Author’s response to reviews

Title: Low birthweight in Rural Cameroon: an analysis of a cut-off value.

Authors:

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Reviewer reports:

Abdulai Abubakari (Reviewer 1)

Reviewer’s comment 1: Authors are not able to provide enough basis for the proposed cut-off-point of 2700g in the manuscript. They claimed that babies who were born with birth weight between 2500g and 2700g were not adequately catered for but the basis of this claim is unavailable in the results or the literature review provided. Therefore, it is difficult to assess the merit of the manuscript without this missing information.

Author’s comment 1: Thank you for your pertinent remark. Birthweight is the widely available tool used in Cameroon to classify children into risk categories after birth. As at now, the traditional cut-off of low birthweight (LBW) of 2500g as suggested by WHO is used in Cameroon, though without local validation. However, earlier studies have demonstrated a regional variation in the cut-off for low birthweight. Our major concern is children might be misclassified as belonging to a “normal” as opposed to a “low birthweight” category. We therefore set out to see if the local threshold as defined by WHO is actually 2500g in our study population. If not, are there any increased adverse outcome in LBW misclassified children as normal.

To do this, we had to define a statistical cut-off for low birthweight (LBW); which represents less than 10th percentile of all birthweights in our study population. We went further to verify if babies born below this cut-off were at risk of adverse neonatal complications. Indeed, our analysis showed that these babies (with birthweights below 2700g) were either more likely to be asphyxiated at the 5th minute of life or stillborn compared with heavier babies (table 5). Even though a moderate level of agreement was noted between our cut-off value for LBW (2700g) and
the traditional cut-off of 2500g, our cut-off value for LBW strongly agreed with the locally defined cut-off of 2600g proposed by Njim and colleagues (Njim T, Atashili J, Mbu R, Choukem S-P. Low birth weight in a sub-urban area of Cameroon: an analysis of the clinical cut-off, incidence, predictors and complications. BMC Pregnancy Childbirth. 2015;15)

However, due to the retrospective design of our study, it was not possible to evaluate if these babies were at risk of other complications such as infection, admission to the neonatal unit, neurological complications, and hypoglycaemia for instance. This has been included as a limitation to our study (study limitation; line 3-5). Hence, we recommended a prospective study to further validate these results (conclusion section; line 5).

Further analysis showed that babies with birth weights between 2500g and <2700g were at a higher risk of stillbirth compared with heavier babies. Since birth weights of > 2500g are currently considered normal, as recommended by the WHO, it is possible that these babies are not considered to be at risk of the complications of low birthweight and might therefore not be receiving adequate care. This led to the proposition that babies in this grey area (2500 – 2700g) should be considered a LBW to ensure that they receive adequate care.

Yogavijayan Kandasamy (Reviewer 2):

Reviewer’s comment 1: Interesting study to improve outcome of neonates in a rural Cameroon region. The authors need to mention that birth weight, despite its limitation, is a relatively reliable method to determine which neonates are at risk of mortality. This is more so in regions where the accurate gestation is unknown.

Authors’ response 1: Thank you very much for such pertinent comment. This point has been highlighted in the last paragraph of the discussion section.

Action: Paragraph 4, lines 1 - 5 of the discussion section now reads: “Despite its limitations, birthweight remains a relatively reliable parameter to determine the risk of neonatal mortality. This is especially true in rural communities where the use of first trimester ultrasonography for gestational dating is practically none-existent. Therefore, the records of gestational ages (based on the clients’ last menstrual periods) entered into the delivery registers might not be accurate as it might have been subject to recall bias.

Reviewer’s comment 2: Rather than calling the 2700 g limit as "new clinical cut-off for LBW", perhaps the authors could say that they wanted to establish which neonates were small for gestational age (i.e < 10th centile)
Authors’ response 2: Thank you very much for this comment. The World Health Organisation defines low birthweight as the weight of a baby below the recommended cut-off, 2500g, regardless of the gestational age. On the other hand, in defining small-for-gestational age, the birthweight is defined as a function of the gestational age. We used the terminology “low birthweight” because only the weight of the neonate was chosen to define the cut-off for low birth weight in this study.

Reviewer’s comment 3: The authors should also recognise that the gestation recorded in the records may not be very accurate, in the absence of first trimester scans. The authors have to acknowledge that gestation plays an important role too in neonatal survival, and merely increases to new LBW weight to 2700 g could have only limited value in terms of reducing neonatal mortality and morbidity.

Authors’ response 3: Thank you for your pertinent comment. This has been acknowledged in the discussion section.

Action: Paragraph 4, lines 5 – 8 of the discussion section now reads: “However, the length of the gestation is also crucial in predicting neonatal morbidity and mortality [17], and simply adopting the new cut-off value of 2700g for the LBW might have limited value in curbing neonatal morbidity and mortality in these rural communities.”

Reviewer’s comment 4: The abstract, main manuscript and references could benefit from editing.

Authors’ response 4: Thank you. The abstract, main text and references have been ameliorated accordingly.