

Editorial note

Indonesia is an archipelago with a maritime area larger than its landmass. The sea comprises approximately two thirds of the whole country, along with an estimated 17.500 islands and 81.000 km of coast line. This makes Indonesia the world's largest maritime continent.

The sea and coastal areas are two of the biggest potential natural resources that Indonesia has. It is important to optimize utilization without destroying their environmental quality and conservation. In order for these natural resources to be utilized for progress and prosperity, there needs to be a well-coordinated integrated management, involving the government, the private sector and the public.

There have been many researches on the sea as a natural resource that may provide us essentials, such as: medicinal and pharmacological raw materials, nutritious food resources, and the wisdom to heal certain diseases.

Those who live by the sea have inherited the wisdom to heal and medicate evolving from their long standing observations and interactions with the marine environment. The sea contains many special natural resources, from its flora, fauna, to its minerals. These can be invaluable nutritional sources, and essential raw materials for medicines. The utilization of these natural resources must be augmented and given special attention.

Populations living in the marine areas are quite vast. Some live as sailors, fishermen and divers. Nowadays, diving as a hobby has very much progressed. Marine tourism is being vastly promoted to entice local and international tourists to come and see the natural underwater beauty of Indonesia. This has also become an important source of income for the country.

Other than that, certain industries are also operating by the sea, above or under it, such as off-shore oil drilling, and pearl-farming.

Those who live by the sea and depend on the marine environment for their livelihoods are vulnerable to the risks of interacting with the sea. They may experience physical organic dysfunctions or specific diseases that may be temporary, permanent or even fatal. The risks

that these people are exposed to are certainly different that the risks of those who dwell on land.

Many of the diseases and medical emergencies involved in the risks of marine life have not been fully revealed, understood and managed. We have also not fully understood the management of the risks of marine life and its consequences. Many of the researches performed in the past were incidental and performed from individualistic perspectives, such as physiological, pharmacological, parasitological, ophthalmological, otorhinolaryngological, dermatological and neurological.

There are certain maritime risk factors that may inflict the population of marine/coastal dwellers. These risk factors may be viewed from many perspectives, they are: environmental factor, human factor (knowledge, awareness, attitude, culture, habit, and social aspect), infectious diseases, and the development of marine technology.

Diseases related to the marine environment, or marine diseases for short, are comprised of specific diseases that usually occur in the marine/coastal populations, and non-specific diseases that may inflict other populations as well but are commonly found in the marine/coastal population.

Medical disturbances that might inflict those who live in the marine environment are, among others: organic dysfunctions or specific diseases arising from traditional diving or modern diving using special equipment, infections, allergic reactions, or toxicity caused by marine biological creatures, and specific diseases afflicting those who live in the marine and coastal environment.

Traditional, as well as modern divers are repeatedly exposed for long periods of time to high atmospheric pressures in the sea depths. This may cause disturbances in body functions and organs. In certain cases there may be accidents or medical emergencies caused by high atmospheric pressures. These medical emergencies require prompt and correct medical treatment by qualified medical and paramedical personnel who have the knowledge and skills to manage marine emergencies.

In Indonesia we have developed hyperbaric chamber facilities (high pressured chambers) that may be used among others to treat emergencies in marine medicine and as an alternative to treat non-marine medical conditions (such as gangrene, cardiovascular diseases, respiratory diseases) as well as for general fitness and beauty.

The populations who are vulnerable to the risks of interacting with the marine environment need to be given proper education on marine medicine. They are: Inhabitants of the coasts and harbors, traditional fishermen, modern electronically equipped fishermen, potential boat passengers, harbor workers, those who work on boats; inhabitants of remote islands, the general inhabitants and light house guards; Communities above the sea: sea ferry passengers, graving dock makers, workers on off-shore rigs, etc; Communities working under water: workers of pearl farms, underwater archeologists, workers of companies that build installations under the sea or on the sea bed, makers of underwater tunnels, sport divers, those who work in marine tourism, SAR team members, hydro and oceanographic researchers, military divers, etc.

The issues and concerns circulating in the populations that interact with the marine environment, as well as the diseases related to marine life, their management (traditional or modern) and use of technology in

relation to the sea (hyperbaric chamber) are challenges and research fields that must be anticipated by the science of community medicine. Indonesia needs to have solid knowledge in the field of marine medicine to be able to apply correct medical management through individual or group approach. The science of marine medicine is defined as the science of medicine with the sea and coastal areas as fields to develop scientific knowledge in research, application of the services of medical science to manage issues relating to the health of the population of those who interact with the marine environment involving all disciplines of the medical science. As the executioner of these services and as the patrons of the science of marine medicine, the Marine Medical Specialist Education Program needs to be put into realization. Through the teaching-learning process, students may be able to: determine risk factors that are manifest as physical dysfunctions, diseases, and accidents related to marine environments; manage marine medical problems individually and in a group; develop the science and technology of marine medicine; develop a professional attitude in the profession of marine medicine; act appropriately according to the ethics and laws of Indonesia in performing medical service and marine health.

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