species vary greatly in their physiology, immune responses, and susceptibility to diseases. Consequently, research findings on a specific fish disease may not always be applicable to other species or even different populations within the same species. This limited generalizability hampers the effective management and treatment of diseases across various fish populations. Furthermore, experiments conducted on captive fish in laboratory settings may not accurately reflect the real-world conditions in which wild fish encounter diseases. Environmental factors, stressors, and genetic diversity, which influence disease dynamics, can differ significantly

between captive and wild fish populations. Thus, the findings derived from research may not fully translate to practical solutions for conserving wild fish populations or managing disease outbreaks in natural ecosystems. Fish disease research, particularly in the context of aquaculture, often focuses on maximizing productivity and profitability rather than ecological balance. The intensification of aquaculture practices to meet the growing demand for seafood can lead to overcrowded and stressful conditions for farmed fish. These conditions increase the susceptibility of fish to diseases and create an environment conducive to the rapid spread of pathogens. Furthermore, the use of antibiotics and chemicals to prevent or treat fish diseases in aquaculture can have detrimental effects on the environment. The discharge of these substances into surrounding water bodies can contribute to water pollution and harm non-target organisms, including other fish species, aquatic plants, and invertebrates. This disruption of natural ecosystems can have cascading effects on the overall biodiversity and ecological balance of aquatic environments. While fish disease research aims to improve the health and productivity of fish populations, there can be socioeconomic implications that disadvantage certain groups. Small-scale fishers and subsistence fishing communities may lack access to the knowledge, technology, and resources needed to prevent and manage fish diseases effectively. As a result, they may bear the brunt of disease outbreaks, which can devastate their livelihoods and food security. Moreover, fish disease research primarily focuses on economically valuable species or those utilized in aquaculture, such as salmon, trout, and tilapia. This prioritization neglects less commercially significant fish species, which may also play essential ecological roles in their respective ecosystems. This imbalance in research attention can hinder conservation efforts, biodiversity preservation, and the understanding of diseases affecting understudied fish species.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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