



Introduction and cultural study of Fishes-a review

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SUMMARY

Ichthyologists have identified about 32943 species of fish from Asia including 905 from Pakistan. In Pakistan, folk uses of animals have rarely been reported, particularly to alleviate human and veterinary problems. Fishes are important because these are used as; pollutant indicator, ethnomedicinally, educationally, commercially, culturally, and biological control. Fisheries have succeeded in discovering fast-growing fish that can adjust to the changing weather. Aquaculture grows very quickly and supplies the globe with high food quality especially protein. The fastest aquaculture expansion occurred in the aftermath of 1970 as a result of improved fish breeding technology and fish hatchery development. As compared to other animal food production industries, aquaculture has the highest yearly average increase of 8.8 percent a year since 1970. In all, the aquatic food production of fish, molluscs, crustaceans and other aquatic species was 3.9%, and 27.2% in 2001, 33% in 2004, respectively.

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INTRODUCTION

Fish are cold-blooded living taxa with fins and gills which adapt fully to the aquatic way of living. It is thought that fish were bred and studied for ages in the beginning with fundamental Chinese, Egyptians, and Greeks. Aquaculture is the cultivation of fish and other aquatic creatures. The live fish were classed by ichthyologist in three main categories: jaw-fish (aganatha), jaw fish (chondrichthyes), and osteichthyes. The two initial types are primitive, while 95% of current fish worldwide are “bony fish”. “Freshwater fishes” are imagined has the highest variety and shows whole warm water fishes taxa (Betancur-R *et al.*, 2013; Bibi *et al.*, 2018).

Freshwater fish are found in various places including reservoirs, streams, canals, lakes, rivers, and various land-locked waters. Fish live in aquatic habitats and have a wide range of morphologic and biological features (Walsh *et al.*, 2009; Altaf *et al.*, 2011a; Altaf *et al.*, 2011b; Altaf *et al.*, 2015). So far, around 32,500 fish species worldwide (Nelson, 2006), comprising about 58% marine, 41% freshwater and 1% diadrome species, have been noted worldwide (Helfrich *et al.*, 2019). Dulce is natural water, which comprises roughly 0.01 percent of the total volume on earth, in canals, rivers, reservoir lakes, streams, and other landscaped waters (Stiassny, 1996). “Freshwater fishes” exist in aquatic that cover “41%” of fishes and “20%” chordates

(Helfman *et al.*, 2009). Fish are famous for their demanding and appealing species. In folkloric medicine in many societies, different fish species are used (Alves and Rosa, 2007). Ichthyologists have identified about 32943 species of fish from Asia including 905 from Pakistan (Kottelat and Whitten, 1996; Mirza, 2003; Mirza, 2004). In Pakistan, folk uses of animals have rarely been reported, particularly to alleviate human and veterinary problems.

IMPORTANCE OF FISHES

Fishes are important because these are used as pollutant indicator, ethnomedicinally (Muhammad *et al.*, 2017a; Muhammad *et al.*, 2017c; Muhammad *et al.*, 2018), educationally (Iqbal *et al.*, 2017; Altaf, 2021), commercially (Hussain *et al.*, 2015), culturally (Muhammad *et al.*, 2017b; Altaf *et al.*, 2021), and biological control (Griffin and Knight, 2012). The number of fish species present is referred to as fish diversity (Ali, 2017b, a). Diversity is niche time stability dependent, which implies that if there are a lot of niches, there will be a lot of diversity (Iqbal *et al.*, 2017; Muhammad *et al.*, 2019a; Muhammad *et al.*, 2019b). Natural environments have a larger number of species, whereas anthropogenically somewhat changed landscapes have a higher diversity of species (Hussain *et al.*, 2017).

In many areas, fish constitute an essential component of human diet and often thought to have some nutritional advantages over the meat of land living animals (Byelashov *et al.*, 2015). Fish are significant as a source of protein (Haidar and Bashir, 2021), a source of fat (Ijaz and Faiz, 2021) and a source of valuable vitamins and minerals (Vladau *et al.*, 2008). The fish tissue includes several bioactive components that are helpful in human health, including peptides, fatty acids and enzymes (Jemil *et al.*, 2014; Altaf *et al.*, 2020; Altaf *et al.*, 2021).

FISH INDUSTRY

Fisheries have succeeded in discovering fast-growing fish that can adjust to the changing weather. Aquaculture grows very quickly and supplies the globe with high food quality especially protein. The fastest aquaculture expansion occurred in the aftermath of 1970 as a result of improved fish breeding technology and fish hatchery development. As compared to other animal food production industries, aquaculture has the highest yearly average increase of 8.8 percent a year since 1970 (FAO, 2007). In all, the aquatic food production of fish, molluscs, crustaceans and other aquatic species was 3.9%, and 27.2% in 2001, 33% in 2004, respectively (Maradun *et al.*, 2018).

CULTURAL AND MEDICINAL USES OF FISHES

The fauna is used for different purposes, including art, entertainment, cuisine, magic, healing, music, religion, instruments and trade. Almost 8,7% of chemicals are derived from animal parts and used as medicinal products (Alves *et al.*, 2012; Fernandes-Ferreira *et al.*, 2012; Ferreira *et al.*, 2012; Albuquerque *et al.*, 2013; Alves *et al.*, 2013a; Alves *et al.*, 2013b; Alves and Rosa, 2013; Alves *et al.*, 2013c; Alves *et al.*, 2013d; Altaf *et al.*, 2020). Plant species are used more than animal species in ethnomedicine. Rural people prefer to animal products such as medications and are

provided with crucial information on folk medicine compared to metropolitan regions (Alves and Souto, 2015).

Human beings depend on biodiversity and ecosystems' potential to provide many bio-sources and services that provide a healthy environment for human beings and natural people. Since ancient times plants and animal species have been used as a source of medicine and even today animal and plant pharmacopoeia are still a major part of world health care (Ferreira *et al.*, 2012; Albuquerque *et al.*, 2013; Alves *et al.*, 2013a; Alves *et al.*, 2013b; Alves and Rosa, 2013; Alves *et al.*, 2013c; Alves *et al.*, 2013d). More than half of current pharmaceuticals in the world come from biological resources that support the modern and traditional pharmaceutical industries. All traditional medical systems are rooted in folk medicine and home cures. Whereas some of those initial medicines were improved, revised and improved by educated medical men's practices. Traditionally, people used different recipes from generation to generation. Some were recorded, while some did not (Ferreira *et al.*, 2016; Alves *et al.*, 2017; Paula *et al.*, 2017a; Paula *et al.*, 2017b; Van Vliet *et al.*, 2017; Alves *et al.*, 2018). Ethnic folk medicine is used in many urban, semi-urban and further remote localities across the globe (Pieroni *et al.*, 2002).

Fauna, like plants, is used in folklore as well as contemporary medicine. The current study was designed to document the folkloric uses of freshwater fish species among the people living along the Jhelum River in Pakistan's Punjab state. Fish folklore was studied using a variety of indicators. While *Labeo rohita*, *Channa punctata*, *Channa marulius*, *Bagarius bagarius*, *Oreochromis niloticus*, *Wallago attu* and *Mastacembelus armatus*, have "zero" similarity index, *Oreochromis niloticus*, *Channa punctata*, *Channa marulius*, *Labeo rohita* and *Bagarius bagarius* (Altaf *et al.*, 2021).

Fish is used in folklore as well as contemporary medicine. The purpose of this study was to document the folkloric applications of freshwater fish species among the people living along the River Jhelum in Punjab, Pakistan. *Labeo rohita*, *Channa marulius*, *Channa punctata*, *Oreochromis niloticus*, *Bagarius bagarius*, *Mastacembelus armatus*, and *Wallago attu* all have a "zero" similarity value, but *Channa marulius*, *Labeo rohita*, *Oreochromis niloticus*, *Channa punctata*, and *Bagarius bagarius*. The five most frequent species with RPL = 1.0 were *Labeo rohita*, *Cyprinus carpio*, *Channa punctata*, *Wallago attu* and *Oreochromis niloticus*. About half of the species studied had a "zero" similarity value, indicating that native people have significant ties to fish species, particularly for therapeutic purposes. Comprehensive study on the bioactivities of the fish species with the greatest use reports might significantly aid the invention of novel medications based on fish fauna (Altaf *et al.*, 2020).

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