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Students' Research Projects as a Way to Evidence-Based Osteopathy

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"... [an osteopath] has no use for theories
unless they are demonstrated"
(A.T. Still)

"Beneficial results that are both demon-
strable and observable are not necessary ad-
equate stepping stones to acceptance"
(W.G. Sutherland)



The **aim** of our study was to investigate whether research projects written by osteopathic students during the final year of their studies may be turned into journal publications.

Material

- The study was based on quite a limited material represented by the latest research projects of full-time students of the **European School of Osteopathy (MOst)** in Maidstone (the UK), and part-time students of the **Institute of Osteopathic Medicine** in St Petersburg (Russia).
- On the whole 67 projects were analyzed. And here we'd like to thank these two schools for giving us the opportunity of studying these projects.

Method

- The method was purely empirical, subjective, even bordering with voluntarism because it was the speaker, who judged the research projects. The only excuse for that may be seen in four decades of experience in editing medical articles, analyzing medical literature, meta-analysis, etc. Fortunately most of our thoughts and suggestions find confirmation in the relevant literature (see the references).

- Physiology may be compared to **"the logic of life"**, pathology – to **"the logic of disease"** and evidence-based medicine – to **"the logic of doctoring"** (Petrov, Nedogoda, 2009). Of course, the latter cannot substitute the ART of healing, but it's a way to a coherent synthesis of the private experience of a physician or a practitioner (ART) with the results of studies revealing the efficiency of a method or a way of treatment (SCIENCE).

It takes us back to A.T. Still (1908) who defined osteopathy as the **TRUTH** in the world dominated by allopathic medicine, but truth according to Oxford English Dictionary (Online 2010) means **"correspondence to fact or reality"**.

Evidence-based medicine is a process of systematically reviewing, appraising and using clinical research findings to AID THE DELIVERY OF OPTIMUM MEDICAL CARE TO PATIENTS (Rosenberg, Donald, 1995). It's a way of advancing **research** in a given field.

- In order for the evidence to be available to physicians or practitioners **it must first be published**. That's why a shift to evidence-based medicine has initiated great changes in medical knowledge and medical literature. Due to it the half-life of medical knowledge is getting shorter and shorter. The peak use reach journal articles published three years ago. The median age of information use amounts to 8–9 years (Tonta, Unal, 2005).

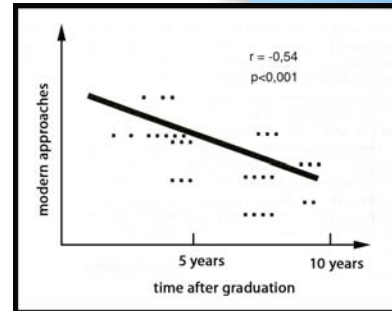


Fig. 1. Aging of medical knowledge (Petrov, Nedogoda, 2009).

- Medical knowledge steadily accumulates with time. Since mid-20th century medical literature has grown at an amazing pace (Bland, 2004; Druss et al., 2005).

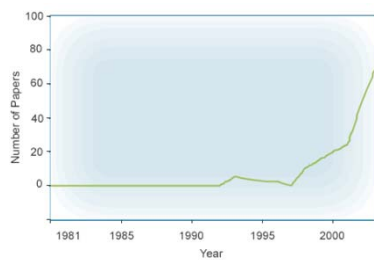


Fig. 2. Exponential growth of medical literature (Bland, 2004).

- Benjamin Druss with co-authors (2005) based their studies on 8.1 million journal articles indexed in MEDLINE – the largest and most widely used source of medical literature. They compared two periods – **from 1978 to 1985** and **from 1994 to 2001**. It was found out that the annual number of MEDLINE articles increased **46%** per year with **1.5-fold** increase of the average number of pages per article. The growth in the literature was particularly concentrated in clinical research. This combination of increasing numbers of articles and increasing proportion of randomized trials resulted in a dramatic increase in the total number of randomized controlled trials from approximately **5000** to nearly **25000** per year that is **5-fold**. The median number of authors per publication doubled from 2 to 4, with the proportion of articles written by 5 or more people increasing from 15.6% to 35.1%. These tendencies keep on growing.



- According to Bryan Dagenhart (2012) in Flexner's time (the famous Flexner's report of 1910) **900** hours in the medical curriculum were dedicated to osteopathic medical manual training; by 1980 the latter was reduced to **480** hours and at present only **200** hours are left on the average. No wonder that 50% American osteopaths use osteopathic manual treatment less than in 5% of patients.

To our mind, there are three main reasons keeping European osteopathy far behind the mainstream medicine:

- firstly, it's the huge lack of research resources and modern means of diagnosis and control because osteopathy is practiced privately,
- secondly, absence of specialization (which actually osteopathy does not need) and a wide variety of problems it deals with (from a mere somatic dysfunction to a serious pathology) with a wide variety of goals (from complete resolution of the problem to improving the quality of life),
- thirdly, there is an unresolved problem of sham therapy.

The relative loss of research expertise and the limited funds available present significant challenges.

It seems logical to ask: *Should the laws, guiding contemporary osteopathic literature, be different from other clinical specialties?*

The editorial in "The International Journal of Osteopathic Medicine" (2007) clearly states: " ... without research there will be threats to professional autonomy, professional development and to the ongoing viability of our educational programs".

It's clear that no prince will come to awaken our sleeping beauty.



According to Lucas and Moran (2007) there are four main groups responsible for producing research in osteopathy:

- individual practitioners,
- professional organizations,
- faculty members,
- students collaborating with their supervisors.

The primary concern of individual practitioners lies in clinical management of their patients. They are consumers of research. It means that over 50% of articles submitted for publication should be a product originating from within academic institutions.

The weakest point in both groups is randomization. Greater depth is needed in discussion. The philosophy of osteopathy can answer the **WHY** questions, while the **HOW** questions need evidence. Evidence is provided by the students, but the mechanism of osteopathic treatment frequently remains unrevealed. May we suggest that Russian osteopathic part-time students being mostly practicing doctors with the wealth of medical knowledge and experience should try to answer the question "HOW?" in a more elaborated way.

Mullinger, B. (2007)

Manuscript preparation and publication for would-be writers: an aid to disseminating osteopathic research.

Int. J. Ost. Med. Vol. 10, p. 56-67.

To judge the research projects let's take some of Quantitative Research Assessment Tools listed by **N. Golafshani (2003)**:

1. The first of them is **Population and Sample**. The question asked is whether the population that was eligible to be selected for the study included the entire population of interest or represented a selective subgroup of the population of interest? The population usually represents a limited or selective subgroup of the population of interest.

2. The second aspect concerns **Randomized Selection of Participants**. It's a weak point in the majority of the projects. They are quite vague about patients' selection to the extent that sometimes it's difficult to understand whether the study was randomized or not.

3. The **Sample Size**. Does the sample include enough participants from key subgroups to accurately assess their differences? The sample size is usually sufficient.

4. **Response and Attrition Rate**. What proportion of the selected sample completed the study? Unfortunately information about drop-outs is frequently missing and the number of cases with missing data is not specified.

5. **Main Variables or Concepts**. Is each of the main variables or concepts of interest described fully? The answer is positive: in the great majority of the projects they are described in detail.

6. **Testing the Concepts**. Did the author choose variables that make sense as good measures of the main concepts in the study? It may be stated that key concepts are measured with variables that make sense.

7. Statistics. Does the study describe the statistical technique used? Does the study explain why the statistical technique was chosen? Usually statistical techniques are explained, but the reasons for choosing them are not always included.

- It's clear that under the present conditions large randomized controlled studies (category I) are hardly possible. But cohort studies (**category II**) and non-controlled clinical trials – prospective or retrospective (**category III**) with B level of evidences (*the presented proofs are relatively persuasive*) are quite feasible.

The following spheres may be delineated:

- A. critical comprehensive literature reviews as a basis for cohort studies,
- B. clinical research that evaluates the reliability and validity of osteopathic diagnostic procedures,
- C. outcome research that tests the efficacy of osteopathic techniques and treatment,
- D. qualitative research that explores numerous aspects of patient-osteopath interaction that cannot be quantified.

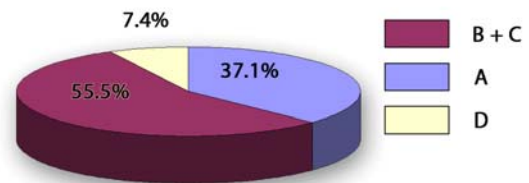


Fig. 3. Distribution of the ESO dissertations (2011).

- It may be worth continuing a pilot research on a larger sample group accumulating the clinical resources of several schools.
- It may be interesting to combine the results of several research projects on a similar topic written at one college or even better – at several colleges, to compare various methods and approaches tested by students earlier.
- A concept suggested at one school may be tested by others.
- Regular international students' conferences will provide new information and inspire students for further studies.
- Possibly it's worth thinking about publishing kind of Year Books, for example every three years, presenting the results of the best research projects of all OSEAN schools.

- It's high time for Russian osteopaths to unite their efforts and considerable potential for the aim of creating a journal in osteopathic medicine, which will allow osteopathy to become a mature profession in this country.



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Thank you for your attention!