

Editorial

Cooked seafood causing illnesses? A potential public health concern

Irrespective of the geography, ethnicity, culture, economy and many other probable facts, seafood of many kinds are considered delicacies around the world. Indeed, so do the freshwater fish and shellfish. Generally, the fish or seafood is often cooked before consumption, though, in some countries like Japan and Korea, the raw fish owns a significant portion in their meals with high popularity for food items like sushi and sashimi. Yet, as a tropical south Asian country, Sri Lankans prefer some marine fish like tuna, shrimp, squids and some freshwater fishes like tilapia, carp to numerous other seafood varieties where they were eaten in cooked dishes.

However, plenty of previous studies emphasized the seafood as a source for a range of foodborne pathogens (Illanchezian et al., 2010; Lee et al., 2008). Among them, the bacteria such as *Vibrio* spp., *Aeromonas* spp., *Listeria* spp. and *Streptococcus* spp. and *Salmonella* spp. play major roles as aetiological agents. As frequently reported pathogens, vibrios give a spectrum of clinical conditions including cholera, septicemia and gastroenteritis. Especially people with underlying complications like HIV, hemochromatosis, liver diseases and diabetes are susceptible to systemic infections that produces fever, general discomfort and secondary fluid-filled lesions on the extremities (Daniels and Shafaie, 2000). *Aeromonas* is also a concern in this regard which can give complications like gastroenteritis, wound and soft tissue infections, muscle infections, septicemia and skin diseases (Janda and Abbott, 2010). Apart from these, there are multitudes of diseases and illnesses arise upon foodborne infections with other bacterial aetiologies.

Humans get infected by these bacteria through contact with infected fish while handling them in natural waters, aquaculture settings, markets and even in preparing dishes. More importantly, by consumption of infected fish or related products or food contaminated with water or other constituents of water environment is vital for these bacterial infections (Novotny et al., 2004). Although above infections become hardly possible with the

consumption of cooked fish or seafood, the studies pointed out the prospective health risk of consuming cooked seafood. Notably, ready-to-eat shrimp, other shellfish, salmon and seafood salads were carrying numerous pathogenic bacteria which can cause food-borne infections in consumers (Duran and Marshall, 2005; Gambarin et al., 2012; Zhang et al., 2016). More importantly, the cooked seafood has been detected to harbor pathogenic bacteria such as *Vibrio* spp. (Zhang et al., 2016). In addition, the undercooked fish or seafood were also reported in previous studies which highlighted the probability of getting infections like *Vibriosis* (Odeyemi, 2016).

Moreover, histamine poisoning is a vital cause of illness associated with seafood. Histamine is formed in fish spoiled by certain bacteria which are capable of decarboxylating the histidine, an amino acid. The fish are non-toxic when caught, but increase in histamine content as bacterial numbers increase in them. More importantly, fish containing high levels of histamine may not appear as spoiled in their outward appearance, besides cooking does not destroy the histamine (Lehane and Olley, 2000). A number of symptoms such as rash, vomiting, facial flushing, diarrhea, dyspnea, headache, hypotension, metallic or peppery taste in mouth usually occurs within a few minutes after ingestion of the implicated food, and the symptoms can last from a few hours to days (Becker et al., 2001).

Meanwhile, there had been several studies assessing the fish and associated products which signified above food-borne pathogens in fish and related products of Sri Lanka. *Escherichia coli*, *Salmonella* spp., and *Listeria monocytogenes* have been recovered from fish samples collected from Negombo and Colombo suburbs (Ariyawansa et al., 2016). Also, both cultured and wild-caught shrimp has been noted for the prevalence of *Salmonella* spp. which is a well-known pathogen causing intestinal disorders (Kamalika et al., 2008).

In Sri Lanka, local hotels or restaurants, street food stalls or mobile sellers are vending fried or cooked seafood or other fish, but the legislation, rules and

regulations to control the quality of such foods remains scarce. Especially, although the food items are cooked, there is no specified criteria to confirm whether they are properly cooked or not. On the other hand, given their pathogenicity, virulence and perhaps the antibiotic resistance, these food-borne bacteria own an alarming significance towards the bacterial food poisoning.

Reference

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