

Impact Of Health Literacy And Social Support On Self-efficacy Regarding Self-care Among Patients With A Left Ventricular Assist Device (LVAD): Findings From The Mechanical Circulatory Support: Measures Of Adjustment And Quality Of Life (MCS A-QOL) Study

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BACKGROUND

- Patients face unique burdens in LVAD self-care (managing drivelines and power sources, monitoring problems and concerns) in addition to heart failure self-care (diet, exercise, medications).
- Higher health literacy and social support are associated with better health outcomes in patients with heart failure.
- Assessments of health literacy and social support are included in the 2018 ISHLT/APM/AST/ICCAC/SSW Recommendations for the Psychosocial Evaluation of Transplant and Mechanical Circulatory Support Candidates (Dew et al., J Heart Lung Transplant 2018;37(7):803-823).

OBJECTIVES

The objectives were to determine whether (1) health literacy and social support are related to self-efficacy regarding self-care, and (2) self-efficacy regarding self-care improves over time, early after LVAD implantation.

METHODS

Sites

Northwestern University, Chicago, IL
University of Chicago, Chicago, IL
Oregon Health and Science University, Portland, OR
Vanderbilt University, Nashville, TN
Stanford University Medical Center, Stanford, CA
Tufts Medical Center, Boston, MA
University of Colorado-Denver, Denver, CO
University of California, San Francisco, San Francisco, CA
St. Vincent Hospital, Indianapolis, IN

Health Literacy question and LVAD Self-Efficacy question

Medications for Mr. Beta

Medication	Start Date	End Date	Instructions
Hanebrex: 200 mg tablets	Aug. 27	Sept. 26	1 Tablet daily
Yostatin: 250 mg tablets	Mar. 8	None	1 Tablet twice daily
Nandozol: 90 mcg per puff	Mar. 8	None	1-2 Puffs by mouth every 4-6 hours as needed
Cellacillin: 250 mg tablets	Apr. 22	Apr. 29	2 Tablets on the first day, then 1 Tablet daily after that

Look at the Medications for Mr. Beta. How many tablets of Cellacillin should he take on the third day?

1

2

3

4

reset

Inclusion / Exclusion Criteria

- Inclusion criteria:**
- (1) Advanced heart failure patients accepted for, or scheduled for, primary (first) implant of a continuous flow MCS device (i.e., LVAD)
 - (2) Implant strategy can be bridge to transplant, destination therapy, or bridge to recovery
 - (3) Age $\geq$ 19 years and able to speak and understand English
 - (4) Sufficient cognitive ability to provide self-report data on a computer touchscreen, standard computer and / or paper-based forms with minimal assistance
 - (5) Willing to participate and able to give written informed consent
- Exclusion criteria:**
- (1) Scheduled for implant of a bi-VAD, right (R)VAD, or total artificial heart

Self-efficacy regarding VAD self-care

At the present time:
How sure are you that you can take care of your VAD equipment?

Not sure at all

Just a little sure

Fairly sure

Very sure

Design, Procedures, and Statistics

- Design: Longitudinal (assessments pre-LVAD and 3 and 6 months post-LVAD)
 - Health Literacy Assessment Using Talking Touchscreen Technology (10 items), dichotomized as inadequate/low vs. adequate/high at 6 months
 - Self-efficacy regarding Heart Failure self-care (13 items; average score) and Self-efficacy regarding VAD self-care (12 items; average score)
- Participants who died, were transplanted, or were withdrawn before 6 months were excluded from analysis ($n=68$)
- Statistics: Linear mixed effects models were estimated using all available longitudinal data, assuming a missing at random mechanism

RESULTS

Characteristics and Patient-reported Outcomes ($n=126$)

Sociodemographic and Clinical	
Age in years, mean (SD)	55 (12)
Female	28%
Ethnicity, Race	
Hispanic	9%
Non-Hispanic, White	62%
Non-Hispanic, Black	20%
Non-Hispanic, Other	9%
Education, H.S. or less	33%
High Health Literacy	67%
Patient-reported Outcomes	
PROMIS Social Support, ^a mean (SD)	
Emotional	58 (7.6)
Instrumental	61 (6.4)
Informational	59 (8.7)

^a PROMIS general population mean (SD): 50 (10)

Mixed effects models

Dependent: Self-efficacy regarding Heart Failure or VAD self-care

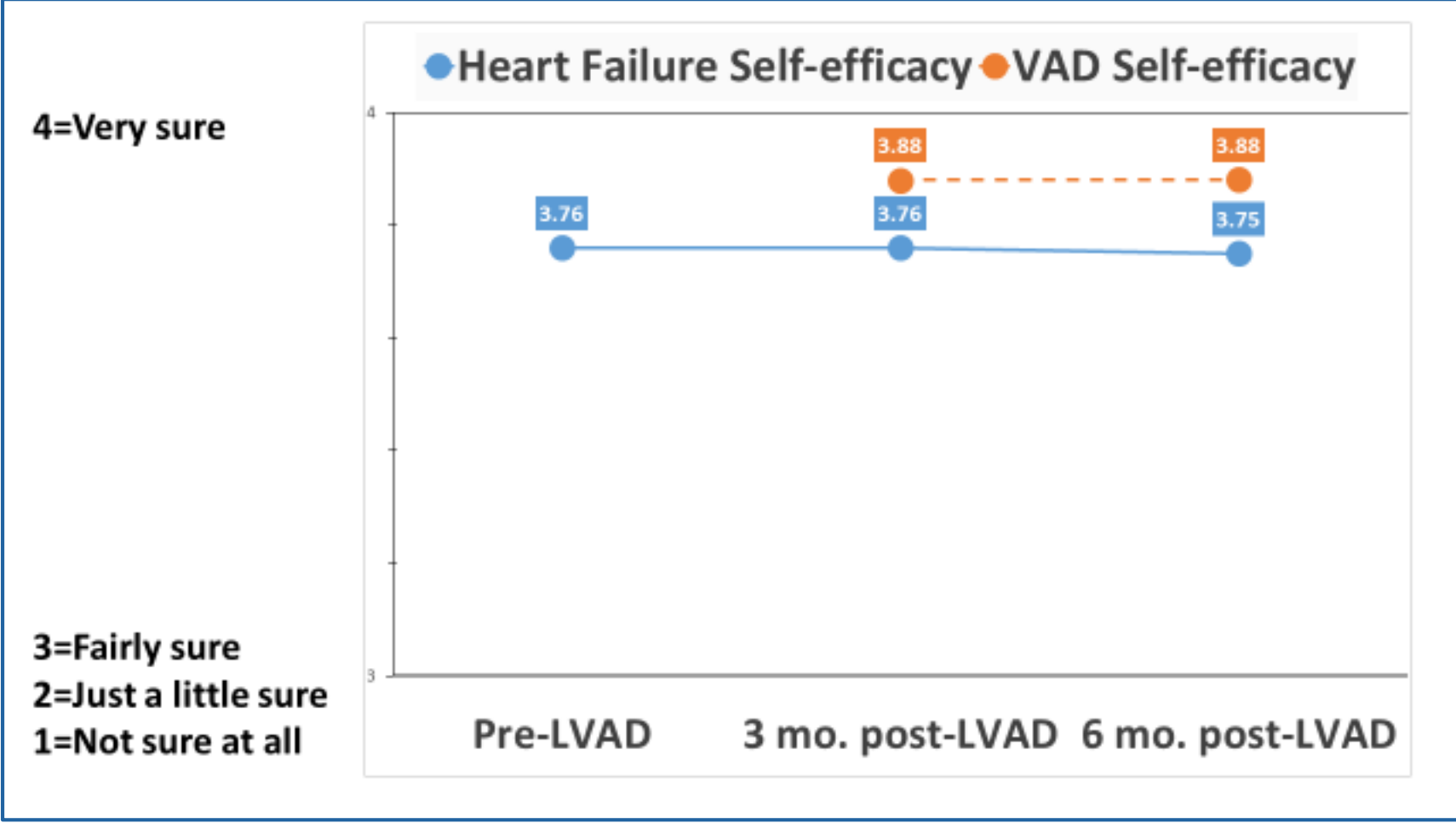
Independent: Emotional, Instrumental or Informational Support

parameter estimates:
0.01-0.02; $p<0.001$

Health Literacy, $p>0.73$

Self-Efficacy Regarding Self-Care Over Time

Least-squares means adjusted for social support and health literacy



CONCLUSIONS

- Social support was higher than the general population and positively associated with higher self-efficacy regarding heart failure and VAD self-care.
- Health literacy was not associated with self-efficacy.
- Self-efficacy regarding heart failure self-care and VAD self-care were high and did not change over time.

IMPLICATIONS

In patients with an LVAD, strong social support might mitigate the impact of other risk factors, including low health literacy, on self-efficacy. More research is needed to understand these factors in a more diverse patient group.

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