

## EDITORIAL

# Scientific method and research in health: orientation for professional practice

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## Abstract

In the health area, research is designed to develop reliable data on problems and needs that are important to the individual/community, with a particular focus on guiding practitioners. Today, due to innumerable innovations in health, health decision-making needs to be based on scientific principles, which is a daily process that is integral to the rhythm of life, product and reason for social interests in confrontation based on learning, not summarized to mere reproduction. In this context, when considering that the quality of the research is directly linked to the presentation of the results, it is important to note the importance of the construction of research protocols that present the step-by-step techniques of organization and analysis of the data, understanding that the researcher, when in possession of collected data, must be sure that when they work respecting the chosen technique, they will indicate the evidences of the study, with possibilities to achieve a new knowledge with the minimum of bias that can happen. Thus, the importance of emphasizing the scientific method as a way for the development of scientific research in order to achieve the objectives set is understood, increasing the rigor of the research to give visibility to information that enables conscious professional practices and within of criteria that contribute to decision making on care based on validated scientific information.

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Systematic research is built on orderly methods aimed at answering questions and identifying problems. In the area of health, it is designed to develop reliable data on problems and needs that are important to the individual/community, with a particular focus on guiding practitioners<sup>1</sup>.

Nowadays, due to innumerable innovations in the health area, health decision-making needs to be based on scientific principles that are a daily process that is integral to the rhythm of life, product and reason for social interests in confrontation based on learning, not concise to mere reproduction; this is directly related to knowledge and reality, which will imply the selection of the intervention most appropriate for the specific situation of care, considering that there are differences between expecting these advances to have positive results and truly knowing if they work<sup>2</sup>.

Thus, professionals are increasingly expected to understand and conduct research and base their professional practices on data collected by these surveys, and to adopt an evidence-based practice - EBP<sup>1</sup>.

With the purpose of promoting the quality of health services and the reduction of operational costs, EBP is understood as a knowledge-based and evidence-based approach, both for clinical care and for teaching<sup>3</sup>, linking the results of the research and its practical application, since it leads the decision-making in the consensus of the most relevant information to the best care<sup>4</sup>.

Evidence-based practice has its origin in the evidence-based medicine movement, which is defined as the use of the best evidence to make a conscious, explicit, and judicious decision on individual patient care<sup>5</sup>. It requires skills that are not traditional in clinical practice, since it entails identifying the essential issues in decision making, seeking scientific information pertinent to the question and evaluating the validity of the information<sup>6</sup>.

Health professionals make clinical decisions based on a large repertoire of knowledge. As evidence is constantly evolving, learning about the best practice that will be used throughout a professional's career is strengthened. In this understanding, scientific research has been considered the best method to acquire reliable knowledge<sup>1</sup>.

In this context, it is known that scientific research starts from a question, and the method that is used to answer it arises from the researcher's view of how the world works<sup>7</sup>. Scientific questioning has been conducted within two paradigms, that is, two visions: the positivist view and the constructivist view<sup>1</sup>.

Positivist thinking starts from the presupposition of a rational organization of society, in order to meet a need for stability, only admitting that the real, true and unquestionable is based on experience; a belief in objective reality. Its approach involves the use of systematic procedures, in an orderly manner and a rigorous control of the research situation to test guesses about the nature of the studied phenomena and the relation between them<sup>1,8</sup>.

On the other hand, in constructivist thinking, reality is not a fixed entity, but a construction of the individuals who participate in the research, existing within a context, with possibilities of construction; it seeks the flexibility and adaptation that expose the sensitivity of the relation between the researcher and the researched, starting from the interaction between the rational and the intuitive in the analysis of the phenomenon, maximizing the knowledge when the distance between the researcher and the participants of the research is minimized. In constructivism, rigor and quality depend on reliability, authenticity, and must necessarily benefit all those involved in the investigation<sup>1,9,10</sup>.

Thus, in order to structure their studies, gather and analyze the relevant information, the techniques used by researchers are influenced by these paradigms, thus allowing the definition of the most appropriate scientific method. For Polit, Beck<sup>1</sup>, the positivist and constructivist paradigms correspond to the different methods of evidence in development and indicate the type of research method to be applied.

In this way, the methodological strategy in a scientific investigation corresponds to the instrument to face reality, being able within the scientific field to develop with focus on the qualitative and/or quantitative approach; approaches that have their own characteristics and are linked to different paradigms, such as the positivist or constructivist<sup>6</sup>.

The qualitative and quantitative approaches in research contain sets of interpretive practices, called methods, which, in theory, do not belong to a single field of knowledge and are considered good whenever they allow a correct construction of the obtained data and provide theoretical elements for the analysis<sup>11</sup>. Quantitative studies are guided by a set of laws and presuppositions of epidemiological designs, while qualitative ones are submitted to the canons of the social sciences, mainly social anthropology<sup>12</sup>.

In this context, when considering that the quality of the research is directly linked to the presentation of the results, it is important to notice the importance of the construction of research protocols that present the

step-by-step techniques of organization and analysis of the data, understanding that the researcher should be assured that, when they are respected, they will indicate the evidence of the study, with the possibility of arriving at a new knowledge with the minimum of bias that may occur, if coherent and coherent interpretations are not contemplated, without value judgment, thus achieving the objectives of the study proposed in a more reliable way.

In the phases of organization and analysis of research data when well applied, they provide a detailed and systematic research with the least possible bias, which will give greater credibility to the presented results.

Based on the fact that health professionals are increasingly seeking their evidence-based practices, research should present a scientific method capable of illustrating the best path to health decision-making considering not only the clinical aspects of the patient, but also the subjective ones that pass through the emotions, culture, values, beliefs, among others.

In this context, the Journal of Human Growth and Development presents, throughout its trajectory, research that brings rigor to the proposed methods, presenting articles with qualitative approaches, when seeking to analyze perceptions, using for that interviews and data organization based on techniques of analysis of contents<sup>13,14</sup>.

The systematization of care should be a qualitative approach. The content analysis should

be developed through three chronological poles that allow the researcher to construct a structure of analysis that corresponds to the needs of the research and the objectives of the proposed research, allowing a reliable reproduction of the method by the scientific community<sup>15</sup>.

On the other hand, the studies with a quantitative approach are those studies with public data that use databases of information systems<sup>16,17</sup>, or population-based studies applying questionnaires and/or quantitative research; i.e. characteristic collection instruments<sup>18,19</sup>.

Among others, there are publications of scientific protocols of research with construction and validation of educational technology and the applicability of the construction and validation of research instruments<sup>20-22</sup>, as well as different types of study that present methods with divergent paths, such as the studies of cases<sup>23,24</sup> and, finally, systematic reviews<sup>25</sup>.

The importance of emphasizing the scientific method as a way to develop scientific research in order to achieve the objectives set is understood, increasing the rigor of research to give visibility to information that enables professional practices to be conscientious and within criteria that contribute to decision making on care based on validated scientific information. The Journal of Human Growth and Development, once again, contributes to this important and current debate.

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## Resumo

Na área da saúde a pesquisa é projetada para desenvolver dados fidedignos sobre problemas e necessidades importantes para o indivíduo/comunidade, com foco, em especial, para orientar a prática dos profissionais. Atualmente, devido a inúmeras inovações na área da saúde, a tomada de decisão em saúde necessita estar pautada em princípios científicos que é processo cotidiano integrante do ritmo de vida, produto e motivo de interesses sociais em confronto baseado no aprendizado não resumido à mera reprodução. Nesse contexto, ao considerar que a qualidade das pesquisas está diretamente ligada à apresentação dos resultados, destaca-se a importância da construção de protocolos de pesquisa que apresentem o passo a passo de técnicas de organização e análise dos dados, ao entender que o pesquisador quando de posse de dados coletados, deve ter a certeza de que ao serem trabalhados respeitando a técnica escolhida, indicarão as evidências do estudo, com possibilidades de chegar a um novo conhecimento com o mínimo de viés que pode acontecer. Assim, entende-se a importância de dar ênfase ao método científico como caminho para desenvolvimento da pesquisa científica para que assim se alcance os objetivos traçados, propiciando cada vez mais a rigorosidade das pesquisas para dar visibilidade a informações que possibilitem as práticas profissionais conscientes e dentro de critérios que contribuam para tomada de decisão sobre o cuidado com base em informações científicas validadas.

**Palavras-chave:** pesquisa, saúde, método, prática profissional.

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