



*Valores, propósitos y beneficios de la investigación universitaria:
las perspectivas de la Salud pública*

Values, goals and benefits of university research: The Public health perspective

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Abstract

Public health as a healthcare system discipline is supported by the evidence-based biomedical research. Scientific discoveries or improvements are made by experiments and clinical trials with different research designs, and are analyzed by complex methods of statistical assessment. Research conducted at university is of particular interest, as it is a place with a wide selection of laboratorial and/or clinical facilities and a research staff. University research aims not only to accumulate new data but also to disseminate it among students by teaching. As the university community is based on the creation and extension of certain values admitted by all its members, university research brings into life new perspectives for research and finds the ways to benefit all members of both biomedical and non-biomedical society. Values as the main characteristics of modern civic society are important both from research point of view and of its perspectives. Thus, public health research may be transformed into an effective tool to rethink the assessment of old values and a formation of new ones.

Keywords: values, university research, Public health.

Resumen

La Salud Pública es una disciplina apoyada por la investigación basada en evidencia. El descubrimiento científico o el perfeccionamiento de los descubrimientos anteriores están realizados mediante experimentos e investigaciones clínicas y analizados utilizando los métodos complejos de la evaluación estadística. La investigación universitaria es un fenómeno muy interesante porque une en sí tanto los laboratorios y departamentos clínicos como el personal investigador. El propósito de la investigación universitaria no es sólo la creación del nuevo conocimiento sino su difusión. Los valores que forman parte de la investigación universitaria son las características básicas de la sociedad moderna. La investigación en la Salud Pública puede facilitar el entendimiento de los viejos valores y la formación de los nuevos.

Palabras clave: valores, investigación universitaria, Salud Pública.

1. Introduction

THE PURPOSE OF THIS PAPER is to emphasize the role of value-based university research in Public health. Consequently, the argument will consist of three steps: 1. A general understanding of values and research as one of the main values of modern university life. 2. An analysis of the relevance of main goals of university research. 3. A role of university and values in Public health research. 4. And a discussion of the benefits of university research in Public health.

2. Values: definition and theories

VALUES ARE UNIVERSAL CHARACTERISTICS of cultures shared by society in concrete social and time context. Being structured in a universal way in different cultural groups, values may carry conflictive or compatible features, crucial for explaining social composition, orientation and change (Weber, 1958; Durkheim, 1964). The theories of Triandis, 1995 (which demonstrates that the dimensions of individualism and collectivism should be combined with the equality or inequality in social relations, Inglehart, 1998 (considering that cultural change may be explained taking into consideration the dimensions of Materialism-Postmaterialism and Modernization-Postmodernization), Hofstede, 1984 (the theory of the structure of values taking into consideration four main factors (power distance, avoiding uncertainty, masculinity/femininity and individualism/collectivism), and Schwartz Theory of Basic Values, 1992 (which unites six main features (values are beliefs; values refer to desirable goals; values transcend specific actions and situations; values serve as standards or criteria; values are ordered by importance; the *relative* importance of multiple values guides actions)), are recognized today as main approaches for value's studies.

Research is one of the main values of modern university life. Carrying the function of production and dissemination of knowledge, research is converted into an important tool for professional self-expression. Different branches of sciences, and especially biomedical sciences, are wholly based on the accumulation of new research data. It is admitted that: "Evidence Based Medicine (or health care) sees clinical expertise as the ability to integrate patient circumstances, research evidence, and patient preferences to help patients arrive at optimal diagnostic and treatment decisions." (Guyatt, Drummond, 2002).

3. Research at university: main goals

HIGHER EDUCATION IS COMPOSED by two main components: teaching and research. The Bologna Process, Berlin Communiqué (2003) and London Communiqué (2007), among other special documents, admit the role of knowledge for social and human growth; this includes the necessity of economic development for social cohesion, which is based on individual developments of society members. In the framework of the above-mentioned, universities play an important role, connecting professional studies with everyday life. Teaching and research are based on contemporary social, political, economic, demographic matters and other public health components which determine human development in the concrete time context. Social values are formed inside the universities and are disseminated outside of them among different layers of society, and contributing both to the continuous education of its members and to prevention of diseases. Thus, university is one of the most important places for building a healthy society, as well as for facilitating the development of healthcare systems and for elaborating/implementing public health projects. From this point forward, university acquires the social responsibility, based on the ethical and community principles, forming responsible and tolerant citizens (Benvenuto, 2019).

In an interesting article discussing the role of science, knowledge and society in university research, Armando Alcántara Santuario reviews the university as the home of science (Alcántara, 2000). Based on the publications of Daniel Wolfe, Burton Clark, Simon Schwartzman, Teresa Pacheco and Philip Altbach,¹ the researcher describes the whole history of hosting science by universities in different countries, including the United States, UK and Germany, from the late XIX century continuing with further inclusion of science into the higher educational system, and discussing the different historical experiences of establishing research centers inside or outside of universities (forming part of research institutions or centers as parts of Academies of Sciences, as it was in Soviet Union). In parallel with these reforms, 50 major universities were labeled as “research universities” in the United

¹ Wolfe, Daniel (1972), *The home of science: the role of the university*, New York: McGraw-Hill; Clark, Burton R. (1983/1986), *The higher education system: academic organization in cross-national perspective*, Berkeley: University of California Press; Clark, Burton R. (1984/1987), *Perspectives on higher education: eight disciplinary and comparative views*, Berkeley: University of California Press; Schwartzman, Simon (1984), “The focus on scientific activity”, in Burton Clark (ed.), *Perspectives on higher education: eight disciplinary and comparative views*, Berkeley: University of California Press; Schwartzman, Simon (1991), *A space for science: the development of the scientific community in Brazil*, University Park, PA: The Pennsylvania State University Press; Pacheco, Teresa (1994), *La organización de la actividad científica en la UNAM*, México, CFSU-UNAM/Miguel Ángel Porrúa; Altbach, Philip et al. (1989), *Scientific development and higher education: the case of newly industrializing nations*, New York: Praeger.

States, where scientific investigation became of primary importance. Another interesting historical example is the model of Latin American universities, providing high level of autonomy, as well as independence and mobility facilities for research staff. The situation described in four countries of recent industrialization, such as Malaysia, Singapore, Republic of Korea and Taiwan is impressive, demonstrating the existence of modern scientific infrastructure at universities.

Different approaches of positioning the science inside or outside of higher educational system was preceded by critical revision of the nature of science and of the mission of university. Different authors, educators, philosophers and public figures have discussed the role both of science and university in the process of creation of values in modern society. American philosopher and educational reformer John Dewey revised the different levels of system of education, paying special attention to the nature of science. According to Dewey, science is the knowledge derived from observation, reflection and testing “which are deliberately adopted to secure a settled, assured subject matter.” (Dewey, 1916: 227). Science revises current understandings and knowledge, and points out what is mistaken. It is a sort of knowledge which represents the controlling factor of activity producing changes in the environment, thus representing the last stage of the knowledge.

The topic of science as of part of the university system was also analyzed outside of the United States and in different cultural epistemes, among which Spanish and Russian experiences are very interesting. Noteworthy is the fact that two famous scientists which contributed enormously to our understanding of this difficult subject in the above-mentioned countries, José Ortega y Gasset and Vladimir Vernadsky, had expressed almost the same ideas about the mission of university. Although Ortega represented humanities and Vernadsky - natural sciences, both viewed university as one of the main places for research. Years will pass and Spain will be converted in the country with high level of university research,² meanwhile scientific work in Russia will be conducted in the research institutions outside the universities, forming part of Soviet Academy of Sciences. But the very starting point of the reception of science as of integral part of university life was similar in both countries. In particular, discussing academic life, Vladimir Vernadsky distinguished three main goals of the university: first was teaching, the dissemination of knowledge cultivated by human mind and the elaboration of scientific methods of work and thought; second was considering university as the place for scientific

² If we observe the development of philosophical thought in modern Spain, we shall witness the brilliant continuation and elaboration of Ortega's ideas by contemporary researchers, published in journals like *Revista del Hispanismo Filosófico* (which reflects the prolific work of the members of the Asociación del Hispanismo Filosófico), as well as the publication of *Actas del Seminario de Historia de la Filosofía Española* (University of Salamanca),

inquiry, representing the center for conducting an independent research; and third, possessing the mission of educating the societies and people, as well as updating the knowledge received during student years and sharing new knowledge and novel ways of working and thinking (Vernadsky, 2002).

Ortega y Gasset described the mission of higher education as: a) teaching of intellectual professions, and b) scientific investigation and formation of future researchers. As the human life is chaotic and full of confusion, man tries to survive and seeks for the ways out in order not to be lost, in other words, looks for clear and valid ideas about the Universe and positive convictions about things and the surrounding world that can be defined as a culture. University, as Ortega put it, is the place where individual's contemporary culture or system of values is taught. Thus, to the listed above, Ortega added the third component and defined the main functions of the higher education as follows: a) transmission of culture, b) teaching of professions, and c) scientific investigation and the education of new generation of researchers (Ortega, 1983).

With time, the role of scientific research at universities was increased. The *Carnegie Classification of Institutions of Higher Learning*³ draws a distinction between *Research Universities* and *Teaching Colleges*. Research conditions the co-existence of different economic, technical, ideological and cultural perspectives inside the university, conditioning the desired use and interpretation of the accumulated research data. Independent research is combined with the estimated and accepted set of values, which form the political and ideological narrative of concrete societies. Thus, research forms one of the main tools for understanding national reality, detecting governmental and professional interests, such as the creation of *National Endowment for the Humanities* (with the special interest in the history of America), *National Endowment for the Arts*, and *National Science Foundation* (Britt Arredondo, 2013).

4. Public health research: university and values

HEALTH INVESTIGATION IS AN IMPORTANT tool to understand, predict and improve population health. According to the 2014-2020 European Union strategy,⁴ re-

Daimon. Revista Internacional de Filosofía (University of Murcia), *Pensamiento. Revista de Investigación e Información Filosófica* (Comillas Pontifical University), *Revista de Filosofía* (Complutense University of Madrid) or *Bajo Palabra* (The Autonomous University of Madrid), to mention just a few.

³ <https://carnegieclassifications.iu.edu/>

⁴ European Commission. *Europe 2020: A strategy for smart, sustainable and inclusive growth*. Brussels, 2010. COM (2010) 2020 final. Cited in: McCarthy M, Zeegers Paget D. Public health innovation and research in Europe: introduction to the supplement. *Eur J Public Health* 2013; (Suppl. 2): 2013, 2-5.

search plays a crucial role into economic and social development via innovation (David, Sizer, 2003; Núñez Delicado, 2015). Indeed, billions of dollars have been allocated for medical research facilitating the treatment and prevention of different nosology. Medical universities are among the main contributors to the accumulation and dissemination of theoretical and clinical knowledge (Their, 1992; Springer, 2004). They transmit to students the innovative methods of disease evaluation, as well as condition the development of practical and scientific skills in any health policy agenda (Norman, 2011).

The development of health systems requires transformation of research-based interventions (Hart, Bond, 1995). Population health intervention research, contextualized by its nature, focuses on preventive approaches, technological and organizational innovations. National public health research program which was announced in France in August 2017 carries the idea that “[...] funded research contributes to the national aims to invest in health prevention, to improve the efficacy and efficiency of the health system, and to reduce health inequalities” (François, Cambon, 2017).

Health communication is an important tool for informing society concerning the main peculiarities of health associated topics (Schiavo, 2007; Cline, 2013). Successful health communication facilitates health literacy, or the ability to understand and use accumulated information about main health topics (prevention of diseases, morbidity rate, vaccination, etc.), (Phoenix, 2010).

One of the modern ways of health communication is publication. Historically developed models of information exchange, such as carving on stone, smoke signals or even first types of written communication – papyrus, courier and postal system, and newspapers are out-of-dated methods of self-expression. The main needs of establishing communication – which are dissemination of information, education and building relationship – demand the development of novel methods and the refinement of already existed ones. Among them the role of scientific publication is prominent (Seidman, Silberg, Patrik, 2013).⁵

One of the main points of conducting public health research is to elevate the level of education in society, and to help individuals become more healthy, civilized and tolerant (González Rincón, Arcángel Urbina, 2013). In relation to health issues three types of knowledge may be detected: the so-called ‘lay’ knowledge, which means non-professional’s opinion on medical issues based on personal and historical experience, *biomedical knowledge*, which is social scientific knowledge, and *social science*

⁵ Historically, first three professional journals were *New England Journal of Medicine* (started in 1812), *Lancet* (from 1823) and *The Journal of American Medical Association* (started in 1883).

knowledge, which places the 'social' in the very center of both research and understanding morbidity and mortality. As the health research requires complex set of instruments to be conducted, numerous methods of investigation make its realization difficult. While in the XX century the term *research* was used to designate pure scientific act, in contemporary world it is complemented by collective enquiry of participants engaged in prevention, treatment and rehabilitation of different pathologic conditions. That is how *qualitative* approach has complemented to *quantitative* one, forming the *multiple* or *mixed* (simultaneous, sequential or emergent) methods research programs to inform the health arena. Mixed methods are used in health services, psychiatry, aging research and nursing, among other fields (Creswell, 2014). Despite the type of research methods used, all of them serve to *exploratory*, *descriptive*, and *explanatory* purposes. Different methods are distinguished by "[...] a) the type of research question used, b) the extent of control an investigator has over actual behavioral events, c) the degree of focus on contemporary as opposed to historical events" (Yin, 2003).³⁴

As science admits no borders, one of the main ways of modern scientific investigation is of international nature. International collaboration helps to involve diverse spectrum of researchers and facilitates the effective interchange on newly created knowledge, as well as the formation of universal civic values. Intellectual generosity and open access to published papers are among the main triggers of innovative and value-determined science. International projects promote the effective exploitation of the results and familiarization with cultural diversity and other sorts of peculiarities which should be taken into consideration during modern biomedical research. Cultural diversity which is based on values and is shared by concrete society or population, performs a crucial role in understanding the differences in morbidity and mortality, in elaboration of public health approaches and in formulation of culture-specific recommendations. Dietary preferences, air pollution, predisposition to the development of genetic diseases and other public health issues are culture-mediated and determined by different traditions of lifestyle.

Value-based research is increasingly important as multidisciplinary approaches enable different countries to communicate, aiming at discovering new research perspectives concerning disease treatment and prevention. Building healthy society remains a main priority for a flexible public health model, appropriate and adjustable for different cultural epistemes. Considering man not only as a creature composed by molecules, tissues and organs but also as social and spiritual person, creates a multi-approach philosophy of health comprehension with a pivotal task of finding new medical and cultural ways of understanding the philosophy of biomedical sciences.

5. Benefits of university research in Public health

UNIVERSITIES OFFER THE POSSIBILITY TO CONDUCT research at all theoretical and clinical departments (Blanco Jiménez, Blanco Jiménez, 2000). Huge number of medical professionals worldwide are affiliated to schools of basic medical sciences or university hospitals. Thus, universities possess the necessary human resource for planning and realizing scientific investigation (Probst et al., 2007). At the same time, laboratories and clinical centers are equipped with modern facilities which also may be usefully integrated in the research plan. Combination of both personal and technical sources transform universities in an attractive ambience for research (Conde Guerri, 2001; Walteros, 2008). Public health research is linked with clinical medicine as it is a complex scientific investigation conducted not only at population or health services level but also on clinical basement (Barnhoorn et al., 2013). In order to prevent and treat diseases, public health research connects epidemiology with health services, social and environmental sciences with clinical research. It is not accidentally that European Union will spend ~ 8% of its budget on research in the period of 2014-2020 (European Commission, 2011).⁶ One of the main constants of European Public Health Association is a research taken forward by Public Health Innovation and Research in Europe (Zeegers et al., 2013). In European countries national research systems are controlled by Ministries of Science and Ministries of Education. Ministries of Sciences frequently consider Public Health research being prerogative of Ministries of Health (Conceição et al., 2013). As a result of the mentioned, Ministries of Health generally fund national schools of public health to teach public health sciences and to conduct research. And the most important is that the main place for the development of modern public health agenda is found at medical schools, universities and institutes (Conceição et al., 2009).

Two considerations may be added to the mentioned above; first, universities present the accumulation of students which need to develop not only teaching but also research skills; second, emeritus professors which do not participate in everyday clinical procedures may share their knowledge and gained experience with young colleagues. The combination of these two factors provide benefits for all members of medical society.

One of the main benefits of university medical investigation is that health research needs to use different scientific methodologies (social and natural) to be conducted (McCarthy, 2011). Interdisciplinary approach to scientific evaluation

⁶ European Commission. *A Budget for Europe*. Brussels 2011, COM (2011) 500. Final.

is a modern and a highly productive one. Experimental investigation combines theory with practice. Different branches of biological and physical sciences are used to explain pathologic changes which occur in human body. The use of *quantitative* and *qualitative* methods of research would guarantee the accumulation of evidences necessary for understanding scientific, social and cultural complexities within which health system should be studied. University departments and their libraries provide good opportunity for interdisciplinary research (Remedios Moralejo Álvarez, 1996; Abadal, Güel, 2006).

To conduct scientific research, it is necessary to attract corresponding funds. Grant providers on national and international levels demand institutions to provide the firm assurance for investigation. From this point of view, universities are among the most trustable institutions which can plan and perform the research. High quality of affiliated professionals, as well as diverse and innovative spiral medical curricula warranties continuous progress of university research. At the same time, universities can structure their own scientific budget, self-funding, organizing pilot studies as the first step to attract more complex and gross financing (Veatch, Haddad, English, 2010).⁷

The further assumption is that the results of scientific investigation are the valid source of knowledge for the formation of clinical recommendations. University hospitals may use the results of clinical trials in everyday practice, in order to reduce the complications of treatments, to eliminate hospital infections, to improve rehabilitation procedures and to accumulate new clinical knowledge. Physicians, nurses and allied medical staff base their work on research knowledge demonstrating the importance of research during every day medical services. Thus, universities with their hospitals are among the first beneficiaries of scientific research.

Research results at university level may be presented, collected and shared by different ways. Together with the traditional channels of information delivery – such as print and broadcast media – some new methods of communication have developed. In our era of swift technical changes and modern facilities of communication, Internet technologies are the most rapid and cost-effective tools for reaching societies and populations (Cabrero Almenara et al., 2009). Social media, digital technologies and preprint databases facilitate the exchange of professional information. But still, even in the accelerated world of today's technocratic challenges, one of the most rigorous and effective methods of professional formation is the publication of scientific article. Despite the fact that congress participation and clinical visits offer

⁷ Theory and research in promoting public health. In: Earle S, Lloyd C.E., Sidell M. and Spurr S, editors. London: Sage Publications in association with The Open University, 2007. 424 p.

the unique possibility to interchange personal and professional experience, publication in peer reviewed journals conditions the formation of specialists with both theoretical and practical skills. All the mentioned reasons make clear the advantages of university research (Chaves García, Arias Rodríguez, 1998).

6. Conclusions

Public health research at university offers a set of possibilities which determines the production of value-oriented and evidence-based knowledge. A growing trend towards new diagnostic methods and elaboration of optimal treatment approaches requires planning and conducting interdisciplinary and funded research with participation of university-affiliated staff and medical students. Linking research products with society, university is well placed to take an advantage of the new social agreement: it creates and shares values that respond to modern challenges of society. Thus, research itself is converted into one of the main values that determines the necessity of formation of other values, being by their nature cultural or scientific. The formation and dissemination of new and value-driven knowledge conditions the equal distribution of material and non-material benefits, creating tolerant and responsible citizens of the modern civic society.

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