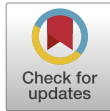




Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Editorial: Connecting patient care and clinical epidemiology: The anniversary of the key concepts in clinical epidemiology series

We live in an era where scientific information has to compete with an overwhelming amount of disinformation for public and political attention. Andre Knottnerus and Peter Tugwell appear to have foreseen the near future when they warned in their editorial that ‘contra-evidence-based approaches are still widely present in ‘fact-’ or ‘evidence-free’ practices, that are not only far from risk- and harmless, but sometimes even advocated, in medicine, society and policy.’ [1] How true this statement is in the light of the current state of affairs in many countries where effective preventive and curative approaches in tackling the impact of the worldwide SARS-CoV-2 pandemic are challenged by many evidence-free or even contra-evidence-based theories and approaches. Moreover, in public debates, scientists often lose the argument as science comes with uncertainty, whereas the ‘other side’ is always 100% sure of what they are espousing, albeit unproven.

The natural reflex of many clinical and epidemiological researchers to counteract the impact of these influences, has been to produce more evidence. However, in the current flood of publications, even for experienced librarians or the best informed scientist, it is challenging enough to retrieve all the studies that have been published. Having the time and knowledge required to separate the wheat from the chaff in regard to methodological quality and relevance may be a step too far. Thus the evidence pipeline is broken [2].

Educating the public and health professionals to recognise the importance of trustworthy evidence as the basis for decision making, is an important counter to the flood of disinformation. Programmes such as ‘Informed Health Choices’ demonstrate that it is feasible [3]. Gaining an understanding of research methods and innovative methodologies provides the foundation for skills and knowledge that may be employed to bridge the gap between practice and clinical epidemiology. It may also facilitate better communication between professionals and their patients with regard to the most trustworthy evidence and the related uncertainties.

Research is always constrained by practical realities to some extent, whether this is in terms of recruitment of sufficient participants, deficiencies in the quality or reliability of measurement, or unavailability of key data. This means

that both scientists and clinicians need to understand and acknowledge uncertainty, either qualitatively (through assessment of methodology) or quantitatively (through variance estimation). As journal editors, our job is to assess the manuscripts we receive to the best of our abilities and resources on the basis of best current research and methodological practice. However, research methods are increasingly diverse and technically complex, addressing different questions and applying a wide range of advanced methods including, for instance, machine learning and artificial intelligence. The job of keeping up to date with current thinking is a major challenge for us and also, we presume, for our readers.

With all this in mind, a year ago, the journal of clinical epidemiology started with the monthly *Key Concepts in Clinical Epidemiology* series, consisting of brief articles that introduce and explain methodological topics, both basic and advanced, which are of relevance for the field of clinical epidemiology. The Key Concepts series is aimed at enticing clinicians as readers, and at bridging a widening gap between clinical practice and the voluminous, complex and evolving science of clinical epidemiology [4]. Moreover, the series also aims at teaching clinicians about the uncertainty of science, and more important, the science of uncertainty. Each article in the series provides suggestions for further reading, guiding readers to sources with more background on the topics. So far, 16 articles have been published as part of the Key Concepts series, handling diverse topics and written by established researchers within their fields as well as by talented junior researchers. An overview of the Key concepts articles that have appeared so far in our journal is shown in the Table 1. The Key Concepts articles have been exceptionally well received during the past year and have, in total, been consulted over 30,000 times already, and we know from our Editorial Board discussions that the articles are already being used in teaching programmes. In the April issue of the journal, we include a guide to estimating pre-test probability written by Professor Elenore Uy. As she reports, clinicians need to be aware of the challenges in estimating pre-test possibility in order to aid interpretation of test results and to guide decision making about further testing and subsequent clinical care.

Table 1. Overview table, key concept papers

Authors	Article Title	DOI	Total usage	Cites in 2021/2022
Lia M. Palileo-Villanueva, Antonio L. Dans,	Composite endpoints	10.1016/j.jclinepi.2020.07.017	2.227	1
Luis Furuya-Kanamori, Chang Xu, Syed Shahzad Hasan, Suhail A. Doi,	Quality versus Risk-of-Bias assessment in clinical research	10.1016/j.jclinepi.2020.09.044	3.395	4
Cynthia P. Cordero, Antonio L. Dans,	Key concepts in clinical epidemiology: detecting and dealing with heterogeneity in meta-analyses	10.1016/j.jclinepi.2020.09.045	2.237	4
Martijn J.L. Bours,	Bayes' rule in diagnosis	10.1016/j.jclinepi.2020.12.021	2.334	2
Maarten van Smeden, Johannes B Reitsma, Richard D Riley, Gary S Collins, Karel GM Moons,	Clinical prediction models: diagnosis versus prognosis	10.1016/j.jclinepi.2021.01.009	4.683	5
Aidan G. Cashin, Hopin Lee,	An introduction to mediation analyses of randomized controlled trials	10.1016/j.jclinepi.2021.02.014	2.179	4
Robin Christensen, Martijn J.L. Bours, Sabrina M. Nielsen,	Effect Modifiers and Statistical Tests for Interaction in Randomized Trials	10.1016/j.jclinepi.2021.03.009	1.685	1
Richard Hooper,	Key concepts in clinical epidemiology: Stepped wedge trials	10.1016/j.jclinepi.2021.04.003	2.876	0
Sander Greenland,	Noncollapsibility, confounding, and sparse-data bias. Part 1: The oddities of odds	10.1016/j.jclinepi.2021.06.007	1.907	2
Sander Greenland,	Noncollapsibility, confounding, and sparse-data bias. Part 2: What should researchers make of persistent controversies about the odds ratio?	10.1016/j.jclinepi.2021.06.004	2.168	3
Lidwine Mokkink, Caroline Terwee, Henrica de Vet,	Key concepts in clinical epidemiology: Responsiveness, the longitudinal aspect of validity	10.1016/j.jclinepi.2021.06.002	1.574	0
Michael A. Kohn,	Key concepts in clinical epidemiology: reporting on the accuracy of continuous tests	10.1016/j.jclinepi.2021.07.012	169	0
Jean C. Digitale, Jeffrey N. Martin, Medellena Maria Glymour,	Tutorial on directed acyclic graphs	10.1016/j.jclinepi.2021.08.001	676	0
Miguel A. Hernán,	Causal analyses of existing databases: no power calculations required	10.1016/j.jclinepi.2021.08.028	2.824	6
Daniel Kotz, Robert West,	Key concepts in clinical epidemiology: addressing and reporting sources of bias in randomized controlled trials	10.1016/j.jclinepi.2021.09.029	358	0
Elenore Judy B. Uy,	Key concepts in clinical epidemiology: Estimating pre-test probability	10.1016/j.jclinepi.2021.10.022	130	0

Total Usage: views via science direct and www.jclinepi.com; Citations via scopus, reference date February 1, 2022

The journal strives to continue the Key Concepts series in the coming years, offering new and exciting topics for interested readers to contribute to further improving the understanding and appraisal of clinical epidemiological literature by health professionals. We welcome feedback on the series, as well as input and suggestions for relevant future topics.

Ludo van Amelsvoort
 Martijn Bours
 Antonio Dans
 Leonila Dans
 David Tovey
 Peter Tugwell

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