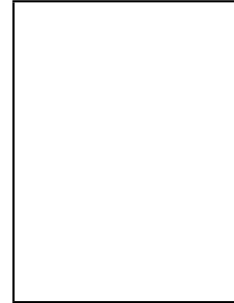


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Portuguese Validation of the Minnesota Living with Heart Failure Questionnaire**Validação para português do *Minnesota Living With Heart Failure Questionnaire***

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Heart failure (HF) is a significant public health challenge in Portugal. According to the recent PORTHOS study (*Estudo de Prevalência de Insuficiência Cardíaca em Portugal*), HF affects a significant proportion of the adult population >50 years of age (an estimated 16.5%) [1]. In 2014, HF accounted for 4.7% of all deaths in Portugal [2] and was responsible for approximately 19 000 hospitalizations nationwide [3]. Due to the ominous burden of this dangerous clinical syndrome on the population experts in Portugal have developed positions papers providing guidance on how best to manage these patients [4,5].

Multiple interventions going beyond HF drugs are now offered nationwide to improve the prognosis of this population (reducing HF hospitalizations and, for subsets of patients, mortality), comprising, but not limited to, cardiac rehabilitation [6], discussion and management by multidisciplinary teams [7], and catheter ablation of atrial fibrillation [8]. Auditing and local appraisal of services and results by each center is recommended as a part of continuous professional development and quality improvement but is only done sporadically. Hard clinical outcomes like all-cause mortality or hospitalizations may not always be feasible or may not be the best option in that setting. On the other hand, patient reported outcome measures are easy to obtain and provide a more reliable measure of patients' views on the intervention and treatment they have received. A pragmatic and validated instrument like the Minnesota Living with Heart Failure Questionnaire is ideally suited for that purpose, but for validity purposes a Portuguese translation with appropriately conducted validation processes is warranted.

In this issue of the *Portuguese Journal of Cardiology*, Marques et al. undertake this important task for the Portuguese cardiovascular community, utilizing data from a single-center prospective study with two samples of HF patients (294 patients in the validation sample), comprising both patients with reduced and preserved ejection fraction. Translation,

cultural adaptation and validation of the Minnesota Living with Heart Failure Questionnaire were performed in the study [9]. The Portuguese version of the questionnaire showed a reliable general factor and good internal consistency, with all the scores strongly associated with New York Heart Association functional class, and other consensual tools utilized in the HF population, like the Borg fatigue score and the six-minute walking distance.

The authors deserve to be commended for their important contribution to the Portuguese cardiovascular community, as it is expected for this instrument to be widely used in the coming decades. The impact will be important, as it will facilitate the development of auditing, and quality assurance of HF services across the country.

Conflicts of interest: No conflicts of interest to report on this topic.

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Data Sharing Statement: Not applicable

References

1. Baptista R, Silva Cardoso J, Canhão H, et al. Portuguese Heart Failure Prevalence Observational Study (PORTHOS) rationale and design - A population-based study. *Rev Port Cardiol.* 2023;42(12):985-995. doi: 10.1016/j.repc.2023.10.004.
2. Gouveia M, Ascensão R, Fiorentino F, et al. The current and future burden of heart failure in Portugal. *ESC Heart Fail.* 2019;6(2):254-261. doi: 10.1002/ehf2.12399.
3. Direção-Geral da Saúde. Portugal Doenças cerebro-cardiovasculares em números 2015. Programa Nacional para as doenças cerebro-cardiovasculares. Available from: <https://www.dgs.pt/em-destaque/portugal-doencas-cerebro-cardiovasculares-em-numeros-201511.aspx>.
4. Silva-Cardoso J, Moreira E, Tavares de Melo R, et al. A Portuguese expert panel position paper on the management of heart failure with preserved ejection fraction - Part I: Pathophysiology, diagnosis and treatment. *Rev Port Cardiol.* 2025;44(4):233-243. doi: 10.1016/j.repc.2024.11.011.
5. Silva-Cardoso J, Moreira E, Tavares de Melo R, et al. A Portuguese expert panel position paper on the management of heart failure with preserved ejection fraction - Part II: Unmet needs and organization of care in Portugal. *Rev Port Cardiol.* 2025;44(5):291-302. doi: 10.1016/j.repc.2024.12.004.
6. Schmidt C, Magalhães S, Gois Basilio P, et al. Home- versus centre-based EXercise InTervention in patients with Heart Failure (EXIT-HF trial): A pragmatic randomized controlled trial. *Rev Port Cardiol.* 2024;43(3):149-158. doi: 10.1016/j.repc.2023.05.013.
7. Calça R, Malho A, Domingos AT, et al. Multidisciplinary cardiorenal program for heart failure patients: Improving outcomes through comprehensive care. *Rev Port Cardiol.* 2025;44(3):179-187. doi: 10.1016/j.repc.2024.09.003.
8. Borges-Rosa J, Sousa PA, António N, Elvas L, Gonçalves L. Predictors of systolic function recovery after atrial fibrillation ablation in heart failure patients. *Rev Port Cardiol.* 2024;43(11):587-596. doi: 10.1016/j.repc.2024.02.008.
9. Marques I, Viamonte S, Severo M, et al. Quality of Life Scores Association with other Patient Reported Outcomes: Validating Minnesota Living with Heart Failure Questionnaire to Portuguese. *Rev Port Cardiol.* 2025;