

IRINE KORINTELI¹, MZIA KHALVASHI², ELISO TURKADZE³

MODERN ASPECTS OF EVIDENCE-BASED MEDICINE

¹ Child and Adolescence Medicine Department, Tbilisi State Medical University, Tbilisi, Georgia;

² Department of Obstetrics and Gynecology, “BROTHERS” International Hospital of Batumi, Georgia;

³ Neonatal Department, TSMU, The First University Clinic, Tbilisi, Georgia

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ირინე კორინთელი, მზია ხალვაში, ელისო თურქაძე
მტკიცებითი მედიცინის თანამედროვე ასპექტები

¹ ბავშვთა და მოზარდთა მედიცინის დეპარტამენტი, თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი, თბილისი, საქართველო; ² მეანობა და გინეკოლოგიის დეპარტამენტი, ბათუმის საერთაშორისო ჰოსპიტალი „BROTHERS“, ბათუმი, საქართველო; ³ ნეონატოლოგიის დეპარტამენტი, თსუ პირველი საუნივერსიტეტო კლინიკა, თბილისი, საქართველო

რეზიუმე

2019 წლიდან, პანდემიის პირობებში, მეცნიერება სრულად ფოკუსირდა COVID-19-ზე. მედიცინის ბევრი აქტუალური საკითხი მოექცა ჩრდილში, მათ შორის მტკიცებითი მედიცინა.

ჩვენი შრომის მიზანს წარმოადგენდა მტკიცებითი მედიცინის შესახებ ლიტერატურის შეჯერება. მტკიცებითი მედიცინის ფორმატი უზრუნველყოფს პაციენტის ღირებულებებზე საუკეთესო კვლევის შედეგების მორგებას. მისი კონცეფცია აერთიანებს ხუთ ძირითად საფეხურს: კლინიკური კითხვის ფორმულირება, მტკიცებულების მოძიება და მისი სანდოობის დადგენა, მტკიცებულების გამოყენების შესაძლებლობა და შეფასება.

მტკიცებითი მედიცინის ფორმატით დაავადების მართვა გულისხმობს პაციენტისათვის ინდივიდუალურად საუკეთესო სამედიცინო სერვისის მიწოდებას.

In recent years, the pandemic situation had an impact on scientific works, and the main focus has been shifted to the modern problem – COVID-19. Many medical issues have fallen into the shadows, such as evidence-based medicine.

The aim of our work is to review articles about evidence-based medicine. We review modern trends of the evidence-based medicine, but there are not many publications in recent years.

The following sources were used for our review:

- <https://www.jaypeedigital.com/>
- <https://ebookcentral.proquest.com/>
- <https://www.ncbi.nlm.nih.gov/>
- <https://www.sciencedirect.com/>
- <https://www.scopus.com/>

The knowledge of evidence-based medicine has increased over the last few years in 20th century and actually in 21st centuries. The philosophical origins of Evidence-based medicine started in Paris in the mid-19th century [2,5,10].

The term evidence-based medicine has come from the English-speaking world. In our opinion, one of the best definitions of the evidence-based medicine is “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients”- “integrating individual clinical expertise with the best available external clinical evidence from systematic research” [1,3,4].

Physicians with many years of clinical experiences to help the evidence-based medicine can optimize management of diseases. The practical doctors without evidence-based medicine are doctors without the best evidence and it is risk having a practice that is out of date [1,2].

Today doctors with good practices use both individual clinical expertise and the best available external evidence.

The most important is that evidence-based medicine seeks to use “evidence” in the practice of medicine [1,2]. Evidence-based medicine stresses the examination of evidence from clinical research in contrast to intuition, unsystematic clinical experience. The progress and innovations in health care are measured by systematic reviews and meta-analyses [8].

In recent years, randomized trials have been created by the concept of the hierarchy of evidence. It is reality, that much of the medical research is observational and accordingly, conclusions are often weaknesses. Observational studies provide an important source of information when randomized controlled trials cannot or should not be undertaken [8].

Observational study designs - epidemiologic study designs include ecological designs, observational diagnostic study designs too [7,8,10]. Evidence-based Medicine is the integration of best research evidence, clinical expertise, patient values. The concept of evidence-based medicine includes five main steps: Formulation of answerable clinical questions, Searching for evidence, Critical appraisal, Applicability of evidence, Evaluation of performance.

A method for literature review was developed by PubMed - The PubMed PICO/Patient, Intervention, Comparison, Outcome/tool is a method to conduct evidence-based practice literature searches. These principles are applied to critical care medicine and analogies are made to the methodological rigor of evidence-based medicine [9]. There are next 7 steps to the perfect PICO search [12]: Formulate the PICO question, identify keywords for each PICO element, plan the Search Strategy, execute the search, refine the results, review the literature, assess the evidence.

There are many studies modern designs of biomedical and public health research. Each design is characterized by strengths and weaknesses and has potential limitations [10].

Structure's elements of Study Design are various:

- Case-control study - A study which involves identifying patients who have the outcome of interest (cases) and patients without the same outcome (controls), and looking back to see if they had the exposure of interest [10,11,12].
- Case series -A report on a series of patients with an outcome of interest. No control group is involved [10,11,12].
- Cohort Study - Involves identification of two groups (cohorts) of patients, one which received the exposure of interest, and one which did not, and following these cohorts forward for the outcome of interest [10,11,12].
- Crossover study design - The administration of two or more experimental therapies one after the other in a specified or random order to the same group of patients [10,11,12].
- Cross-sectional study - The observation of a defined population at a single point in time or time interval. Exposure and outcome are determined simultaneously [10,11,12].
- Randomized control clinical trial - Participants are randomly allocated into an experimental group or a control group and followed over time for the variables/outcomes of interest [10,11,12].

Observational study in relation to time is prospective and often retrospective and for structure it is possible cross sectional, case-control, case-crossover, retrospective and prospective cohorts [10]. Interventional studies are often prospective [8,10]. The observational diagnostic study designs /diagnostic accuracy designs, diagnostic cohort designs, diagnostic randomized controlled trials / use research for diagnostic procedures and tests [10,12].

In our country, as one of the actual questions in the world, is cost-effectiveness of medical service. Quality Health care was and stays expensive in 21st century too. Among the medical challenges, the economic impact of medical programs and interventions became actual. The issue is more dramatic in the case of private insurance companies. clinic is obliged the basic approach to cost-effectiveness analysis [5,6,11]. The economic basic category of evidence-based medicine includes [5,6,11]:

- Cost-benefit - A comparison of alternative interventions in which costs and outcomes are quantified in common monetary units.
- Cost-minimization - A determination of the least costly among alternative interventions that are assumed to produce equivalent outcomes.
- Cost-effectiveness - A comparison of alternative interventions in which costs are measured in monetary units and outcomes are measured in non-monetary units, e.g., reduced mortality or morbidity.
- Cost-consequence - A form of cost-effectiveness analysis in which the components of incremental costs and consequences of alternative interventions or programs are computed and displayed, without aggregating these results.

- Cost-of-illness - An estimation of results in terms of quality of a life, as advantages of one kind of treatment before another.
- Cost-utility - "Cost of disease" - an estimation of direct and indirect expenses for treatment of separate disease.

Clinicians must be able to distinguish systematic reviews, practice guidelines, and other integrative research focused on management recommendations, when these elements will be integrated, clinicians and patients will be able to optimize clinical outcomes and quality of life [11].

Thus, the most challenge of evidence base medicine is that the external evidence may be incorrect for a noncritical case and it is risk that the best evidence, practice becoming rapidly out of date. In most cases evidence-based imaging is a paradigm for using the best evidence to guide medical decision making, but sometimes modern external evidence may be incorrect for a concrete case, but today the evidence-based medicine is the main rule to use the best decision for medical services for individual patients.

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SUMMARY

In recent years, the pandemic situation had an impact on scientific works, and the main focus had been shifted to the modern problem – COVID-19. Many medical issues have fallen into the shadows, such as evidence-based medicine. The aim of this work is to review articles about evidence-based medicine. Evidence-based Medicine is the integration of best research evidence, clinical expertise, patient values. The concept of evidence-based medicine includes five main steps: Formulation of answerable clinical questions, Searching for evidence, Critical appraisal, Applicability of evidence, Evaluation of performance.

Today the evidence-based medicine is the main rule to use the best decision for medical services for individual patients.

Keywords: evidence-based medicine, economic aspects, methodologic aspects