

ABSTRACT

Medicine has been and continues to be a challenge when research is considered. Evidence-based medicine is the cornerstone for establishing a diagnosis, a treatment, but also a cause and effect relationship. When taking all this into account, complementary medical disciplines have become the tools for a physician involved in research.

Scientific research methodology has been a mandatory discipline in our university for the past ten years and it has become an important scientific tool for college, PhD or master students and physicians with an interest in research. Professor Monica Sabau, head of the epidemiology and preventive medicine department, was the initiator of our department. I advanced to the position of lecturer, then associate professor and I tried to my best capabilities to enhance the curriculum for every college where this subject is delivered. The following three books illustrate this statement:

1. Vladimir Bacărea, Monica Sabău, Marius Mărușteri, Anca Bacărea, Metodologia cercetării științifice medicale, Editura University Press, Țirgu Mureș, 2009, 109 pg., ISBN 978-973-169-070-4, cod CNCIS 210
2. Vladimir Bacărea, Ghiga Dana, Marius Mărușteri, Olah Peter, Petrișor Marius, A primer in research methodology and biostatistics, Editura University Press, Țirgu Mureș, 2014, 163 pg., ISBN 978-973-169-285-2, cod CNCIS 210
3. Vladimir Bacărea, Ghiga Dana, Valentina, Pop Raluca Monica, Principii metodologice în cercetarea medicală, Editura University Press, Țirgu Mureș, 2014, 127 pg., ISBN 978-973-169-319-4, cod CNCIS 210

In the following years after the department was created, my colleagues joined me in my efforts: lecturers Dana Ghiga, Raluca Pop and Beata Jako.

I've been involved with the teaching process for the past 17 years, a fact proven by my medical background (as an alumni of the University of Medicine and Pharmacy of Tirgu-Mures, consultant in Epidemiology) and the positions held in the three departments (anatomy, epidemiology and scientific research methodology).

Throughout time I've identified several research directions:

- I. Research studies regarding reproductive healthcare (collaboration with the East European Reproductive Health Institute) – Scientific Research Methodology lecture – applications in the reproductive healthcare, May 2014.
- II. Research studies regarding drug research – several contracts with pharmaceutical companies. I've applied both scientific research methodology and applied statistics in these very well controlled environments and in bioequivalence studies.
- III. Research studies regarding the use of IT technology in medical research (PhD thesis – PC assisted medical applications in research, 2009).
- IV. Research studies regarding the methodology applied in laboratory research.
- V. Research studies regarding the specific methodology in surgical research. The continuous participation in a well-structured team has led to several high-impact studies published in renowned journals with an important contribution to the scientific milieu.

Future research directions:

From the point of view of our teaching activity, I think there are new methods to be used for medical students: problem based learning, team based learning and problem based teaching. A chapter in our latest book is dedicated to these particular issues (Vladimir Bacărea, Ghiga Dana Valentina, Pop Raluca Monica, Principii metodologice în cercetarea medicală, Editura University Press, Țirgu Mureș, 2014, 127 pg., ISBN 978-973-169-319-4, cod CNCIS 210).

Another goal is to apply the existing teaching methods by increasing the students' involvement in the teaching process:

- Evidence-based medicine
- Interactive online systems
- Increasing the number of online teaching material
- To create and develop scientific groups for medical subdomains (scientific research methodology in medicine, dentistry or in drug studies).

From the professional point of view I want to make the first steps towards creating a national society for research methodology and biostatistics, to continue my involvement in all of the University's activities, to accrue the collaboration with the international societies (our University is a member of RECIF – Réseau d'épidémiologie clinique internationale francophone), and maybe to take part in other international programs (ERASMUS).

Regarding research, my goals are as follows:

- To continue the collaborations with our already well-established research teams
- To create and implement the new methodological techniques in the applied medicine field (methods for developing new reference ranges for different laboratory analysis)
- To stimulate medical students and young researchers to develop new scientific ideas through micro scientific sessions
- To continue the real-time studies in biostatistics and to try to engage European funds for this field
- To continue to offer technical support for researchers regarding both study design methodology and data analysis
- To try to involve as many people as possible in this field, to expand our support in every research team in our University.

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