

EDITORIAL

# Beyond Physical Impairment: The Role of Social Frailty in Heart Failure

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**G**lobally, heart failure (HF) is a leading cause of morbidity and mortality, with roughly 26 million people affected.<sup>1</sup> HF incidence is 10 per 1000 people after the age of 65 years, with 8.6% of men and 11.5% of women aged >80 years afflicted with HF.<sup>2</sup> Elderly adults with HF frequently have a high burden of comorbid medical conditions and impaired physical function.<sup>3–5</sup> Frailty, a syndrome of accelerated decline in physiologic reserve with increased susceptibility to adverse clinical outcomes, is highly prevalent among patients with HF.<sup>6,7</sup> Frailty can exist across multiple domains: physical, cognitive, and social.<sup>7</sup> Although several studies have previously highlighted the prognostic role of physical frailty and, to a lesser extent, cognitive frailty in patients with HF, the role of social frailty is not well understood.

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**See Article by Jujo et al.**

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Social frailty is conceptualized as being at risk of losing or having lost sufficient social support, activities, or resources required to fulfill basic social needs. As a society, social interaction is vitally important to human health, and prior research has shown that a lack of social relationships is associated with poor clinical outcomes, including all-cause mortality.<sup>8</sup> Research defining social frailty and its impact on clinical outcomes in elderly patients with HF is vitally important. To this end, the study by Jujo et al,<sup>9</sup> published in this issue of the *Journal of the American Heart Association (JAHA)*, describes the prognostic impact of

social frailty in elderly patients with HF in a multicenter prospective cohort of patients hospitalized for HF aged >65 years in Japan. The authors assessed social frailty through a short questionnaire proposed by Makizako et al,<sup>10</sup> evaluating the patient's social support, social activities, and living situation. The authors found that patients with social frailty were significantly older with worse New York Heart Association functional class. Furthermore, although there was no difference in prescribed guideline-directed medical therapies for HF across the 2 groups, patients with social frailty had a higher risk of all-cause mortality and HF readmission. Moreover, the inclusion of social frailty to a baseline risk model, including known risk factors for the composite outcome, provided additive prognostic information with a net reclassification improvement of 0.189 (95% CI, 0.063–0.316;  $P=0.003$ ). Taken together, these findings highlight the prognostic relevance of social frailty in patients with HF.

The authors should be congratulated for conducting this important study and highlighting the prognostic importance of social frailty in HF. The study was conducted in Japan, and although social interactions may vary across different cultures and societies, it is plausible that lack of social support and social frailty will adversely impact health in patients with HF across all societies. The findings by Jujo et al highlight the importance of assessing social frailty in routine management of HF.<sup>9</sup> An important next step for the same is to develop and validate instruments for evaluation of social frailty in patients with HF across different social settings. Although Jujo et al used a brief, 5-question survey<sup>10</sup> that may be used as a screening tool

**Key Words:** Editorials ■ elderly individuals ■ frailty ■ heart failure ■ social frailty

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The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

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for social frailty, more holistic tools that incorporate physical, psychological, and social domains of frailty, such as the Tilburg Frailty Indicator,<sup>11</sup> have also been used in patients with HF. Higher social frailty, as determined by the Tilburg Frailty Indicator, has also been associated with worse patient-reported outcomes, such as ability to self-care in older patients with HF.<sup>12</sup>

Several potential biologic mechanisms may underlie the association between social frailty and risk of adverse outcomes in patients with HF. Patients with high burden of social frailty may have less physical activity, higher burden of coexisting depression, or less social support for disease management, each of which could predispose to poor long-term outcomes.<sup>13</sup> HF self-care and social support have been targets for intervention, with mixed results. Graven et al investigated an intervention of social support and problem-solving training in patients with HF, and in a preliminary report the authors found significant improvements in self-care maintenance and self-care confidence with the intervention without assessment of clinical outcomes.<sup>14</sup> Bekelman et al investigated a collaborative intervention of both nursing and social worker care of HF symptoms and psychosocial symptoms and observed no difference in HF quality of life between the intervention and the control group, with decreased depressive symptoms and fatigue in the intervention arm.<sup>15</sup> Last, Heisler et al conducted a trial investigating reciprocal peer support in patients with HF and observed no differences in time-to-HF hospitalization, mortality, or measures of HF-specific quality of life or social support.<sup>16</sup> The results of these trials are inconsistent, and findings may have been impacted by poor participant engagement,<sup>16</sup> lack of an attention control group,<sup>15</sup> and high rates of loss to follow-up.<sup>14</sup> Future studies aimed at improving social frailty should focus on interventions that would enable high rates of participation and may include participation in social support groups, group exercise and physical rehabilitation sessions, and tele- or mobile-networking solutions.

In conclusion, the study by Jujo et al represents a major step forward in highlighting the prognostic implications of social frailty among patients with HF. We hope that future studies continue to validate and research optimal methods for the multidomain assessment of frailty across a diverse group of patients and investigate social frailty as a target for intervention in frail patients with HF.

## ARTICLE INFORMATION

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## REFERENCES

- Ambrosy AP, Fonarow GC, Butler J, Chioncel O, Greene SJ, Vaduganathan M, Nodari S, Lam CSP, Sato N, Shah AN, et al. The global health and economic burden of hospitalizations for heart failure: lessons learned from hospitalized heart failure registries. *J Am Coll Cardiol*. 2014;63:1123–1133.
- Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, Das SR, de Ferranti S, Després J-P, Fullerton HJ, et al. Executive summary: heart disease and stroke statistics–2016 update: a report from the American Heart Association. *Circulation*. 2016;133:447–454. doi: 10.1161/CIR.0000000000000366
- Afilalo J, Alexander KP, Mack MJ, Maurer MS, Green P, Allen LA, Popma JJ, Ferrucci L, Forman DE. Frailty assessment in the cardiovascular care of older adults. *J Am Coll Cardiol*. 2014;63:747–762. doi: 10.1016/j.jacc.2013.09.070
- Pandey A, Vaduganathan M, Arora S, Qamar A, Mentz RJ, Shah SJ, Chang PP, Russell SD, Rosamond WD, Caughey MC. Temporal trends in prevalence and prognostic implications of comorbidities among patients with acute decompensated heart failure: the ARIC study community surveillance. *Circulation*. 2020;142:230–243. doi: 10.1161/CIRCULATIONAHA.120.047019
- Segar MW, Singh S, Goyal P, Hummel SL, Maurer MS, Forman DE, Butler J, Pandey A. Prefrailty, impairment in physical function, and risk of incident heart failure among older adults. *J Am Geriatr Soc*. 2021. May 29 [pub ahead of print]. doi: 10.1111/jgs.17218
- Pandey A, Kitzman D, Whellan JB, Duncan PW, Mentz RJ, Pastva AM, Nelson MB, Upadhy B, Chen H, Reeves GR. Frailty among older decompensated heart failure patients: prevalence, association with patient-centered outcomes, and efficient detection methods. *JACC Heart Fail*. 2019;7:1079–1088.
- Pandey A, Kitzman D, Reeves G. Frailty is intertwined with heart failure: mechanisms, prevalence, prognosis, assessment, and management. *JACC Heart Fail*. 2019;7:1001–1011. doi: 10.1016/j.jchf.2019.10.005
- Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. *PLoS Med*. 2010;7:e1000316. doi: 10.1371/journal.pmed.1000316
- Jujo K, Kagiya N, Saito K, Kamiya K, Saito H, Ogasawara Y, Maekawa E, Konishi M, Kitai T, Iwata K, et al. Impact of social frailty in hospitalized elderly patients with heart failure: a FRAGILE-HF registry subanalysis. *J Am Heart Assoc*. 2021;10:e019954. doi: 10.1161/JAHA.120.019954
- Makizako H, Tsutsumimoto K, Shimada H, Arai H. Social frailty among community-dwelling older adults: recommended assessments and implications. *Ann Geriatr Med Res*. 2018;22:3–8. doi: 10.4235/agmr.2018.22.1.3
- Gobbens RJ, Luijckx KG, Wijnen-Sponselee MT, Schols JM. Toward a conceptual definition of frail community dwelling older people. *Nurs Outlook*. 2010;58:76–86. doi: 10.1016/j.outlook.2009.09.005
- Uchmanowicz I, Wleklík M, Gobbens RJ. Frailty syndrome and self-care ability in elderly patients with heart failure. *Clin Interv Aging*. 2015;10:871–877. doi: 10.2147/CIA.S83414
- Jünger J, Schellberg D, Müller-Tasch T, Raupp G, Zugck C, Haunstätter A, Zipfel S, Herzog W, Haass M. Depression increasingly predicts mortality in the course of congestive heart failure. *Eur J Heart Fail*. 2005;7:261–267. doi: 10.1016/j.ejheart.2004.05.011
- Graven LJ, Gordon G, Keltner JG, Abbott L, Bahorski J. Efficacy of a social support and problem-solving intervention on heart failure self-care: a pilot study. *Patient Educ Couns*. 2018;101:266–275. doi: 10.1016/j.pec.2017.09.008
- Bekelman DB, Allen LA, McBryde CF, Hattler B, Fairclough DL, Havranek EP, Turvey C, Meek PM. Effect of a collaborative care intervention vs usual care on health status of patients with chronic heart failure: the CASA randomized clinical trial. *JAMA Intern Med*. 2018;178:511–519. doi: 10.1001/jamainternmed.2017.8667
- Heisler M, Halasyamani L, Cowen ME, Davis MD, Resnicow K, Strawderman RL, Choi H, Mase R, Piette JD. Randomized controlled effectiveness trial of reciprocal peer support in heart failure. *Circ Heart Fail*. 2013;6:246–253. doi: 10.1161/CIRCHEARTFAILURE.112.000147