

The Impact of Cardiac Rehabilitation on LVAD and Transplant Patients
Michael McNamara, MS, FAACVPR, Carrie Oser, MPH, Crystelle Fogle, MS, MBA, RD
Montana Cardiovascular Health Program – Department of Public Health and Human Services

Introduction: Heart transplant (HTx) and left ventricular assist device (LVAD) patients experience unique challenges in cardiac rehab (CR). External hardware, medication regimens and added surveillance increase the level of complexity of this special population compared to the traditional non-transplant/LVAD patient.

Purpose: To investigate the impact that CR has on this unique patient population related to well established outcome indicators.

Design: A cross-sectional study design was used for CR facilities participating in the Montana Outcomes Project (MOP).

Methods: The sample was drawn from programs participating in the MOP and included 89 HTx patients and 64 LVAD patients. The time frame for data collection was from October 2015 through September 2018. Statistical analysis included Chi-square and ANOVA tests with p-value of ≤ 0.05 indicating statistical significance.

Results: The majority of the sample was male (66% HTx - 80% LVAD), predominantly white (86% HTx - 81% LVAD), and mean age was 58 years for the HTx sample and 60 years for the LVAD group. The number of completed CR visits was similar in both groups (29 HTx - 28 LVAD). Both populations had similar rates of diabetes at approximately 34%. Functional capacity, measured by the Duke Activity Status Index, significantly improved over the course of CR in both populations – 5.3 METs pre CR to 6.8 METS post CR for the HTx group and 4.8 METS pre CR to 5.9 METS post CR for the LVAD population. Quality of life (QOL) scores, measured by the Dartmouth COOP, significantly improved as well with the HTx population starting CR with a score of 21.5 and improving to 18.38 post CR while the LVAD group started at 22.7 and improved to 19.2 post CR. Depression screening using the PHQ-9 significantly improved with the mean CR entry score of 5.1, which decreased to 3.0 post CR in the HTx group, and the LVAD group started CR with a mean score of 5.4 and ended CR with a mean score of 4.1. Sixty-one percent of the HTx population experienced at least 1 level of severity improvement in PHQ-9 scores while 71% of the LVAD population demonstrated similar improvements over the course of CR.

Conclusion: Despite the added complexity that HTx and LVAD patients bring to CR, both populations benefit positively from this therapy. Significant improvements in functional capacity, QOL, and depression scores were observed over the course of CR.