

ADDRESSING HEALTH LITERACY AMONG THE RURAL ELDERLY WITH HEART FAILURE

Laura Ferguson, BSN, RN
University of Missouri Sinclair School of Nursing

INTRODUCTION

- The World Health Organization (WHO) defines health literacy as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health” (WHO, 2009, “Track 2,” para. 1).
- Literacy-specific educational interventions are necessary to meet the health learning needs of those with inadequate health literacy.
- Heart failure (HF) is a complex chronic condition, and because much of the management of symptoms is the responsibility of the patient, those with poor literacy may have difficulty utilizing health information (Yancy et al., 2013).
- Health literacy has consistently been shown to be a predictor of HF knowledge (Chen et al., 2014; Dennison et al., 2011; Macabasco-O’Connell et al., 2011).
- HF patients with poor health literacy demonstrate less self-care ability and lower rates of adherence to medications than those with adequate literacy (Dracup et al., 2014; Noureldin et al., 2012; Wu et al., 2013).
- HF patients with low literacy levels are more likely to experience all-cause and HF-related hospitalization (Peterson et al., 2011; Wu et al., 2013).
- Low health literacy is associated with lower health-related quality of life (HRQOL) and inadequate self-management of HF (Dracup et al., 2014; Wu et al., 2013).
- Evidence regarding interventions to address health literacy is sparse, but elements that have been shown to be beneficial include personalized, literacy-specific education by trained healthcare professionals, and multi-session education (DeWalt et al., 2012; Evangelista et al., 2011; Murray et al., 2007; Noureldin et al., 2012).
- Rurality and advanced age are independently associated with poorer health literacy (Zahnd, Scaife, & Francis, 2009).
- Very little evidence exists regarding effective heart failure HF management strategies for the rural elderly.
- Goals of this project include the identification of rural elderly HF patients with inadequate health literacy, and improvement of HRQOL and self-efficacy through delivery of literacy-sensitive education and reinforcement with regular follow-up phone calls.

PICOT: In aged rural Missouri residents over age 65 with HF (P), how does assessment of health literacy and provision of literacy-sensitive education (I) compared to usual HF management (C) impact self-efficacy and HRQOL (O) over two months (T)?

Objectives

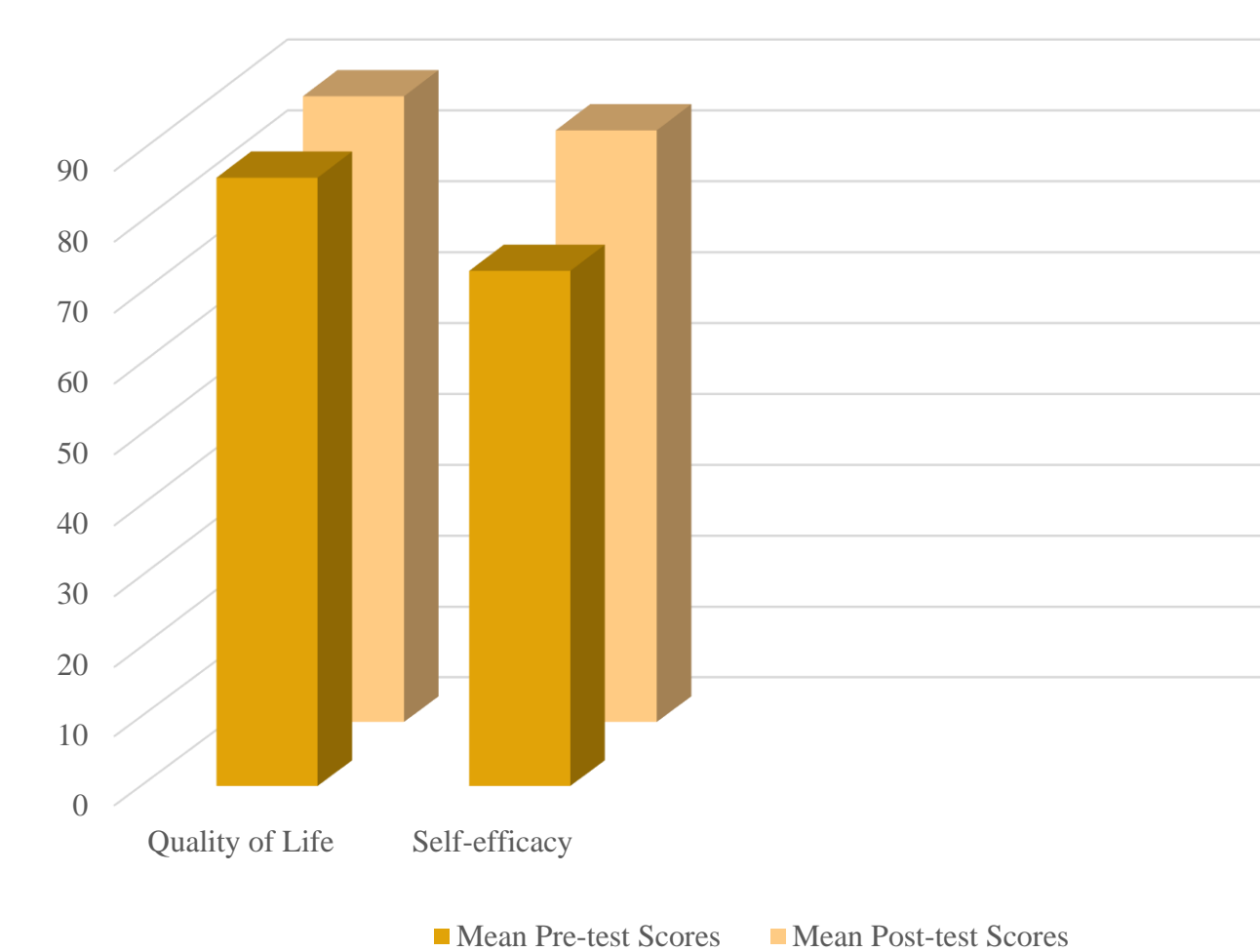
1. To increase rural elderly heart failure patients’ mean QOL scores on the Kansas City Cardiomyopathy Questionnaire (KCCQ) by 10% within two month; and
2. To increase rural elderly patients’ mean self-efficacy scores on the KCCQ by 10% within two months.

MATERIALS AND METHODS

- “Rural” as outlined by The Office of Management and Budget (2013) refers to residents of counties that contain no core urban area with a population of greater than 10,000.
- “Elderly” defined as age 65 or older.
- The setting for the project was the Kansas City Cardiology Blue Springs clinic in eastern Jackson County.
- Purposive convenience sample of participants included residents of Lafayette County who were over age 65 and carried a diagnosis of HF.
- Two cardiology providers (one MD and one APRN) underwent health literacy training through completion of the Center for Disease Control’s Health Literacy Training Course (available at <https://www.cdc.gov/healthliteracy/training/>).
- Assessment of health literacy was accomplished through administration of the Short Test of Functional Health Literacy in Adults (STOFHLA). Baseline self-efficacy and HRQOL were assessed with the Kansas City Cardiomyopathy Questionnaire (KCCQ).
- Providers were notified of patients who scored less than 23 on the STOFHLA, indicating inadequate health literacy. Providers then engaged in literacy-sensitive HF education based on the recommendations of the American Heart Association and American College of Cardiology (AHA/ACC) as outlined by Yancy et al (2013).
- Monthly follow-up phone calls were scheduled by office nurses.
- After the second monthly follow-up phone call, participants completed follow-up KCCQ to evaluate post-intervention scores.

RESULTS

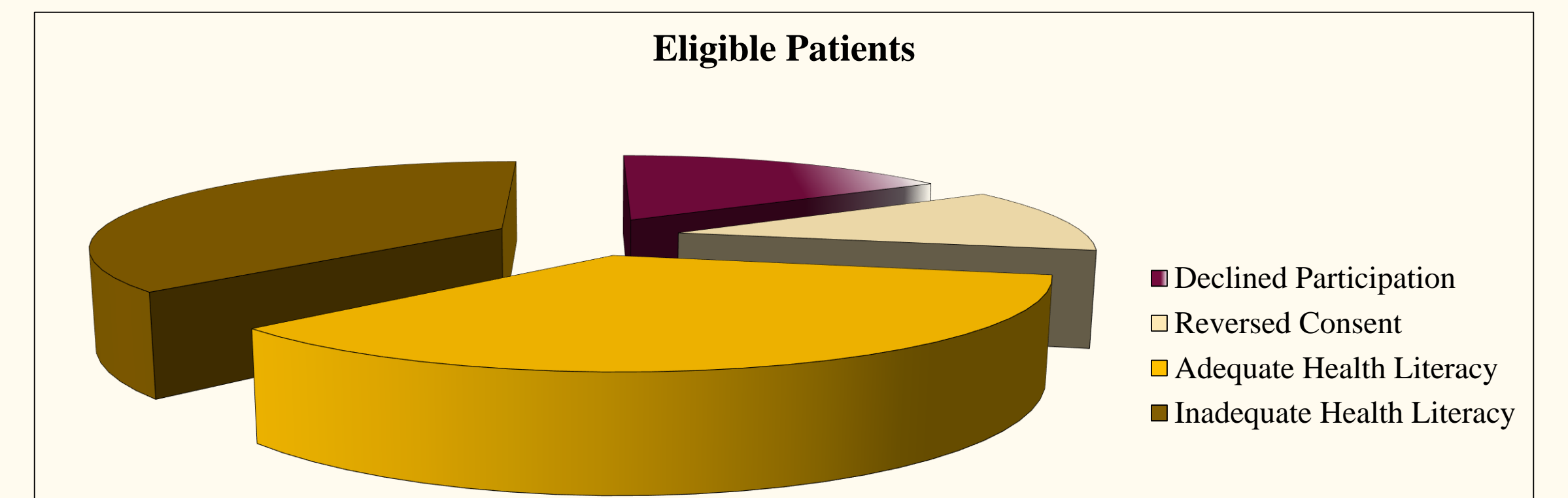
Impact of Intervention



- Ninety-two eligible patients were seen in the clinic during the project period; 66 underwent health literacy assessment with the STOFHLA.
- Thirty-four patients (51.5% of those assessed) had inadequate health literacy and received the educational intervention.
- The mean STOFHLA score among patients with inadequate health literacy was 19.23 (out of 36 possible).

RESULTS

- The mean pre-test QOL score was 86.22 and the mean post-test QOL score was 88.46 (out of 100 possible). This demonstrates a slight and statistically insignificant 2.5% increase in mean scores, $t=-1.494$, $p=0.148$, 95% CI [-5.34, 0.85].
- The mean self-efficacy score was 73.08 prior to the intervention, and the mean post-test score was 83.65. This indicates a statistically significant 12.7% increase in mean scores on the self-efficacy subscale, $t=-4.46$, $p < 0.01$, 95% CI [-15.46, -5.69].



CONCLUSIONS

- The first objective, improving mean QOL scores by 10%, was not met at the completion of this project.
- The second objective (improving self-efficacy mean scores by 10%) was surpassed.
- Results may have been impacted by patients who chose not to participate, or who withdrew their consent.
- Pre- intervention QOL scores started out relatively high, which may limit the ability to achieve significant improvement.
- The significant improvement of self-efficacy scores indicate the benefits of literacy-sensitive HF education for the rural elderly.

REFERENCES

- Chen, A. M., Yehle, K. S., Albert, N. M., Ferraro, K. F., Mason, H. L., Murawski, M. M., & Plake, K. S. (2014). Relationships between health literacy and heart failure knowledge, self-efficacy, and self-care adherence. *Research in Social and Administrative Pharmacy*, 10(2), 378-386. doi:10.1016/j.sapharm.2013.07.001
- Dennison, C. R., McEntee, M. L., Samuel, L., Johnson, B. J., Rotman, S., Kieley, A., & Russell, S. D. (2011). Adequate health literacy is associated with higher heart failure knowledge and self-care confidence in hospitalized patients. *The Journal of Cardiovascular Nursing*, 26(5), 359-367. doi:10.1097/JCN.0b013e3181f16f88
- DeWalt, D. A., Malone, R. M., Bryant, M. E., Kosnar, M. C., Corr, K. E., Rothman, R. L., ... & Pignone, M. P. (2006). A heart failure self-management program for patients of all literacy levels: A randomized, controlled trial. *BMC Health Services Research*, 6(1), 30. doi:10.1186/1472-6963-6-30
- Dracup, K., Moser, D. K., Pelter, M. M., Nesbitt, T., Southard, J., Paul, S. M., ... & Cooper, L. (2014). Rural patients' knowledge about heart failure. *Journal of Cardiovascular Nursing*, 29(5), 423-428. doi:10.1097/JCN.0b013e318292b6f5
- Evangelista, L. S., Rasmussen, K. D., Laramee, A. S., Barr, J., Ammon, S. E., Dunbar, S., ... & Yancy, C. W. (2010). Health literacy and the patient with heart failure—implications for patient care and research: a consensus statement of the Heart Failure Society of America. *Journal of Cardiac Failure*, 16(1), 9-16. doi:10.1016/j.cardfail.2009.10.026
- Macabasco-O’Connell, A., DeWalt, D. A., Brouckson, K. A., Hawk, V., Baker, D. W., Schilling, D., ... & Pignone, M. (2011). Relationship between literacy, knowledge, self-care behaviors, and heart failure-related quality of life among patients with heart failure. *Journal of General Internal Medicine*, 26(9), 979-986. doi:10.1007/s11606-011-1668-y
- Murray, M. D., Young, J., Hoke, S., Tu, W., Weiner, M., Morrow, D., ... & Brater, D. C. (2007). Pharmacist intervention to improve medication adherence in heart failure: A randomized trial. *Annals of Internal Medicine*, 146(10), 714-725.
- Noureldin, M., Plake, K. S., Morrow, D. G., Tu, W., Wu, J., & Murray, M. D. (2012). Effect of health literacy on drug adherence in patients with heart failure. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 32(9), 819-826. doi:10.1002/j.1875-9114.2012.01109
- Peterson, P. N., Shetterly, S. M., Clarke, C. L., Bekelman, D. B., Chan, P. S., Allen, L. A., ... & Masoudi, F. A. (2011). Health literacy and outcomes among patients with heart failure. *Journal of the American Medical Association*, 305(10), 1695-1701. doi:10.1001/jama.2011.512
- World Health Organization. (2009). *WHO 7th global conference on health promotion: Health literacy and health behavior*. Retrieved from <http://www.who.int/healthpromotion/conferences/7cph/track2/en>
- Yancy, C. W., Jessup, M., Borkert, B., Butler, J., Casey Jr, D. E., Drazner, M. H., ... & Wilkoff, B. L. (2013). 2013 ACCF/AHA guideline for the management of heart failure: A report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. *Circulation*, 128(16), e240-e327. doi:10.1161/jacc.2013.05.019