

Health Literacy and Time Spent With a Hand Surgeon

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Purpose To characterize the relationship between health literacy and duration of new hand surgery office visits.

Methods Using a stopwatch from outside the room, we measured the duration of the visit (minutes of face-to-face contact between attending surgeon and patient) for 224 new patients presenting to 1 of 5 orthopedic hand surgeons (D.R.). Directly after the visit, patients were asked to complete the Newest Vital Sign (NVS) health literacy test, a sociodemographic survey, and 3 Patient-Reported Outcomes Measurement Information System–based questionnaires: Pain Interference, Upper Extremity Function, and Depression. The Newest Vital Sign scores were divided into limited (0–3) and adequate (4–6) health literacy. Medical records were reviewed to collect data on diagnosis, visit type, management, and whether patients were first seen by a resident/fellow. Multiple linear regression modeling was used to characterize the association between health literacy and duration of visit while controlling for the effect of other patient and visit characteristics.

Results The unadjusted mean visit duration was 1.9 minutes shorter in patients with limited health literacy (9.4 minutes) than in patients with adequate health literacy (11.3 minutes), and this difference persisted after adjustment for a broad range of patient and visit characteristics. Greater magnitude of disability was associated with longer visits, as were second-opinion appointments, a diagnosis of nonspecific arm pain or compression neuropathy, and appointments in which operative management was chosen. Visits in which a resident/fellow saw the patient first were shorter than visits without resident/fellow assistance.

Conclusions The finding that limited health literacy correlated with shorter visits may suggest that patients who may stand to benefit the most from detailed health education and counseling received less. (*J Hand Surg Am.* 2016;41(4):e59–e69. Copyright © 2016 by the American Society for Surgery of the Hand. All rights reserved.)

Type of study/level of evidence Prognostic II.

Key words Health literacy, visit duration, hand surgery, patient-centered care.



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TIME MANAGEMENT IN OUTPATIENT OFFICE visits is a key to practice efficiency and is often viewed as one aspect of patient-centeredness.^{1–4} Longer visits do not necessarily lead to greater patient satisfaction,^{5,6} but they can allow for more shared decision making, counseling, and education.^{7–12} However, long encounters disrupt practice workflow and often reflect ineffective interactions that can be cognitively and emotionally demanding for physicians and their office personnel.¹³

Health literacy—the ability to obtain, process, and understand information and services to make health decisions—is increasingly recognized as a contributor to health disparities and ineffective patient care.¹⁴ Patients with limited health literacy have less access to preventive health services,¹⁵ suboptimal disease control,^{16,17} and greater risk of hospitalizations, emergency department visits, and death.^{18–22} Some of these health disparities may arise as a result of insufficient patient understanding, which might be improved by a longer visit with the physician. But little is known about the association between health literacy and the length of office visits. To bridge the gap between perception and reality in order to make informed decisions and be as healthy as possible, a patient needs to understand the issues and get past her or his first impressions. Limited health literacy may be an important barrier to both understanding and flexible thinking.

It remains unclear whether patients with limited health literacy have longer or shorter outpatient office visits with a hand surgeon. One might expect these visits to be longer. There might be a greater number of questions and a greater need to explain things carefully to be fully understood. Conversely, patients with limited health literacy might not feel empowered to speak up or ask questions. They might be self-conscious, embarrassed, or deferential. In addition, it might be more difficult for the physician to establish a satisfying and mutually respectful relationship with a patient with low health literacy. Physicians may find themselves having less to say and unconsciously preferring a shorter visit.

We undertook this study to examine the relationship between health literacy and duration of hand surgery office visits. We tested the primary null hypothesis that there was no difference in visit duration between patients with limited and adequate health literacy. In addition, we sought to identify other patient and visit characteristics affecting visit length.

MATERIALS AND METHODS

Design and definitions

After institutional review board approval, we conducted a secondary analysis of 224 patients from 2 prospective cohort studies regarding patient satisfaction in the hand surgery office setting.⁵ Patients were eligible if they were at least 18 years old, native English-speaking, and visiting the offices of 1 of 5 orthopedic hand surgeons (D.R.) for the first time. Enrollment took place between December 2014 and July 2015. Oral informed consent for the initial studies was obtained from each patient prior to enrollment. After their visit, patients

were asked to complete a series of questionnaires aimed at monitoring quality of care. They were unaware of the specific study aims and were not told the outcome measures in the consent process.

A research fellow (M.E.M) not involved in clinical care measured the duration of the visit (minutes of face-to-face contact between attending surgeon and patient) using a stopwatch from outside the room. Although the physicians were aware of the existence of the initial studies, they were unaware of which patients were being enrolled into them, and neither the patients nor the surgeons knew they were being timed.

Directly after the visit, patients were asked to complete a sociodemographic survey (eg, age, gender, race/ethnicity, insurance status, work status, marital status), the Newest Vital Sign (NVS) health literacy test,²³ and 3 Patient-Reported Outcomes Measurement Information System (PROMIS)—based computerized adaptive testing questionnaires: Pain Interference,²⁴ Upper Extremity Function,²⁵ and Depression.²⁶

The NVS test measures health literacy and numeracy and is based on a nutrition label from an ice cream container, with design identical to the nutrition label present on all packaged food in the United States.^{27,28} The NVS was originally validated against the Test of Functional Health Literacy in Adults²⁹ in primary care patients in the Southwestern United States.²³ The test was administered orally and in person. Patients were given the nutrition label and were asked 6 questions about it ([Appendix A](#)), with 1 point being awarded for each correct response. We divided the resulting NVS scores into limited (0–3) and adequate (4–6) health literacy, using the same threshold as in the original NVS study and a recent study in hand surgery.^{23,30} An NVS score of less than 4 has a sensitivity of 100% and a specificity of 64% for predicting limited health literacy (Test of Functional Health Literacy in Adults score, < 75).²³ The PROMIS Pain Interference evaluates the degree to which pain hinders physical, mental, and social activities.^{24,30} Higher scores indicate less effective coping strategies. The PROMIS Upper Extremity Function questionnaire quantifies the extent of disability with physical activities that involve use of the arm and hand such as writing, tying shoelaces, and holding a plate of food.²⁵ Lower scores represent higher levels of upper extremity disability. The PROMIS Depression questionnaire assesses depressive symptoms (eg, guilt, sadness, worthlessness),^{26,31} and higher scores indicate greater symptoms of depression. For the PROMIS Pain Interference and Depression questionnaires, a score of 50 represents the mean for the U.S. general population, and every

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