Reviewer’s report

Title: Stillbirths: How should its rate be reported, its disability-adjusted-life-years (DALY), and stillbirths adjusted life expectancy

Version: 0 Date: 10 Jan 2019

Reviewer: Birgit Arabin

Reviewer's report:

GENERAL OVERVIEW, ORIGINALITY

In this study the author stresses that stillbirth rates almost equal neonatal mortality rates, yet have not received equal attention. They try to adjust life expectancy by stillbirths/live births and try to limit errors when comparing health care statistics and outcomes in different countries. This is an essential consideration and important for estimating global health (in) equalities.

APPROACH

ABSTRACT: The abstract is well structured and easy to understand even if the manuscript does not follow standard rules of research publications. Abbreviations are generally not welcome in abstracts such as MDG which should be explicitly written.

INTRODUCTION: In the second paragraph, page 3, the author states that the stillborn rate reflects a country's health to a greater extent than life expectancy - but possibly it should be "health care system" in place of "health"?

On page 4 the author argues that "most experts believe that fetuses "fully develop into sentient beings by that time (28 weeks) and morally deserve to be included into population measures of health". Since the author seems to be a scientist of economics, he might not know that the literature he cites is somehow out ruled. In terms of ethics the ethical concept of the fetus as a patient should meanwhile replace the discourse of "unborn child" when that phrase is used normatively (McCullough and Chervenak: A critical analysis of the concept and discourse of 'unborn child'. Am J Bioeth. 2008 Jul;8(7):34-9).

In term of science it is well recognized that between 20 and 24 weeks, thalamo-cortical fibres establish synaptic connections with dentritic processes of neocortical neurons. Thereafter, it is likely that the fetus "experiences" touch and pain (Lloyd-Thomas and Fitzgerald: Do fetuses feel pain? Reflex responses do not necessarily signify pain. BMJ. 1996; 313: 797-8). It is accepted that fetuses and newborns perceive pain which can be acute and chronic or physiologic, inflammatory, neuropathic, or visceral. The inability to communicate does not mean that there is
no pain or need of treatment (Anand et al. Summary proceedings from the neonatal pain control group. Pediatrics. 2006;117:S9-S22). Stress responses are characterized by endocrine, autonomic, immunological or behavioral changes and can occur much earlier in both fetuses and newborns (Hall and Anand: Pain management in newborns. Clin Perinatol. 2014;41:895-924). In addition, this sole argument of pain reception is insufficient because a "human soul" does not only depend on pain experience but the complete sensual pattern of feeling, hearing, tasting and even seeing which all start in utero and still develops also after birth. Therefore, it is hard to understand why >28 gestational weeks is used as a cut-off limit to classify stillbirths. Viability in Western countries is already present between 22 and 24 gestational weeks. The authors might argue differently that the average viability in MDG developing countries is higher than in highly developed countries and for an international comparison 28 weeks had been chosen due to pragmatic reasons.

Since the paper is already quite long, repetitions should be avoided and the last paragraph of the introduction should be limited to the first sentence related to the aim of the study and not already explain the terms 2A-3B. These should be explained as headings in the main section. However, the authors should state that this paper is a kind of review proposing new aspects for classification.

METHODS, RESULTS: At first the author should adapt the headings by the terms previously cited at the end of the introduction so that the reader knows the essence by reading. The whole section from 2A-3B is too long, mainly part 3A and should be critically revised for unnecessary repetitions - also with respect to the Tables.

Within the legends of the Tables the author should state on which reference the data are based on (e.g. is it reference 4 or 6?). In general, all relative numbers in % should be combined with the associated absolute numbers both in the text and within Tables. On page 9 the abbreviation viz. should be abolished and replaced by namely, equally on page 12. On page 10, line 6 "countries" is doubled, again the relative numbers should be combined with the absolute ratios they derive from.

ADEQUACY OF THE DISCUSSION

The "Discussion" should be placed before the "Conclusions". In general, any discussion could be better structured by using the following headings and to be precise in the arguments. Possibly the authors find some arguments for each aspect. This would better structure the whole paper where the limits between results and discussion within the main part are not always clear.
MAIN FINDINGS:

MEANING OF THE FINDINGS, RESEARCH IMPLICATIONS

CLINICAL IMPLICATIONS

STRENGTH AND WEAKNESSES

CONCLUSIONS

Wording should be improved in the both sections, e.g. the last sentence… Its difference from the traditional life expectancy "reflects" (not gives) a decrease in life expectancy. And the We "propose" (not use) it to obtain….

CONCLUSION OF THIS REVIEW

This paper is based on a proposal for a re-definition of stillbirths related to total livebirths ad to include this definition for calculations of DALYS. This is worthwhile to consider and therefore the paper should be accepted. However, some parts of this paper are still difficult to read and should be strictly summarized to the most essential aspects whereby repetitions should be avoided and headings be precise.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

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