

Is the Digital Divide in Orthopaedic Trauma Patients a Myth? A Prospective Cohort Study of the Usage of a Custom Internet Site

Paul E. Matuszewski, MD¹; Samir Mehta, MD²; Andrew N. Pollak, MD¹;
Robert V. O'Toole, MD¹;

¹R Adams Cowley Shock Trauma Center, Department of Orthopaedics, University of Maryland School of Medicine, Baltimore, Maryland, USA;

²Hospital of the University of Pennsylvania, Department of Orthopaedics, Philadelphia, Pennsylvania, USA

Purpose: Musculoskeletal trauma is often associated with individuals of lower socioeconomic status, suggesting that this may translate to limited access to technology and the Internet. Some have proposed a “digital divide” in this patient population, limiting the clinical usefulness of the Internet in this subset of patients. No evidence exists regarding this “digital divide” phenomenon in orthopaedic trauma patients. The hypotheses of this study are that (1) a large percentage of trauma patients have access to the Internet and (2) patients will access a custom Internet site tailored to their trauma.

Methods: A customized orthopaedic trauma website was designed for the study and contained information about injury, institution, surgeons, and frequently asked questions. Patients 18 years or older sustaining an acute operative fracture at our institution, a Level I regional trauma center, were considered eligible. Those lacking Internet access were not excluded. Patients were consented within 24-48 hours of planned discharge/transfer. Participants underwent a brief survey to elicit demographics, Internet usage habits, device type, e-health literacy, and their intent to use the website. Participants were given a light-up keychain containing a web address and a unique access code. Participants, as well as family members and friends, were encouraged to utilize the website. Participants' device type, frequency, time spent, click flow, and choice of pages visited were recorded. Multiple logistic regression was performed to assess relationships.

Results: 52 patients were approached for participation; 40 enrolled in the prospective study. In support of our first hypothesis, 87% (n = 46/52, 95% confidence interval [CI] 0.738-0.936) of patients reported access to the Internet ($P < 0.001$) compared with historical controls from literature. 66% of those participants utilized the Internet at least daily (82% at least weekly). Age, education, race, profession, employment status, and income did not predict access to the Internet nor e-health literacy ($P > 0.20$). Most (93%) felt it important to access health resources on the Internet, while 78% thought the Internet was useful in helping make health decisions. Laptop was most frequently used (50%), followed by desktop (25%) and mobile device (18%). Nearly all enrolled patients (95%), stated they would utilize our website. However, only five (13%, $P < 0.001$) visited our website. Patients most frequently accessed information about their injury first. Surgeon information was accessed infrequently.

Conclusion: Our results suggest that the so-called “digital divide” may be a myth in our modern orthopaedic trauma population, as Internet access is common. Surprisingly, despite this access and overwhelming enthusiasm for our website (95%), only a small fraction of patients visited our site (13%, $P < 0.001$). Reasons for this are unclear, and warrant further

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an “off label” use). For full information, refer to page 600.

study. Regardless, data from our prospective study caution against the allocation of resources for patient specific web sites in orthopaedic trauma patients, until feasibility can be better demonstrated.