Reviewer's report

Title: Factors associated with data quality of the Routine Health Information System in Benin

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Reviewer: Francoise Renard

Reviewer's report:

Review of the mansuscript “Factors associated with data quality of the routine information system in Benin”, Ahananzo & all.

This paper examines some of the human factors associated with the quality of the data of routine health information system. It is an important subject, since health indicators are key tools for health policy planning, and it is certainly appropriate to evaluate it in the context of developing countries, where resources are scare and need to be used optimally.

However, this paper present important limitations for which we recommend major revisions.

Overall : the paper need to be reviewed for English, preferably by an English native speaker.

Major revisions

Detailed comments.

Introduction

P3 & 1 L6; the word “exactictude” used by Statistics Canada( in the cited reference) is defined as such : “Par exactitude des données statistiques, on entend la mesure dans laquelle l'information décrit bien le phénomène qu'elle doit mesurer.” This concept correspond to the validity and not to “accuracy”, this latter being more related to the precision, which is less important than validity for the quality of health information.

P3&2L3: “insufficient quality” : confusing since quality was defined just before as a set of 3 characteristics, including comprehensiveness;

P4&2 : As the authors said, RHIS performance is affected by organizational, technical and behavioural factors. However, it should be specified which type(s) of factors this particular study intends to measure.

Methods

P5&4 :” The techniques and tools used included a document review with a processing form to assess the quality of the data”. Not clear to me: what did they review, the summary reports compared to the individual records linked to it ? How many items were on the documents ?
It would be easier to understand with a little bit information on the content; maybe the authors could provide the documents, and the evaluation form.

The method used (LQAS) is original, and, being cheap and parsimonious, well adapted to the context of resource limitation. However, the description of the method is not clear to me.

Unclear P6&2: “The quality of the data batch was assessed using the LQAS method with \( n=32 \) and \( d^*+1=3 \) (\( n \) size of the sample and \( d^*+1 \): maximum number of defective units expected per sample, \( N \) large, \( P_0=20\% \), \( N \) being the size of the batch and \( P_0 \) maximum proportion of defective units) [8-10].”

“Data comprehensiveness was defined as the “availability of the data across all of the documents in which it must be provided” for the twelve months. If the document had not been produced by the health worker, the data was considered incomplete.” Does this mean that the data was considered incomplete only if a document was lacking or if an item on a document was lacking?

Results:
In the section ‘univariate analysis’ : this section should be totally reviewed.
Results should be displayed in a table.
The association measure used is not specified, is it a hazard ratio?
The strength of association (hazard ratio, rate ratio or etc....) is not displayed, only the \( p \) value is presented, which is not a convenient way of displaying the results. From a low \( p \) value, we just know that there is a low probability of being wrong when claiming the results between groups are different. We don’t know nothing about the magnitude of the difference, which is the most important thing. An indicator of difference is however presented, this is the median number of samples prior to batch rejection; this latter is presented with confidence interval boundaries that are largely overlapping, which contrasts with the conclusions resulting from the low \( p \) values.

P7, & 2, L5: “There was no significant difference as concerns the average score for work engagement (\( p=0.06 \)).” I would suggest more nuance, the 0.05 threshold is not a magic line, and results with a 0.06 \( p \) value should be regarded as almost significant, maybe the lack of significance is due to the small number. Once again, the strength of the association should be displayed, the \( p \) value being only an additional information.

It is a bit disappointing that no multivariate analysis has been performed. Of course the number are quite small but at least some variables could have been tested together;
The section “results of the focus group” is very interesting and highlight some of the organizational problems that can hamper the fulfil of the reports. A very high number of items to fulfil (as mentioned by the respondents), in a context of scarcity of resources, can be an unrealistic choice.
Discussion
Maybe one of the item to be discussed is the need for an evaluation of the pertinence, workload and added value of the items in the forms. A short form with pertinent items that health workers understand would certainly improve their compliance.

P12&1: don’t repeat the sentence you already cited above.

P12&2I5: “moreover…..mistake”: I don’t understand why?

P12&3L1: "organisational factors such as availability of resources were not associated with the quality of the data"?? This is not what comes out from the focus group! they all say they have no time, they are interrupted by other tasks.

Conclusions:
- Should be more limited: this study identified some of the factors…;
- Would be good to repeat which factors were identified

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No conflict of interest