

14<sup>th</sup> International Conference on

# Clinical & Experimental Cardiology

November 14-16, 2016 Orlando, Florida, USA

## Computerized auditory cognitive intervention to improve cognition and thus improve heart failure self-care and quality of life

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Patients with Heart Failure (HF) have four times the increased risk of cognitive impairment; yet receive no routine cognitive screening. Moreover, cognitive training in HF is in its infancy. The potential mechanism of cognitive intervention is believed to be engagement in cognitively stimulating activities based on the principle of neural plasticity. In a pilot study, we examined the feasibility and potential efficacy of “Brain Fitness”, a computerized auditory cognitive intervention (ACT) in improving cognitive and functional outcome and calculate effect sizes for a larger study. A total of 17 participants were randomized to either ACT (n=9) or wait-listed control (n=8). Individuals continued ACT at home for 16 weeks or until 40 hours of training was completed. The wait-listed control group received standard optimized medical therapy during the first 16 weeks and after follow-up was given ACT. Data were collected at baseline and at 16-weeks or at completion of 40 sessions of ACT. The results indicated improvement in auditory speed of processing and speech processing that transferred to enhance memory and everyday cognitive performance with moderate effect sizes. The result also reflected potential to improve HF self-care behavior with a small effect size and improvement in HF related quality of life with a moderate effect size. In addition, participants in the ACT group showed a trend for improvement in ejection fraction, which has not been tested previously in any studies. The potential benefit of ACT on these HF specific outcomes warrants further exploration in a larger sample.

### 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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