# **COMMENTARY**

# Health literacy scores reported by patients are related to readmissions after surgery

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### ABSTRACT

Healthcare is impacted by health literacy. We predicted that patients with low HL would experience higher postoperative readmission rates. **METHODS:** In the Veterans Affairs System, we conducted a prospective, multi-institutional study between August 2015 and June 2017 that included veterans who underwent general, vascular, or thoracic surgery. The Brief Health Literacy Screener was used to evaluate HL and categorise it as adequate or inadequate. Following discharge, patients were monitored for 30 days. Correlations and logistic regression models with covariate

adjustments were evaluated in multivariable analysis.

**RESULTS:** The study included 736 patients, and 98% of them completed the HL survey. 33.2% of patients had low HL at discharge. 16.3% was the overall 30-day readmission rate, with HL making a big impact. After controlling for clinical and demographic factors, readmission rates for patients with low HL increased by 59%.

**CONCLUSION:** Patients who have undergone VA surgery frequently have low HL, which is linked to readmission. Interventions aimed at this patient population should be the main topic of future studies.

Key Words: Population; Patients; Health literacy

# INTRODUCTION

Wide definition of health literacy is the capacity to gather, analyses, and comprehend information related to one's health. 33% of Americans fall into the category of having low health literacy, according to the National Assessment of Adult Literacy conducted by the Institute of Educational Sciences of the U.S. Department of Education in 2003. People with low health literacy experience varying effects depending on their age, ethnicity, socioeconomic status, level of education, and insurance coverage. A wide definition of health literacy is the capacity to gather, analyses, and comprehend information related to one's health. 33% of Americans fall into the category of having low health literacy, according to the National Assessment of Adult Literacy conducted by the Institute of Educational Sciences of the U.S. Department of Education in 2003. People with low health literacy experience varying effects depending on their age, ethnicity, socioeconomic status, level of education, and insurance coverage.

Health care workers, patients, and the system itself are all impacted by low health literacy. Additionally, it is linked to greater health care expenses, which are thought to range from \$106 billion to \$238 billion yearly. An individual may be more susceptible to negative drug reactions and medication errors as a result. 1 When patients have a

poor grasp of drug instructions or regimens, they may be characterized as purposely non-adherent, actively disobeying instructions, or both.

Low health literacy patients may also have inadequate or limited selfcare abilities to manage their chronic conditions, and consequently, their postoperative wounds and other changes. Additionally, they use screening and preventative tests less frequently, which may be a result of their inability to comprehend or read the information provided to them.

Post-operative readmissions have drawn attention as a measure of care quality both nationally and in the surgical literature. Readmissions are expensive for healthcare systems and burdensome for patients, thus there is justification for this heightened focus. Recent research focuses on identifying patients who may need to go back to the hospital and what elements would indicate a successful operation. Readmission risk can be calculated using both administrative data and patient-reported data, but a lot of variation is still unaccounted for

Additionally, little is known about the experiences that patients have after they leave the hospital. One-third of post-operative problems happen after discharge, and whether and how a patient seeks medical assistance may depend on their degree of health literacy. For some

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patients, self-care after surgery can be challenging and daunting. Adapting to a new amputation or stormy, caring for postoperative wounds or drains, and differentiating between typical post-operative discomfort and a new or worsening symptom that may require immediate treatment are all unique problems for patients after surgery. The emotional strain of receiving a new, serious diagnosis-such as cancer-while having to manage a complicated post-operative care plan with the implications or requirement for more treatment—can hinder post-surgical care. We intended to explore the relationship between health literacy and surgical readmissions in our group of Veteran surgery patients in light of the overall rates of low health literacy in the general community and current studies addressing their linkages to post-surgical outcomes. Our theory is that postoperative readmission rates would be higher for patients with poorer health literacy scores.

#### **METHOD**

This prospective, observational, multi-institution cohort study comprises patients who were released from one of four VA Medical Centers between August 2015 and June 2017 after undergoing elective or urgent general, vascular, or thoracic surgery. In order to accurately represent the normal inpatient surgical population, patients with a length of stay of less than 2 days or more than 30 days were not eligible for recruitment.

### **RESULTS**

In total, 722 of the 736 patients who were enrolled finished the BHLS: 326 received general surgery, 252 underwent vascular surgery, and 144 got thoracic surgery. There were 96.0% men, 84.1% Caucasians, and a median age of 67. The majority of patients were given an ASA physical status class of 3, and the median Carlson comorbidity score was 4. The index hospitalization had a median overall length of stay of 5 days.

# CONCLUSIONS

Patients in our study who had inadequate health literacy had a readmission rate that was considerably higher 22.5% as compared to patients in our cohort who had appropriate health literacy 13.3%, with a 30 day post-discharge readmission rate of 16.3% overall. 17.4% of individuals who were readmitted did so to a hospital outside the VA system, which is consistent with 15% of the existing literature. In addition, patients with limited health literacy had 60% higher rates of adverse events when clinical and demographic factors are taken into account.