



# The research and researcher scenario in modern times

## *O cenário da pesquisa e o pesquisador na modernidade*

Most knowledge in the history of human research is due to studies carried out on humans. However, such research is replete with cases of the violation of human dignity and research integrity.

Such research is a rapidly growing activity. In modern times, it has changed from being an amateur activity to one undertaken by academia and industry. However, several concerns have arisen related to the interests of sponsors, particularly in terms of the pharmaceutical industry, which seeks to shorten the path towards profit as it invests extensively. Moreover, modernity has seen enormous changes with regard to the number of people in the world and conditions of personal and social development. This rapid growth results in stress and tension, ultimately breaking the links that unite society. It is important to evaluate how science has affected people's lives and how such changes have been perceived<sup>1</sup>.

Studies carried out in the developed world, in particular in the United States (US), show that the general public perceives science in a positive light, despite knowing little about scientific details regarding the complex patterns of organization worldwide, the dynamics of science and technology, innovations and discoveries, training and management, and the connections and impact that science has with and on society<sup>1,2</sup>.

Findings presented at the *World Conference on Science*<sup>1,3</sup> show that the global average spending on research and development in science, in terms of a percentage of gross domestic product for each region, is 1.1%. The US devotes 2.5%, Japan and newly industrialized countries 2.3%, Western Europe 1.8%, and Latin America 0.3%.

US spending on research and development represents 37.9% of the total expenditure worldwide, while Latin America contributes 1.9%. An investigation carried out at the *Battelle Memorial Institute* revealed the proportions in which each economic sector employed researchers worldwide: universities employed 40% of all researchers, industry 39% (of whom 25% worked in multinational companies), research institutions 14%, and government agencies 7%. Regarding field of work, 54% of researchers work in applied research, 23% in basic research, 12% in primary development, and 12% in consulting and other supporting functions. When asked about the greatest current challenge to research and development activities worldwide, most researchers responded in terms of the limitations of internal and external funding<sup>1,4</sup>.

Efforts of science and technology in developing countries are directed toward solving health-related problems, including food and nutrition, shelter, etc.; elements of infrastructure, such as energy, communications, and transport; and the characteristics and resources of the country<sup>1</sup>.

The definition of the research field is influenced by several factors, including the interests of a researcher and collective interests. Regarding the researcher, several factors interfere with research quality, such as the availability of time. This is due to the fact a researcher has various jobs, all influenced by research activities, financial support, social inclusion, employment, socioeconomic conditions, and membership of a specific scientific community<sup>4</sup>.

In Brazil, 90% of the scientists are employed in higher education institutions and are responsible for almost all scientific productivity. Brazil enjoys parallel growth of graduate studies and science<sup>4</sup>. Brazilian science has grown over the years due to several reasons, mainly the growth of the pharmaceutical industry and investigations on new drugs, as well as biotechnology.

As we enter the third millennium, the intention is for development to focus on "quality" of life rather than "quantity" of life. This is the challenge to our civilization, culture, and science<sup>1</sup>.

## REFERENCES

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