

Reporting guidelines and research frameworks

To make international scientific communication more efficient, research articles and other scientific publications should be complete, concise and clear (EASE, 2018). Established tools to achieve these are reporting guidelines for different types of research as well as research design. Over the last 20 years, more than 400 reporting guidelines have been developed, with some of them being regularly updated (Caulley *et al.*, 2020). They help authors, peer reviewers and journal editors to improve transparency and accessibility of research, as well as to reduce research waste by making it more reproducible (Logullo *et al.*, 2020), but also making it obvious as to what research has taken place to avoid duplication. More importantly, it helps reporting of research in such a manner that it protects both the authors and publishers of such research in avoiding potential unethical practices within both study design and the reporting of results. Such guidelines also aid literature reviewing, where comparing research methods, strengths and weaknesses of research etc. is vital. Completeness of reporting is also potentially associated with higher citation counts (Vilaró *et al.*, 2019).

Many initiators of guidelines exist, and it shows that we are heading in the right direction by making research more transparent. A leading international initiative supporting the development and application of reporting guidelines is the EQUATOR (Enhancing the QUALity and Transparency Of health Research) Network – an “umbrella” organization that brings together researchers, medical journal editors, peer reviewers, developers of reporting guidelines, research funding bodies and other collaborators with mutual interest in improving the quality of research publications and of research itself. They define a research reporting guideline as a checklist, flow diagram or structured text to guide authors in reporting a specific type of research, developed using an explicit methodology, which presents a clear list of reporting items that should appear in a paper and explains how the list was developed. The EQUATOR Library contains a comprehensive database of reporting guidelines that can be searched by study design, by specialty and by section of report (EQUATOR. Search for reporting guidelines).

This editorial reports the findings of an analysis of published articles from the last seven issues of the International Journal of Health Governance (IJHG) (Vol. 25, issues 1–4, and Vol. 26, issues 1–3). From 47 papers included in our analysis, only four (8.5%) stated using and actually followed specific reporting guidelines (PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and PRISMA extension for scoping reviews). Among 157 highly cited guidelines for health research, PRISMA is in fact the most cited (Caulley *et al.*, 2020). Amongst many other consensus-based guidelines for reporting research that could guide authors submitting to IJHG are STROBE (The Strengthening the Reporting of Observational Studies in Epidemiology) for observational studies, CARE (CAse REports) for case reports, COREQ (Consolidated criteria for reporting qualitative research) for qualitative research, SQUIRE for quality improvement studies, SQUIRE-EDU (Standards for QUALity Improvement Reporting Excellence -Health Professions Education) for educational improvement studies, CHEERS (Consolidated Health Economic Evaluation Reporting Standards) for health economic evaluations, STARE-HI (Statement on reporting of evaluation studies in Health Informatics) for evaluation studies in health informatics and RAMESES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) for realist evaluation in the assessment of complex interventions.

In their requirements for the article's methods section, many reporting guidelines recommend to elaborate on which descriptive or theoretical frameworks and models the



research was based. This could add to the quality of publications in many ways: “using adequate research frameworks and models helps research studies to frame study questions and hypotheses, link to important background literature, clarify constructs to be measured, depict relationships to be tested and contextualize results, they provide a common language and thus allow to advance and develop cumulative evidence” (Birken *et al.*, 2017). A recent systematic review has proved the utility of applying comprehensive implementation frameworks in implementation research (Louie *et al.*, 2021).

The widely used frameworks for public health and health systems research are CFIR (Consolidated Framework for Implementation Research), RE-AIM (Reach, Effectiveness, Adoption, Implementation and Maintenance), EPIS (Exploration, Preparation, Implementation, Sustainment) and the Medical Research Council framework for evaluating the processes of complex public health interventions (Ridde *et al.*, 2020; Glasgow *et al.*, 2019; Shahsavari *et al.*, 2020). While some established frameworks are adapted to specific contexts (Means *et al.*, 2020), new frameworks to answer evolving research questions are also constantly developed, for example, eHealth Trust Model, a conceptual framework to guide patient privacy research (Shen *et al.*, 2019), and embedded implementation research framework (Varallyay *et al.*, 2020).

Despite the value in using research frameworks, recent reviews of implementation frameworks highlighted their limited use in research and practice (Moullin *et al.*, 2020). One of the problems is the challenge for researchers to choose from a growing number of frameworks: recent reviews identified over 100 frameworks used in implementation research (Birken *et al.*, 2017) and 16 frameworks for assessment of health systems governance (Pyone *et al.*, 2017). The tools that could help researchers are Theory, Model, and Framework Comparison and Selection Tool (T-CaST), which defines specific implementation framework selection criteria, and Dissemination & Implementation Models Webtool, an interactive resource designed to help researchers and practitioners navigate models (frameworks) in health research and practice through planning, selecting, combining, adapting, using and linking to measures (Birken *et al.*, 2018).

There are also concerns that research frameworks are not used optimally, for example “where it is applied conceptually, but not operationalized or incorporated throughout the phases of an implementation effort, such as limited use to guide research methods” (Moullin *et al.*, 2020). While there is published guidance on the use of several widely used frameworks (including CFIR, RE-AIM, EPIS), recent analysis concluded that there is a need “of explicit guidance on the use of frameworks generally” and provided ten recommendations for using conceptual and theoretical frameworks in implementation research and practice (Moullin *et al.*, 2020).

From 47 papers included in our IJHG (International Journal of Health Governance) analysis, 30 (63.8%) provided information about research frameworks, models or theories on which the authors based their research.

What could be done to improve completeness of reporting and thus add to the quality of papers published in general and in this journal specifically? There is a variety of strategies that journals can apply to enhance adherence to reporting guidelines in health research (Blanco *et al.*, 2019). IJHG has already implemented some of them by establishing in summer 2020 a group of methodology peer reviewers for knowledge synthesis publications – 12 information professionals/librarians with experience in systematic reviews (Ibragimova and Phagava, 2020). Among other suggested strategies is regular auditing of the quality of published papers and sharing this information with journal’s readers, members of Editorial Advisory Board and peer reviewers – we agree that “making such information available to the public would send a strong positive signal about openness, sharing data and the journal’s commitment to continuous quality improvement” (Moher, 2018).

We therefore turn to our future authors and encourage them to use appropriate reporting guidelines while preparing their submissions to the scientific journal and to be more explicit and precise when describing theoretical terminologies and constructs, which will help the peer reviewers in comprehensive appraisal of submitted manuscripts and thus contribute to the quality of publications.

Irina Ibragimova and Helen Phagava

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Further reading

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