Response to Reviewer 3

We would like to sincerely thank the Reviewer for the thorough evaluation of our manuscript and for the insightful and constructive comments. We greatly appreciate the time and effort invested in improving the quality and clarity of our paper. All suggestions have been carefully considered, and the manuscript has been revised accordingly. Below, we provide detailed responses to each comment. Are changes in manuscript are made in red.

1)The cross-sectional design should be more clearly emphasized throughout the manuscript. Some statements in the Discussion imply causal relationships between nutritional status, self-care behaviours, and clinical outcomes, which cannot be established with this design.

Response:

We want to thank for the helpful suggestion. The paper has been revised.

2)The study includes only 100 participants from a single centre. The manuscript would benefit from a brief justification of the sample size or a discussion regarding statistical power, particularly for multivariate regression analyses.

Response:

The sample size was determined by the number of eligible patients meeting the inclusion criteria during the study period. Therefore, a convenience sampling approach was applied. We recognize that this method does not allow for a priori sample size calculation, however, it reflects real-world clinical practice and provides insight into a well-defined and clinically relevant patient group. Regarding the use of multivariable regression, we took care to limit the number of variables included in the model to those that were clinically justified and significant in univariate analyses, in order to reduce the risk of model overfitting. Multicollinearity was assessed using the Variance Inflation Factor - VIF. The VIF values ranged from 1.096 to 1.177, indicating no evidence of multicollinearity among the independent variables.

3)Several laboratory parameters appear to have been available only for a subset of participants (e.g., albumin, lipid profile). The manuscript should clarify the extent of missing data and how this may have influenced the analyses.

Response:

Some laboratory parameters (e.g., albumin, lipid profile) were available only for a subset of participants, as these tests were performed based on clinical indications rather than as part of a standardized study protocol. In the statistical analyses, we applied an available-case, meaning that each analysis included all participants for whom the relevant variables were available. For example, correlations between BMI and platelet count were calculated using all cases with both BMI and platelet measurements, regardless of the availability of other laboratory parameters. We acknowledge that this approach may result in varying sample sizes across analyses, which

has now been clarified in the revised manuscript. We have also noted this as a limitation, as missing data may have influenced the precision of some estimates.

4)The selection of variables included in the multivariate regression model requires further clarification. It would be helpful to explain whether variables were selected based on clinical relevance, univariate significance, or another predefined strategy.

Response:

In the present study, variables were selected based on a combination of clinical relevance and results of univariate analyses. Specifically, variables that were considered clinically meaningful and showed an association with the dependent variable in univariate analyses were included in the multivariable model. This approach was applied to ensure both clinical interpretability and to reduce the risk of overfitting, given the sample size. The description of this procedure has been clarified in the revised Methods section.

5)The interpretation of BMI as a surrogate of better nutritional status should be approached more cautiously. Given the possibility of fluid retention and altered body composition in heart failure patients, the Discussion should more clearly acknowledge these limitations.

Response:

We fully agree that the interpretation of BMI as a surrogate marker of nutritional status in patients with heart failure should be approached with caution. As noted, BMI does not distinguish between fat mass, lean body mass, and fluid retention, which are particularly relevant in this patient population. Therefore, it may not accurately reflect true nutritional status. In response to this comment, we have revised the Discussion section to more clearly acknowledge these limitations and to emphasize that BMI should be interpreted as a simplified and indirect measure, particularly in the context of heart failure.

6)The manuscript reports the use of a reversed and standardized scoring procedure for the 9-EHFScBS. The Methods section should describe this transformation more clearly to ensure reproducibility.

Response:

In response, we have revised the Methods section to provide a more detailed description of the transformation procedure. Specifically, the original score (ranging from 9 to 45, with lower scores indicating better self-care) was reversed and standardized to a 0–100 scale according to the method proposed by Vellone et al., with higher scores indicating better self-care. The manuscript has been updated accordingly.

7)Several sentences could be streamlined for clarity and conciseness, particularly in the Introduction and Discussion sections.

Response:

In response, we have revised the discussion section.

8)Statistical results should be reported consistently (e.g., p-values, confidence intervals, and test statistics). Some tables mix different reporting formats.

Response:

We have updated the results section. We hope that, in their current form, they are clearer and more accurate.

9)Tables 6–8 contain extensive information that may reduce readability. The authors should simplify or summarize the most relevant results. Also, the captions of Figures 1 and 2 should more clearly describe what is being displayed and how the variables are distributed.

Response:

We have removed Tables 4, 5, 6, 8, 9 and incorporated the corresponding results into the main text of the Results section to improve readability and conciseness.

10)The authors should revise for mistypo.

Response:

We want to thank for thorough review our paper —the entire manuscript has been checked for stylistic errors and typos.

11)Some sections of the Discussion reiterate results rather than interpret them. The authors may consider shortening these parts and focusing more on clinical implications.

Response:

We have revised and shortened these sections to reduce repetition of the results and to place greater emphasis on the clinical interpretation and implications of the findings.

We believe that these changes have improved the clarity and readability of the Discussion.