Author's response to reviews

Title: The impact of preoperative patient characteristics on the cost-effectiveness of total hip replacement: a cohort study

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RESPONSE TO REVIEWER’S COMMENTS:

MANY THANKS FOR THE REVIEWERS. THEIR COMMENTS ARE NOW ADDRESSED.

Reviewer #1: Page 1-2

MODIFICATIONS IN THE TEXT ARE HIGHLIGHTED IN YELLOW.

**Reviewer #1:**

The authors have responded clearly to my comments about the previous submission. I consider that all of these have now been answered. The additional comments set out below seek clarification about the data and are to ensure this is fully represented. I recommend acceptance, subject to these points being answered.

Major Compulsory Revisions:

Table 1(2) – While the total sample is 292, some of the groups of categories in this table don’t sum to that figure. The categories of previous joint procedures add up to 291, marital status to 289, housing situation to 288 and Charlson score to 291. If this is a typographical error, please correct. If it reflects missing data then the observations should be dropped throughout, or the missing data imputed, or a robustness check is needed to show that dropping these observations, when using the final specifications, does not significantly alter the results. Whichever approach is used needs also to be justified in the manuscript as appropriate.

**Response:** You correctly observe that this is due to missing data. We included an additional column in Table that shows the missing values for each covariate. In general missing values are very low (under 1%) and we did not want to exclude cases just because of a missing value in one of many covariates, e.g., in one secondary diagnosis. Therefore we keep the 292 values in our cost- and effectiveness-analysis but have a lower number of observations (n=271) in the regression analysis. After all diagnostic tests we found that we can afford losing the 21 observations for the regressions. Imputation was finally also no option for us, as imputation could induce other bias. Therefore we kept the original dataset. We comment this decision now in the methods section.

**CHANGES:** For 21 patients we had some missing data in covariates. Diagnostic tests showed that we can afford losing those cases for regression analyses. As imputation could induce another bias in the analysis, we kept the reduced dataset for regression and worked with the full dataset in cost- and effectiveness analyses where a comprehensive set of covariates is not necessary. We included an additional column for missing values in Table 1.

Minor Essential Revisions:

Table 2 – Similarly to table 1, the totals given in this table do not all reflect the sum of their respective columns (5) or rows (4). These are generally very small differences that look like arithmetic errors but please recheck the figures in the table are accurate and totals reflect the values. If the differences are due to rounding error or something similar, please add a footnote to this effect.
Response: We added a footnote for the rounding error effect. We could not change this because when we are on case level in other tables we calculated also with Euro-Cents to be accurate, but for the sake of simplicity we decided to round in the cost table. Otherwise actual values would be difficult to read quickly.

CHANGES: Footnote is added: *differences in the totals fields are due to rounding errors

Table 3 – Please add the number of observations with each model or as a footnote to the table.
Response: In our regression analyses we have 271 of 292 patients included in cost-effectiveness analyses. After all diagnostic tests we determined that we can afford losing 21 observations in our regression analyses. Imputing the values for missing data to include them in regression analysis was not our preferred option as this could induce another bias in the analysis.

CHANGES: We included the number of observations used in the regression analysis: n=271