Reply to the letter: Comment on "Relationship between the number of comorbidities, quality of life, and cardiac autonomic modulation in patients with coronary disease: a cross-sectional study"

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Dear Editor,

We read with great appreciation the comment by Wang et al.[1] for our original article entitled "Relationship between the number of comorbidities, quality of life, and cardiac autonomic modulation in patients with coronary disease: a cross-sectional study[2]." We would like to thank the authors for their interest in our article and their time to express their concerns.

Indeed, as very well pointed out by the authors, heart rate is affected by many factors, and, consequently, heart rate variability (HRV)[3] that was used in the study to evaluate cardiac autonomic modulation[4]. However, HRV is a widely used instrument, and when it follows patterns of the capture of RR intervals, analyses, and interpretations[4], it provides important information regarding cardiac autonomic modulation.

Wang et al.[1] noted that heart rate is affected by thyroid, pituitary, kidney, and adrenal diseases[3] and that these factors should be considered when using HRV. We agree with this statement, so we had concerned to assess the presence of these comorbidities in our sample using the "Self-Administered Comorbidity Questionnaire[5]." We would like to highlight that only one participant had kidney disease, as shown in Table 2. Furthermore, among those who reported other comorbidities (n=5), none had any of the aforementioned conditions. Therefore, we can state that these diseases probably did not significantly impact our results.

Regarding the baseline data of the sample, Wang et al.[1] suggested the presentation of factors such as occupation, culture, income, and permanent residence, as they could impact the quality of life levels. We understand the importance of this information, and we have collected data about the current occupation and permanent residence of the participants. Of the participants included in the study, 85% were retired, and only one of them had permanent residence in another city. As the sample seems relatively homogeneous and we judged that it would not probably affect the interpretation of our findings, we have not included these data in the article; however, we have appreciated the opportunity to share this information here. We also took the opportunity to perform correlation analyses controlling for occupation and permanent residence. In this new analysis, a significant negative correlation between the number of comorbidities and the pain domain was also found (r=-0.444; p=0.03). Therefore, we conclude that these factors did not alter our main finding that the number of comorbidities is inversely related to the pain domain of the Medical Outcome Study 36-Item Short Form Health Survey (SF-36)[6].

Finally, Wang et al.[1] suggested that we should improve the baseline data and conduct random grouping so that the observation group (the experimental group) and the control group were balanced. However, we would like to emphasize that in our study only one group composed of individuals diagnosed with coronary artery disease, patients from a cardiac rehabilitation program, was included, and we performed correlation analyses between the number of comorbidities, HRV indexes, and quality of life, as assessed by the SF-36[6].

We are thankful for the letter. This discussion extends perspectives for future investigations.

AUTHORS' CONTRIBUTIONS

HBV: Conceptualization, Writing – original draft, Writing – review & editing. **VESS:** Conceptualization, Writing – original draft. **TRMB:** Conceptualization, Writing – original draft. **AFBB:** Conceptualization, Writing – review & editing. **LCMV:** Conceptualization, Writing – review & editing. **FMV:** Writing – original draft, Writing – review & editing. **MJLL:** Writing – review & editing. **LMV:** Writing – review & editing. **ACB:** Writing – review & editing.

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