Proposing an Alternative to Dogmatic Research Approaches

Collaboration between clinicians and methodology experts is essential to ensuring research evidence is relevant, replicable and accessible to end-users. However, failing to suitably explore the methodological assumptions or limitations inherent to any particular study, a potential consequence of insufficient collaboration, may result in questionable research practices and biased results. One manifestation of this failure is the dogmatic use of a single analytic approach to similar study types - for example, the ubiquitous use of 'statistical significance' to interpret a study's main finding despite widespread admonishment of this practice by methodological experts. Practices that promote a transparent exploration of methodological assumptions and limitations may help to improve the quality of research for end-users. Defaulting to familiar practices is a tendency among all researchers, therefore, a strategy to encourage critical exploration of assumptions needs to be imbedded within research reporting. In the Methodology section of submitted manuscripts, the International Committee of Medical Journal Editors (ICMJE) currently recommends authors provide 'clarity about how and why a study was done in a particular way.' While this practice is designed to allow replication of research projects, it does not convey any exploration of the assumptions inherent to the selected approach. One strategy to better highlight assumptions could be the addition of an 'Alternative Analysis' section to manuscripts. Based on using the same information available for the present study, the authors would be asked to identify a suitable alternative analytic strategy to address their primary research question, such as using a different statistical paradigm (e.g. Bayesian vs. Frequentist), a different class of outcome (e.g. ordinal vs. binary), a different summary estimate (e.g. absolute vs. relative risk), or an alternative approach to generating the same estimates (e.g. adjusted vs. unadjusted). Then authors would be asked to outline how the assumptions for this alternative differ from their selected approach and explore how this may (or may not) change the interpretation of their results. With no shortage of analytic strategies available to address any study question, the Alternative Analysis section will encourage authors to explore the fundamental assumptions inherent to their approach while highlighting alternatives that could be used in future studies. Requiring an Alternative Analysis section may incentivize earlier and better collaborations of clinicians with methodological experts. Clinicians will be encouraged to conduct a more thorough exploration of study assumptions prior to publication (when the analysis may still be improved) rather than after the study has already been published. As clinicians seek guidance to complete the new section of written work, they will naturally gain further insight into the limitations of their selected approach, increasing the quality of published work. Meanwhile, insufficient collaboration may help limit the publication of questionable studies that fail to identify suitable alternatives, curbing the dogmatic use of the same approach for similar study types. The exploration of underlying assumptions should already be done during the scientific process – the Alternative Analysis section will simply make it an explicit component of the final product.

PROPOSING AN ALTERNATIVE TO DOGMATIC RESEARCH APPROACHES

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10.1136/bmjebm-2019-EBMLive.74

Proposing an Alternative to Dogmatic Research Approaches Collaborating between clinicians and methodology experts is essential to ensuring research evidence is relevant, replicable and accessible to end-users. However, failing to suitably explore the methodological assumptions or limitations inherent to any particular study, a potential consequence of insufficient collaboration, may result in questionable research practices and biased results. One manifestation of this failure is the dogmatic use of a single analytic approach to similar study types - for example, the ubiquitous use of 'statistical significance' to interpret a study's main finding despite widespread admonishment of this practice by methodological experts. Practices that promote a transparent exploration of methodological assumptions and limitations may help to improve the quality of research for end-users. Defaulting to familiar practices is a tendency among all researchers, therefore, a strategy to encourage critical exploration of assumptions needs to be imbedded within research reporting. In the Methodology section of submitted manuscripts, the International Committee of Medical Journal Editors (ICMJE) currently recommends authors provide 'clarity about how and why a study was done in a particular way.' While this practice is designed to allow replication of research projects, it does not convey any exploration of the assumptions inherent to the selected approach. One strategy to better highlight assumptions could be the addition of an 'Alternative Analysis' section to manuscripts. Based on using the same information available for the present study, the authors would be asked to identify a suitable alternative analytic strategy to address their primary research question, such as using a different statistical paradigm (e.g. Bayesian vs. Frequentist), a different class of outcome (e.g. ordinal vs. binary), a different summary estimate (e.g. absolute vs. relative risk), or an alternative approach to generating the same estimates (e.g. adjusted vs. unadjusted). Then authors would be asked to outline how the assumptions for this alternative differ from their selected approach and explore how this may (or may not) change the interpretation of their results. With no shortage of analytic strategies available to address any study question, the Alternative Analysis section will encourage authors to explore the fundamental assumptions inherent to their approach while highlighting alternatives that could be used in future studies. Requiring an Alternative Analysis section may incentivize earlier and better collaborations of clinicians with methodological experts. Clinicians will be encouraged to conduct a more thorough exploration of study assumptions prior to publication (when the analysis may still be improved) rather than after the study has already been published. As clinicians seek guidance to complete the new section of written work, they will naturally gain further insight into the limitations of their selected approach, increasing the quality of published work. Meanwhile, insufficient collaboration may help limit the publication of questionable studies that fail to identify suitable alternatives, curbing the dogmatic use of the same approach for similar study types. The exploration of underlying assumptions should already be done during the scientific process – the Alternative Analysis section will simply make it an explicit component of the final product.

FIXING EVIDENCE-BASED MEDICINE REQUIRES TRANSPARENCY, STRATEGIC CAMPAIGNING, AND EDUCATION


10.1136/bmjebm-2019-EBMLive.75

Fixing Evidence-Based Medicine requires transparency, strategic campaigning, and education When patients ask their doctor about the benefits and harms of a treatment, the doctor can
WE NEED LESS RESEARCH, BETTER RESEARCH, AND RESEARCH DONE FOR THE RIGHT REASONS

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10.1136/bmjebm-2019-EBMLive.76

The Trainee Emergency Research Network (TERN), funded by the Royal College of Emergency Medicine (RCEM), is a new initiative that aims to demystify research and increase research engagement amongst Emergency Medicine (EM) clinicians. It was launched in 2018 and is ideally placed to improve how EM research is planned and conducted. Whilst the value of evidence-based medicine in Emergency Departments (EDs) is recognised, the unique pressures of the ED setting makes conducting research and disseminating good practice particularly challenging. TERN was designed to tackle these challenges with a focus on three important pillars: 1) Answer practice-changing questions 2) Robust and achievable data collection 3) Recognition TERN was designed to tackle these challenges with a focus on three important pillars: 1) Answer practice-changing questions 2) Robust and achievable data collection 3) Recognition Point 1, the research question has to be important and applicable to a trainees’ practice, both to encourage engagement and create impact. Point 2, the research has to be designed rigorously so that the data collection is clear and achievable within EDs and can be translated into clinical practice. Point 3, trainee contributions have to be recognised throughout. We will choose research questions that mirror the 2017 James-Lind/RCEM research priority setting partnership. This will allow TERN to frame its research questions around themes that have been recognised as vital in EM. TERN’s strength lies in accessing multiple ED sites for standardised data collection, ideally over short collection periods, to obtain nationally representative snapshots of patients and practice. This enables, for example, small pilot studies and subsequent multi-site prospective observational cohort studies to be conducted rapidly. We recognise that collecting data in multiple sites leads to potential issues surrounding data monitoring and governance. Simplifying the research design of studies by only collecting data that genuinely adds to the research question, will support the collection of accurate data. TERN will also harness the use of online data collection, which allows for live data monitoring and a clear audit trail of all data entered. This will allow busy ED clinicians to concentrate on data collection and allow the study team to have clear oversight of the project at local, regional and national levels. TERN is new but the response from the EM community, both academic and non-academic, has been very encouraging. Thanks to this support, within 8 months, we already have multiple successes, including our first primary research project, TIRED. TERN is new but the response from the EM community, both academic and non-academic, has been very encouraging. Thanks to this support, within 8 months, we already have multiple successes, including our first primary research project, TIRED. We believe that by giving EM clinicians the opportunity to engage in high quality projects and contribute to a national data collection process, we can move away from the current model of EM evidence generation that typically relies on collections of small, often poorly-designed studies with limited compatibility. With our work, we aim to be transparent and seek guidance throughout our research designs, to ensure our projects stand up to the highest of research and statistical standards. Part of this process is opening dialogues and ‘EBM Live’ is the perfect forum to start this.

AUTOMATING THE PROCESS OF SYSTEMATIC REVIEWS IN HEALTHCARE RESEARCH – A METHODOLOGICAL SYSTEMATIC REVIEW

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10.1136/bmjebm-2019-EBMLive.77

Objective Systematic Reviews (SRs) are the cornerstone of evidence-informed healthcare decision making. However, they are extremely resource-intensive and commonly take 2 to 3 years to complete. One of the solutions put forward to support...