

## Is the Increasing Trend in Medical Research in Response to the Existence of a Biological and Evolutionary Desire for Therapy?

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### Abstract

Medical research is growing fast, and clinical trials related to diverse aspects of medical science are growing at a considerable pace. But therapy should also be considered as a conscious behavior which can be seen in other animals including gorillas, chimpanzees, and bonobos. So, attention to medical research may not be an inherently cultural or even ethical issue and may reflect a kind of biological tendency of organisms including Homo sapiens to perform therapeutic actions.

### Letter to Editor:

Medical research is growing fast, and hundreds of articles are published daily addressing various aspects of medical science. Indeed, evidence suggests that the clinical trials related to diverse aspects of medical science are growing at a considerable pace. At first glance, the reason for the observed emergent medical research is crystal-clear: human endeavor to survive and, at the same time, to provide better life conditions. That is why highly advanced medical systems have been developed. Universities have been established to train adept specialists, who then enter the medical centers to improve the public health and medical conditions of other individuals using the provided apparatuses and equipment. It is evident that such an approach has contributed to improvement of both the health conditions of the community and the global health indicators. The record of maternal and infant mortality, for instance, has improved considerably [1,2]. Furthermore, a significant increase in human life expectancy can be acknowledged [3].

Medicine has long been one of the most remarkable issues in human cultures and has always been emphasized. Sacred books such as Avesta, dating to perhaps three thousand years ago, have accentuated the prominence of medicine and its types [4]. It seems that one of the issues grown along with human cultures has been promotion of the medical level and patients' treatment conditions. This trend has been

### What is medicine?

The Oxford Dictionary defines the term "Medicine" as follows:

“The science or practice of the diagnosis, treatment, and prevention of disease” [5].

According to the presented definition, medicine is considered as a science or practice and is a set of actions performed by humans. This

continuing to grow with greater intensity and in an ascending manner over recent years, whose results can be

perceived considering the number of hospitals, medical centers and universities, research, and published articles.

The recognized due attention and huge investments in this respect suggest that medicine is an imperative part of human culture; humanbeings, along with their cultural promotion, have upgraded their medical knowledge. Meanwhile, the question of “what is the exact nature of medical research in terms of ontology?” has not received the attention it deserves. Are medical research and use of its various aspects completely a cultural issue and are they dependent on humanbeings? Is it possible to claim that attention devoted to medical research is related to the human's biological nature? And, if the need for medical research is biological and evolutionary, can its signs be observed in other living organisms? Then, in this case, is it possible that the modification and redefinition of the ontology of medicine and the necessity of research in this respect change the nature of the relationship between medicine and human beings?

First and foremost, we must have a clear definition of medical science.

means that the human aspect in medicine is very significant. However, what if we eliminate the aspects of human action? How can we define the word “medicine”? In that case, medicine will be defined as “the diagnosis, treatment, and prevention of disease” without any reference to science or practice to perform it.

When we eliminate the human aspect in the definition of "medicine",

we encounter a definition that occurs every day in our body. Our immune system is constantly seeking to discover internal and external pathogens and tries to eliminate them with great power, in response to which we stay healthy, and in turn various pathogens including cancer cells or germs and viruses cannot make us sick.

Making sense of the mentioned issues- recognition of pathogens and their treatments when it comes to epistemology- leads to a science we call medicine.

However, it is fascinating to know that similar activities are also practiced in other organisms considering the mentioned definition of medicine. Some researchers attribute the initiation of herbal medicine to organisms such as gorillas, chimpanzees, and bonobos, and it is conjectured that human have discerned the prominence of medicinal plants by observing these organisms. Many primates have been seen to prick and then discard certain leaves. The mentioned behavior suggests that these leaves were not used for nourishing, but for therapeutic purposes as an antiparasite agent [6,7].

Definitely, the list of these animals treating their disease using plants is increasing. Further, it has been reported that such plants have been used not only for treatment purposes, but also to perform preventive actions in areas where the risk of infection is high. It has also been observed that some of these animals improve and treat their fellow members. An outstanding example is wood ants which virtually create an antimicrobial atmosphere in their nest and colony by transferring antimicrobial resin to their nests [8].

In addition to recognition of the therapeutic aspects in primates as well as birds and ants, new evidence of therapeutic symptoms has also been acknowledged in other Homo species. The significance of this new finding is that it represents a kind of evolution in treatment of

primates toward Homo species and ultimately toward human beings. New studies have revealed that Neanderthals have had a medical care system supporting the survival of their fellow beings against serious injuries and helping them to continue their life in the high-risk environments they lived [9]. What has been observed in the multifarious behaviors of Neanderthal is far beyond medical behaviors of other organisms and can represent a kind of medical culture in their communities.

Although many pieces of this story are not available or have not been studied, the evolutionary perspective of the therapeutic issues can be detected in the history of life. Indeed, it seems that therapy is not only the action of wise human beings but is an issue taking place among other organisms from different levels of life. However, such a claim requires extensive research to be considered in future studies. Until recently, conscious behaviors were considered to be limited to Homo sapiens; however, at present we know that many living creatures like birds, dolphins, and primates display conscious behaviors as well [10]. Therapy should also be considered as a conscious behavior which is not limited to Homo sapiens. Possibly, contribution of therapeutics to the survival of living organisms has led to its maintenance, intensification, and expansion to various organisms including Homo sapiens. Hence, other conclusions can be drawn. Although it is true that the intricate cultural behavior of humans has been a kind of attempt to preserve their species at all costs and as a result much attention has been devoted to medical research, attention to medical research may not be an inherently cultural or even ethical issue and may reflect a kind of biological tendency of organisms including Homo sapiens to perform therapeutic actions.

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