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Editorial

Advances required for epidemiological studies.

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Epidemiology has played and still plays a crucial role in the development of health care practices and preventive measures. Considering its importance, the methods of epidemiological research and statistical analysis have evolved significantly, incorporating methodologies progressively more complex and adequate to the various explanations of the health-disease process.

From the biological knowledge, epidemiology has developed toward identifying the etiological agents responsible for the development of several diseases, especially infectious ones.[1] At this time, the Henle-Koch postulates and Hill's causality criteria, as well as Rothman's sufficient-component cause model, and Rubin Causal Model played an essential role in the development of this science.

With the advances in knowledge on the multicausality of the health-disease process, especially regarding chronic diseases, the search for a single etiological factor became insufficient to explain the development of diseases. The advances in epidemiology at this point were supported by the formalization of causal diagrams and the use of logistic regression statistical analyses.[1,3]

Understanding the social determinants of the health-disease process allowed incorporating social information on individuals into the epidemiological studies, such as social status, income, level of education, lifestyle and health habits. Major steps have been taken in oral health with the conceptual models developed by Holst *et al.,*[4] on caries determinants in populations, and by Bastos *et al.,*[5] on the social determinants of odontalgia.

Despite these advances in epidemiological studies and the adequacy to forms of understanding the health-disease process, it is verified that epidemiological research is still restricted to proximal factors (individual and behavioral characteristics, for example) and intermediate factors (access to basic care and community support networks, for example).[6]

For a new advance in epidemiology, progress is still required to incorporate more distal social determinants to the health-disease process, with economic, social, and environmental aspects in regional and national scopes, as well as supranational determinants such as globalization. This new advance would allow the social and economic promotion to impact the improvement of several health conditions. However, for this to be achieved, it seems necessary to break the neutrality and the rigor of the scientific analysis, incorporating new knowledge from the anthropology, sociology, psychology, administration, and economy in order to explain the relationship between social and economic policies and collective health.

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