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EDITORIAL OPEN ACCESS

A focus on the epidemiological studies of infectious parasitic diseases

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Infectious diseases caused by bacteria, virusesor parasites constituted serious health problems in the world. Infectious diseases can be transmitted directly from person to person or indirectly via a vector or contaminated food or water. Parasitic diseases are known to plague billions of people and killing millions annually [1]. According to WHO fact sheet on infectious diseases, many parasites are listed among the causative agents of infectious diseases [2]. For example, soil-transmitted helminth infections such as *Ancylostoma duodenale*, infect approximately 2 billion people worldwide, food borne trematodiases such as *Clonorchis sinensis* and *Fasciola* sp. infect at least 56 million people worldwide, Vector-borne diseases affect hundreds millions of people worldwide. American trypanosomiasis infect about 7 million people worldwide, mostly in Latin America; Over 120 million people are infected with lymphatic filariasis; Malaria caused an estimated 584,000 deaths, mostly among African children. In additions, schistosomiasis is estimated to affect 249 million people worldwide [3].

In this regards, one of the most helpful tools for establishment of effective prevention and control programs of such diseases is studying their epidemiological profile. Generally, there are many definitions for epidemiology which may be varied according to research needs. For example, epidemiology is the study of disease in populations [4]. Other definition is the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to control of health problems [5]. The terminology used in epidemiology of infectious diseases was evolved from a set of scientific fields that studied their agents, causes and determinants, the dynamics of transmission of these agents, and their control [6]. From the parasitological point of view, epidemiology is the study of infectious disease at a population to characterize the distribution patterns and prevalence of the diseases and factor affecting these patterns [7]. There are many epidemiological issues such as incubation period, and resistance of host that developed for studying of infectious diseases. Some of these issues were applied later for studying noninfectious diseases [8]. The occurrence/prevalence of infections in a population are affected mainly by the interaction of different involved factors or determinants. Hence, studying of such factors or determinants may be helpful in reducing the frequency of a disease in a population.

Doubtless, human behavior plays a key role in characterization of the epidemiological profile of the parasitic diseases. Human population growth, socioeconomic changes, lacks of sanitation, eating habits, personal and environmental hygiene, poverty, inadequate health services, intimate association with their animals, etc. have varied effects on the disease emergence and burden [9–11]. According to report of institute of medicine forum on microbial threats in 2008 [12], the host ranges of many vector borne diseases are expanding due to the anthropogenic factors. In addition, it has been reported that sex and father's occupation were the limiting factors for the infection with urinary *schistosomiasis* in Ethiopia [13]. They found that males were more susceptible to infection with urinary schistosomiasis than females and they referred that to the socio-cultural factors where males are mostly engaged in water-contact activities like swimming. In additions, host condition such as age and sex may affect the establishment of parasites and the prevalence of infection according to many publications in this filed.

For understanding patterns of health and disease, focusing on the personal behaviors, specific risks and characteristics of the social and physical environments that shape human experience for studying the public health are required [14]. Starting from the end of the 20th century, the need to give greater emphasis to the

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ecological factors for studying human health and disease was growing [11]. In this regards, environmental factors such as humidity and temperature are limiting factors for the epidemiological profile of the parasitic diseases and are known to influence the transmission of parasites. For example, parasites with free-living stages are markedly influenced by conditions as temperature while, parasites without free living stages are more independent of environmental factors [15].

In 2008, in an article entitled "towards a global epidemiological database for helminth infections" [16] Heino mentioned that "several countries have no ongoing programs to collect information on infection prevalence". Unfortunately, the same situation still exists for all parasitic diseases in many countries worldwide. Although there are a lot of publications studying the factors affecting the epidemiological profile of infectious diseases, no real start to establish the required database. Consequently, the organization involved in this filed must focus on the establishing of database in each country for parasitic diseases.

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Conflict of Interest

Authors declare no conflict of interest.

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