Reviewer’s report

Title: MAGnesium sulphate for fetal neuroprotection to prevent Cerebral Palsy (MAG-CP) - Implementation of a national guideline in Canada

Version: 0 Date: 04 Jul 2017

Reviewer: Anna Gagliardi

Reviewer's report:

Hello:

Many thanks for the opportunity to review this interesting manuscript. Following are suggestions to clarify essential details about the objectives, and intervention design and evaluation so that it is more apparent to readers what was done, how they can apply the findings, and the contribution of this work to the field of implementation science.

INTRO

* The reporting of weeks of gestation (i.e. value with a superscript number) will not be understood by non-experts - is there another way to report this?

* Line 68-69 provide some statistics to be explicit about safety and effectiveness as deduced by meta-analyses

* Include references and/or elaborate on details for assertions, i.e. sentence ending line 72 (controversies), line 74 (not routinely delivered) and line 75-76 (how is 'managed knowledge translation' defined?)

* Line 78 - instead of referring to 'optimal' use just specify what is recommended

* Line 79 - why is 80% the target or benchmark? Elaborate and provide a reference

* Line 80 - exploring adverse effects leads the reader to believe that the purpose of this research is to evaluate a clinical intervention (to establish safety) rather than a behavioural intervention - presumably clinical effectiveness and safety would have been established before investing resources in KT to disseminate/implement knowledge and promote use of MgSO4 - therefore the objectives are confusing

* Consider reporting safety data in a separate manuscript

* Overall, the Intro is very brief; it would be useful to include evidence from Canada and elsewhere demonstrating that MgSO4 is not used, what is known about determinants or
barriers/facilitators of use, etc. since these details are essential to informing the design of any KT intervention

METHODS

* Any manuscript describing a behavioural intervention should mention and reference reporting standards that were employed such as WIDER, StaRI, TIDieR or SQUIRE (for quality improvement)

* Any manuscript describing the development and evaluation of a KT intervention should describe and reference the theory or theoretical rational upon which the intervention was based (see WIDER) or Nilsen Implement Sci 2015 on implementation theories, models and frameworks

* Justify use of research design employed

* Justify use of a multifaceted intervention since Squires Implement Sci 2014 meta-analysis showed that single interventions can have similar impact to multi-faceted interventions

* Justify why an educational intervention was employed given that systematic reviews show that educational strategies have a small impact on behaviour; it is insufficient to say that benefits/challenges of the interventions were published previously - this manuscript should be self-contained and provide the reader with enough information to understand the rationale and design of the intervention employed

* Line 89 "The KT consisted of…" would be more appropriately referred to as "The intervention consisted of…”

* Provide the reader with details about AdvancingIn and clarify any conflicts of interest - are the members of the research team the executives?

* Provide more details about sampling and recruitment, and a calculation or estimate of how many participants were needed

* Line 120 - provide more detail about how sites tracked their KT activity - what does this mean?

* Line 167 - define or specify criteria used to distinguish highly or less engaged and the process that was used to confer these designations

* The Methods are somewhat confusing because there were multiple components and it is not readily clear how they were linked or complementary, or what is meant by pre and post or
eres or epochs - consider using more sub-titles in the Methods for essential elements such as sampling and recruitment, data collection, data analysis, etc.

RESULTS

* Use sub-titles to separate the reporting of data for different study components or impacts/outcomes that were assessed

* An alternative option is to split the findings across more than one manuscript, which may also help to simplify/clarify the Methods

* Consider more judicious use of in-manuscript and online-only tables/files

DISCUSSION

* To what is the "significant increase" attributed given that the intervention was comprised of multiple components?

* Line 344 - the Straus article published in 2013 may state that multifaceted interventions are more effective than single interventions but the most recent and robust evidence (Squires 2014) disagrees

* Many of the references cited are quite old, i.e. line 352 reference #35 is 1995; discuss the findings of this study in relation to more current evidence

* Line 362 - this is certainly not the first study to report a multicentre KT initiative - do the authors mean in relation to MgSO4 use?

* In the discussion of limitations add that theory or pre-established barriers were not used to select and tailor intervention design, and there was no evaluation of implementation fidelity, and no qualitative component to more thoroughly assess why/how the intervention worked; also discuss the generalizability/transferability of the findings

* Comment on the overall contribution to the field of implementation science

* Include a section for ongoing research that is warranted given these findings

Level of interest
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests
Quality of written English
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