



Sleep Disturbance, Mood, Daytime Symptoms, and Self-Care Among People with Heart Failure and Insomnia



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INTRODUCTION

Self-care, including managing symptoms and following health guidelines, is critical to the health of people with chronic heart failure (HF), a group that includes about 6.5 Americans. Numerous studies have evaluated factors that may be associated with self-care of HF. However, no previous studies have focused on self-care among people with both chronic HF and insomnia, and few, if any have addressed the combined contributions of demographic and clinical factors or sleep, mood, and daytime symptoms – phenomena that are often interrelated. The purpose of this study is to determine levels of self-care and the contributions of multi-variable factors to self-care.

SPECIFIC AIMS

1. Evaluate the levels of self-care maintenance and self-care confidence among people with stable HF and chronic insomnia
2. Identify the clinical and demographic correlates of self-care maintenance and confidence among people with stable HF and insomnia
3. Identify the associations between sleep disturbances, mood and daytime symptoms, and self-care maintenance and confidence among people with stable HF and insomnia

METHODS

Design: Cross-sectional using baseline *HeartSleep*® data
Setting: Yale New Haven Hospital System, VA Connecticut Health Care, Yale University
Sample Size: 195
Inclusion Criteria: Aged 18+ years; NYHA Functional Class I-IV; Insomnia Severity scores ≥8; Heart Failure with preserved or reduced LVEF; No more than mild sleep apnea or adherent to CPAP

Variables	Measures
Anxiety	PROMIS Anxiety 8a
Daytime Sleepiness	PROMIS Sleep Impairment 8
Depression	PROMIS Depression 8a
Dyspnea	Multi-Dimensional Assessment of Dyspnea Scale
Fatigue	PROMIS Fatigue 8a
Insomnia Severity	Insomnia Severity Index
Perceived Stress	Perceived Stress Scale
Sleep Quality	Pittsburgh Sleep Quality Index; PROMIS Sleep Disturbance 8a

Statistical Analyses:

- Aim 1:** Univariate Statistics
- Aim 2:** Pearson and Spearman Correlations; General Linear Models
- Aim 3:** Exploratory and Confirmatory Factor Analysis; Structural Equation Modelling

RESULTS

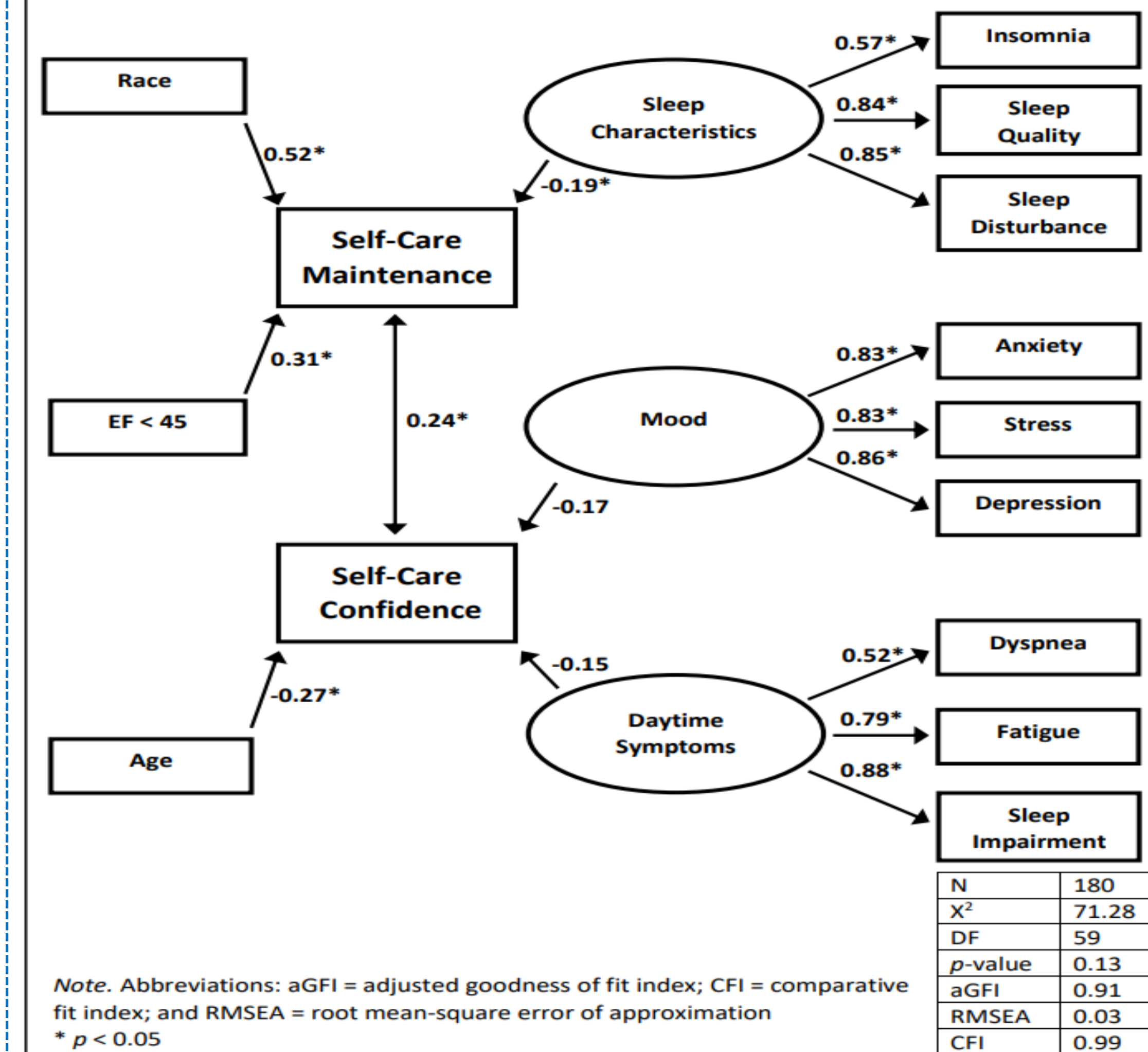
Rotated Factor Matrix of Sleep and Symptom Variables

Variable	Factor		
	1	2	3
Insomnia Severity	0.224	0.486*	0.198
Sleep Disturbance	0.096	0.787*	0.201
Sleep Quality	0.104	0.838*	0.182
Sleep Impairment	0.293	0.309	0.614*
Anxiety	0.824*	0.175	0.170
Depression	0.812*	0.127	0.284
Dyspnea	0.103	0.189	0.481*
Fatigue	0.289	0.153	0.945*
Perceived Stress	0.801*	0.144	0.195

Note. Extraction completed using maximum likelihood. Rotation completed using varimax technique with Kaiser normalization. * indicates strongest loading of a given variable

Figure 1

Structural Equation Model



CONCLUSIONS

We identified three latent factors labeled “sleep characteristics”, “mood” and “daytime symptoms” which were associated with self-care maintenance and confidence in unadjusted models. In the fully-adjusted model, the latent factor “sleep characteristics” was significantly associated with self-care maintenance. Our findings highlight the contributions of sleep disturbance to self-care. Interventions focused on improving sleep health may also improve self care. Although some mood and daytime symptoms were not associated with self-care in our fully-adjusted model, they are important outcomes in and of themselves and should be treated as such.

