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### HeartMApp: A technology based intervention for telemonitoring support to improve heart failure outcomes

Mobile technology has become an indispensable component of the current hyper-connected world population. Therefore, we developed a user-friendly mobile application (HeartMApp), using the information, motivation, behavioral skills model (IMB) as its theoretical foundation and patient engagement as the key mediator. Heart Failure (HF) is a significant public health problem affecting 5.7 million Americans, predominantly older adults. Patients with HF are required to engage in complex self-management behaviors including daily weighing, assessing HF symptoms, adhering to complex medication regimens, consuming a low-salt diet, participating in physical activity and responding to symptoms appropriately. Lack of resources, support, and motivation can lead to poor self-management, which contributes to the high rate (25%) 30-day HF readmissions nationwide. Unfortunately, currently available interventions to improve HF self-management have demonstrated no sustained benefits. HeartMApp is an easy to use non-pharmacological, non-invasive application developed with five main features: 1) assessment of daily weight, blood pressure, and HF symptoms; 2) exercise including physical activity (walking) and deep breathing; 3) real-time vital signs monitoring using the wearable Bluetooth device; 4) HF information that includes evidence-based, audio-enabled, interactive HF education; and 5) stats including a graphic module displaying patient performance trends. HeartMApp uses Bluetooth sensors and wireless networks that consist of an Android application, tested on the Nexus 4 and Nexus 5 running the Android 4.4.0 platform. For researchers and health care providers, HeartMApp provides an unobtrusive way to collect real-time ecological momentary assessment (EMA) data on individual performance from patients' responses indicating their engagement in daily HF self-management.

### Biography

Ponrathi Athilingam has completed her PhD in 2008 from University of Rochester, New York. She is an accomplished Nurse and Acute Care Nurse Practitioner with a focused practice and research in the evaluation and management of patients with heart failure and has been actively exploring the use of technology-based interventions that will be easy to use by older adults who live alone and may be cognitively challenged. She has published widely in this topic. She is recently elected as a Fellow of the Heart Failure Society of America and a Fellow of the American Association of Nurse Practitioners.

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