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Published in:
International Journal of Stroke

DOI:
10.1111/ijs.12524

Editorial for *International Journal of Stroke*

"TIDieR-ing up" the reporting of interventions in stroke research: the importance of knowing what's in the 'black box'

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Imagine the frustration. You are a stroke clinician who endeavours to provide evidence-based care to your patients. You read a randomised trial of an intervention and after critically appraising it, decide that there is sufficiently strong evidence for the intervention to be implemented in your stroke service. You go back to the Methods section of the paper and look for the details of the intervention. It contains some broad details but they are insufficient for you to know how to use the intervention with your patients. You remain unclear about the number, length and content of the sessions, as well as the content of and materials used to train the clinicians in the intervention. What happens next?

Unfortunately this problem is not uncommon. One barrier to using evidence-based interventions, which surprisingly has received little attention to date, is that interventions are often not reported in sufficient detail to enable their use - rendering a large proportion of health research unusable and contributing to $100 billion per year of worldwide research waste (1).

While this is a problem for all interventions, perhaps unsurprisingly, the problem of poor intervention reporting is greater for non-pharmacological interventions. An analysis of the intervention reporting in 137 non-pharmacological interventions from 133 trials found that only 39% were described adequately in the publication, references, appendices or websites to enable the intervention to be replicated (2). Crucial intervention information, such as details about the procedure used, intensity of the intervention, or the physical and information materials used, were missing from the majority of trials - thereby preventing clinicians from using the interventions with their patients. While some additional details could be obtained by contacting the study authors (increasing the adequately described interventions to 59%), it is unrealistic to expect clinicians to perform this additional step and nor should they have to.

Incomplete intervention descriptions also hinder stroke research, frequently impeding others from replicating and building on existing research. Stroke rehabilitation has been described as a ‘black box’ (3), with limited knowledge about the effective components and features of the intervention (for example, optimal intensity, duration, and timing). A need for rehabilitation to be standardised based on the best evidence has been identified as one of the priorities of the stroke world agenda (4, 5). One of the ways that researchers can contribute to advancement of this goal is by adequately describing the interventions that they evaluate.

The inadequacy of intervention reporting is compounded as evidence is synthesised, such as in systematic reviews and clinical guidelines. This is partly due to information missing in primary trial reports, but also due to lack of awareness of the issue by those who write and publish reviews and guidelines. A recent analysis of a random sample of 60 systematic reviews of non-pharmacological stroke interventions found that most reviews were missing intervention information for the majority of items (6). The usability and interpretation of systematic reviews are therefore hampered by incomplete intervention descriptions, affecting both authors and users of systematic reviews. For systematic review authors, many steps in the review process, such as decisions about inclusion and meta-analysis, are made particularly difficult if they have to ‘guess’ at intervention details. Users of guidelines have identified that lack of knowledge in ‘how to do’ the interventions and unhelpful broad guideline recommendations were major barriers to implementing stroke guideline recommendations (7).

The causes of poor intervention reporting are likely to be multi-factorial. While initiatives to improve the reporting of trials and trial protocols such as the CONSORT (8) and SPIRIT (9) reporting statements have had some success, sufficient guidance about how to describe interventions has not existed. There is a lack of awareness among authors about what comprises a complete intervention description as well as a lack of attention to this issue by peer reviewers and editors (10) and in journal instructions to authors (11).

Part of the solution to poor intervention reporting is to provide authors with guidance about how to structure accounts of their interventions. In 2014, the Template for Intervention Description and Replication (TIDieR) checklist and guide was published (12). TIDieR is an official extension of the CONSORT statement (item 5) and the SPIRIT statement (item 11) and was designed to be used in conjunction with these statements. While the emphasis of TIDieR is on its use with randomised trials, it can be used with any evaluative study design, including systematic reviews. The TIDieR guide acknowledges that providing complete intervention descriptions may increase the word count of a paper and offers suggestions for how authors may manage this, including providing details in published protocols and online supplementary materials - which 75% of journals now have the capacity to host (11).

We urge the stroke research community, including authors, peer reviewers and journal editors, to ensure that full and detailed accounts of study interventions are provided in publications so that stroke patients can receive evidence-based care.

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