

Reviewer #1:

Dear Professor:

Thank you very much for your valuable time in reviewing our manuscript. Your comments are very professional and were helpful to us. We have made the corresponding revisions, and our responses are as follows:

**Issue 1. In the conclusions of abstract and core tips the authors highlighted that the formula was applied to predicting total liver weight (TLW), instead of SLW, which makes confusing.**

Response: Dear Professor, your comment is to the point. This is a very serious error and must be corrected. We have revised it in the corresponding part of the manuscript (conclusion section of the abstract: page 5; core tip: page 5). Thank you again for your preciseness and professionalism.

**Issue 2. For the clinic evidence of the formula, are there any data supporting the application of this new formula in clinic can better improve the match of liver size?**

Response: Dear Professor, thank you very much. This comment is very valuable and important. We especially hope to carry out clinical verification of our new formula. Theoretically, the current formula is the most suitable for recipients assigned with fatty change donor liver in split liver transplantation (SLT), and it is anticipated to reduce the risk of small-for-size syndrome (SFSS). However, we apologize for not having enough data for this analysis. To date, for this prospective study, approximately 216 cases of liver transplantation have been completed, including 207 cases of whole liver transplantation and 9 cases of split liver transplantation. For that, we also considered the retrospective inclusion of SLT patients but were limited by the

small sample size and the absence of important variables, such as the results of ultrasound examination and histological assessment of donor liver. We apologize that we are unable to carry out the relevant verification at present. However, we plan to launch multicentre research in the next stage to expand the sample size to verify the clinical value of our formula.

**Issue 3. Why did the authors decide that SLW formula using Sex, BSA, and FLUS as parameters? Factors such as BMI and BW are also critical important for TLW in deceased donors.**

Response: Thank you for your question, Professor. As you mentioned, several variables, including BMI and BW, have a significant impact on the total liver weight (TLW). In this study, simple linear regression analysis showed that sex, BH, BW, BMI, BSA and fatty liver (FL) significantly impacted TLW ( $P < 0.001$ ) (Table 2). Therefore, we incorporated the above variables into multiple linear regression analysis according to the suggestions of statistics professor Min Jiang, who is a coauthor of this manuscript, and the results showed that sex, FL<sub>US</sub>, and anthropometrics (BH, BW, BMI and BSA) were included in the model. As BH, BW, BMI and BSA are collinear variables, we incorporated these four variables into multiple linear regression analysis to construct the corresponding models respectively (Table 4). Finally, we found that the fitting degree and accuracy of the model based on BSA were the best. Therefore, we decided on the SLW formula using sex, BSA, and FLUS as parameters.

**Issue 4. The location of Table 2 should be shown in the manuscript.**

Response: Dear Professor, we read the full text repeatedly, and we found that 'Table 4' should be revised to 'Table 2' in the results subsection '**Impact Factors Related to the TLW of Deceased Donors**' of the manuscript. We

think that this is what you were referring to. We have made it correct, please see line 19 of page 9 of our manuscript. We apologize for our mistake and thank you for your patience and helpful reminder.

**Issue 5. National Health Commision (not right, Commission).**

Response: Dear Professor, we have corrected and replaced it with 'National Health Commission'; please see page 2 of our manuscript.

**Issue 6. Grammar error, there were no relevant SLW model to predict liver size.**

Response: Dear Professor, we have revised the sentence to read 'there are no relevant SLW models for predicting liver size.', please check the background section of the abstract in the manuscript (page 4).

**Issue 7. Page 13: (180 g, p <0.001), with Capital P for consistency.**

Response: Dear Professor, we have replaced it with '(180 g, P <0.001)'; please see line 16 of page 13 of the manuscript.

*Science editor*

No comment

*Company editor-in-chief*

Before final acceptance, uniform presentation should be used for figures showing the same or similar contents; for example, "Figure 1 Pathological changes of atrophic gastritis after treatment. A: ...; B: ...; C: ...; D: ...; E: ...; F: ...;

G: ...".

Dear Company Editor- in-Chief,

Thank you for your rigorous scholarship and professionalism. We have modified the presentation of Figure 3, which was consistent with Figure 1 and Figure 2, with 'Figure 3 Total liver weight comparison of different groups according to the degree of fatty change of donor livers. A: Groups according to the degree of fatty change of 0, (0<, <5%), (5%-20%) and > 20%; B: Groups according to the degree of fatty change of <5%, (5%-20%) and > 20%). Multiple linear regression analysis including parameters of sex, BSA, and FL<sub>PB</sub>, which were dummy variables divided into groups according to the degree of fatty change in donor livers, was used. FL<sub>PB</sub>, fatty liver diagnosed by pathological biopsy.' Please check the 68823-Image File.