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INVITED COMMENTARY

Commentary on 'Factors associated with patient activation in people with heart failure based on the individual and family self-management theory: a cross-sectional study'

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This invited commentary refers to 'Factors associated with patient activation in people with heart failure based on the individual and family self-management theory: a cross-sectional study', by S. Wei et al., https://doi.org/10.1093/eurjcn/zvae145.

Heart failure (HF) is a widespread and debilitating condition affecting ~64 million people worldwide.[1] Although treatment has significantly advanced, hospitalization, morbidity, mortality, and disability rates remain high, imposing a substantial human and economic burden. The healthcare and societal costs associated with HF are estimated to be ~$108 billion globally.[2] Patients with HF often endure a heavy symptom burden that profoundly impacts both their physical and mental quality of life.[3]

This underscores the urgency of implementing comprehensive strategies for symptom assessment and management. In the context of symptom management, the primary therapeutic goal for patients with HF is to mitigate disease progression.[3] Effective self-management is essential for improving both health outcomes and quality of life.[4] The recent *Core Curriculum for Cardiovascular Nurses and Allied Professionals* highlights the importance of HF patients actively managing their condition, emphasizing the role of therapeutic education in promoting treatment adherence and effective symptom self-management.[5]

A fundamental prerequisite for successful self-management is patient activation (PA), which is defined as the knowledge, skills, and confidence to manage one's health. A deeper understanding of the factors associated with PA is a critical step in developing interventions to enhance self-management.[6]

By adopting the Individual and Family Self-Management Theory (IFSMT), Wei *et al.*[7] have made a significant contribution to the *European Journal of Cardiovascular Nursing*, enhancing readers' understanding of how PA is influenced by condition-specific factors (e.g. device therapy), the physical and social environment (e.g. quality of chronic care), and individual and family contexts (e.g. age). The authors conducted a cross-sectional study involving 268 HF patients from a large tertiary medical centre in Chengdu, China.[7] Using several instruments to measure variables conceptualized within the IFSMT framework, they found that, as predicted by the theoretical model, better PA was directly or indirectly influenced by condition-specific factors, such as the presence of device therapy; by physical and social environment factors, such as better quality of chronic care; and by individual and family factors, including younger age, higher educational level, living with others, lower levels of depression, and better family functioning. Additionally, the investigators observed that the quality of chronic care, family functioning, and depression acted as mediators in these relationships. Specifically, the quality of chronic care mediated the associations between device therapy, patient education, and PA. Family functioning served as a mediator between quality of chronic care, patient age and education, living with others, and PA. Finally, patient depression mediated the relationships between quality of chronic care, patient education, family functioning, and PA.

These findings are significant for several reasons. First, they underscore the complexity of PA in a multifaceted condition like HF and suggest that improving chronic care quality, strengthening family support, and addressing patient depression are crucial strategies for enhancing PA in HF patients.

Second, the study provides valuable insights that can help healthcare professionals design tailored, patient-centred interventions aimed at improving PA, particularly if further research confirms the findings of Wei et al. Interventions that address all the factors identified in this study as influencing PA, both directly and indirectly, are likely to be more effective. Once at-risk patients are identified based on these predictors, healthcare professionals can develop comprehensive strategies to improve chronic care quality, manage depression, and enhance family functioning. The mediating role of depression particularly underscores the importance of integrating mental health support into chronic disease management. A key factor in alleviating depressive symptoms is reducing sedentary behaviour through cardiac rehabilitation

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programmes.[8] These programmes, which can seamlessly incorporate new technologies such as virtual reality or mobile applications, are adaptable to both hospital settings and home-based cardiac rehabilitation, allowing for personalization to meet patients' specific needs.[9] Rehabilitation using technologies like virtual reality in hospital contexts has been shown to increase motivation,[10] self-efficacy,[11] mood state,[12] and muscle strength,[12] while also reducing pain,[13] factors that may represent additional IFSMT contexts influencing PA by improving adherence to rehabilitation. Adherence, in turn, is a critical self-management mediator for overall health.[14,15] Similarly, home-based cardiac rehabilitation programmes supported by mobile technology offer a feasible and accessible solution for improving mental health by reducing logistical barriers.[16] In addition, healthcare professionals can identify HF patients who are particularly vulnerable in terms of family functioning, which may be influenced by factors such as geographic location, NYHA classification, education, age, family health, social support, and gender. Family empowerment programmes are essential strategies for improving family adaptation, thereby enhancing self-management and overall care outcomes for HF patients.[17,18]

Third, Wei and co-authors have provided a highly valuable example of the importance of using a solid theoretical foundation to guide research and data analysis. In fact, structural equation models (SEMs) are often misused as tools for 'playing with data' without a solid theoretical basis. Structural equation model is conceptualized as a confirmatory methodology, designed to test pre-established hypotheses.[19] Both the measurement and structural components of an SEM model must be defined in advance, based on well-established theoretical assumptions.[20] This further emphasizes the need to interpret SEM results within a well-defined theoretical context, ensuring that the results are not only statistically significant but also consistent with the initial hypotheses. The absence of a reference theory weakens the scientific validity of the research, making it impossible to justify causal relationships or mediating mechanisms. In contrast, using SEM within a solid theoretical framework enhances the robustness of the analysis and yields meaningful, interpretable results that contribute to scientific knowledge.[21] By using SEM correctly, Wei and co-authors have not only employed a valuable approach to data analysis but have also contributed to strengthening the IFSMT, which can be used with greater confidence to guide practice in HF care.

The study has several limitations. First, the cross-sectional design limits its causal inferences, underscoring the need for longitudinal studies. Additionally, since the study was conducted at a single medical centre in China, future multicentre research involving diverse populations and cultures would enhance external validity.

In conclusion, the study by Wei and co-authors deepens our understanding of the factors influencing PA in HF by applying the IFSMT, a robust theoretical framework that guides SEM analysis and ensures reliable, interpretable findings. It identifies key contextual factors and highlights the importance of quality chronic care, family support, and mental health in promoting PA. Healthcare professionals can improve PA through targeted interventions, such as family empowerment and cardiac rehabilitation programmes, both in hospital settings and at home, using innovative technologies.

Author contributions

Valentina Micheluzzi (Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]) and Ercole Vellone (Conceptualization [lead], Methodology [lead], Project administration [lead], Supervision [lead], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal])

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Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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