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Urologic Oncology: Seminars and Original Investigations 34 (2016) 3.e15–3.e21

UROLOGIC ONCOLOGY

Original article

Low self-efficacy is associated with decreased emergency department use in underserved men with prostate cancer

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Received 5 February 2015; received in revised form 23 July 2015; accepted 25 August 2015

Abstract

Background: Self-efficacy has been strongly associated with health behavior and health maintenance. We examined the relationship between patient-provider self-efficacy and emergency department usage in low-income, underinsured, or uninsured patients with prostate cancer.

Methods: We prospectively analyzed quality of life, behavior, and self-efficacy data from men enrolled in a state-funded program providing free prostate cancer care. We summarized patient characteristics stratified by self-efficacy scores (high, mid, and low) and by emergency department visit (any vs. none). We conducted a multivariate repeated measures regression analysis with negative binomial distribution to calculate predicted counts of emergency department visits over time across the self-efficacy strata.

Results: Our cohort included 469 men with a maximum follow-up time of 84 months. Of these men, 70 had visited the emergency department during their enrollment for a total of 118 unique visits. The regression analysis demonstrated a decreasing number of emergency department visits over time for the low ($P = 0.0633$) and mid ($P = 0.0450$) self-efficacy groups but not for the high self-efficacy group ($P = 0.1155$). Pain (22.9%), urinary retention (18.6%), and fever (5.9%) were the most common reasons for emergency department visits.

Conclusions: Patients with low and mid self-efficacy had a decreasing number of emergency department usage over time. Those with high self-efficacy did not follow these trends. Interventions to improve communication between patients and primary treatment teams could prove beneficial in avoiding excess emergency department use.

Keywords: Self efficacy; Emergency departments; Vulnerable populations; Health services accessibility; Prostate cancer

1. Introduction

Self-efficacy, or the confidence in one's ability to carry out appropriate actions to reach goals, has long been viewed as a potential avenue for achieving positive health outcomes [1]. One aspect of self-efficacy in health care focuses on the perceived ability of a patient to interact and communicate successfully with his or her physicians to achieve health care goals; it predicts health behavior and health maintenance [2,3]. Further, there is evidence in oncology of relationships between self-efficacy, increased treatment adherence, improved measures of health-related quality of life, better self-maintenance behaviors, and fewer social and psychological symptoms [4–6].

Although self-efficacy is known to be related to positive health outcomes, its relationship with usage of health services remains sparsely studied. We administer a statewide program that provides free prostate cancer care to low-income, underinsured, and uninsured men, whom we seek to empower to navigate the health care system and avoid unnecessary services, such as the inappropriate use of the emergency department. Our goal in this study was to examine the relationship between self-efficacy and emergency department visits in this population of underserved men. We hypothesized that those with greater self-efficacy

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http://dx.doi.org/10.1016/j.urolonc.2015.08.017
1078-1439/

would avoid the emergency department because they would be more successful at advocating for themselves in primary care settings.

2. Methods

We prospectively analyzed data from men enrolled in the University of California, Los Angeles Men's Health Study (MHS). Men enrolled in this study are drawn from a state-funded program called *Improving Access, Counseling, and Treatment for Californians with Prostate Cancer (IMPACT)* that provides free medical services to low-income, uninsured, and underinsured California residents with prostate cancer. Low-income patients are defined as those with a household income $<200\%$ of the Federal poverty level. Once enrolled in the program, each patient is assigned a nurse case manager (NCM), who works over the course of program enrollment to empower participants through the enhancement of self-efficacy in patient-provider interactions [7]. Clinical coordinators in the IMPACT program work to assist the NCM with follow-up and logistics in relation to care. On IMPACT enrollment, men were invited to participate in the MHS. Informed consent was obtained. Receipt of IMPACT benefits was not contingent on research participation. All study protocols were approved by the University of California, Los Angeles Office for the Protection of Research Subjects and were compliant with the Health Insurance Portability and Accountability Act.

MHS data collection initially included telephone interviews in English or Spanish by trained, language-matched interviewers, followed by self-administered questionnaires in English or Spanish. The self-administered questionnaire was discontinued in July 2011 and its items folded into the telephone interview, which includes validated instruments to measure self-efficacy, health-related quality of life, and other patient-centered outcomes, as well as demographics and health behaviors. Participants were interviewed at baseline and every 6 months for up to 5 years. Clinical data were obtained from medical record abstraction. To procure a contemporary data set, study eligibility required patients to have enrolled in the MHS after June 2006 and to have completed the baseline self-efficacy measure. Participants received a $10 incentive for each interview and questionnaire up until 2011 when the MHS ended the compensation.

2.1. Measures

The primary outcome was emergency department usage during enrollment in the IMPACT program. Patients reported emergency department visits to their NCM during telephone follow-ups. IMPACT staff requested medical records from the emergency department visits to determine coverage eligibility for prostate cancer-related services. We abstracted details of the emergency department visits from patient medical charts (e.g., date and reason) from IMPACT enrollment until most recent follow-up date. Follow-up time is calculated from the date the patients enrolled in IMPACT to either their disenrollment from the program or the date the data set was downloaded from the program server (January 13, 2014), whichever came first.

The primary independent variable of interest was score on the validated short form of the *Perceived self-Efficacy in Patient-Physician Interactions (PEPPI)* [8]. The 5-item instrument is a reliable measure for older patients' self-efficacy in interacting with physicians by assessing subjective sense of self-confidence when interacting with physicians. Specifically, PEPPI measures patients' perceived ability to both obtain information about their health and attend to their chief medical concerns [8]. Scores can range from 5 to 25, with higher scores corresponding to greater self-efficacy. Because analysis showed no significant change in participants PEPPI scores over time, we used PEPPI scores from the baseline MHS interviews. Further, the distribution of PEPPI scores was the same for participants who were measured via the self-administered questionnaire compared with those completed solely over the telephone. The end of the $10 compensation corresponded with switch from the self-administered questionnaire to the telephone interview, indicating that PEPPI scores among the groups were not affected by this incentive.

2.2. Statistical analysis

Most covariates were stratified or dichotomized for analysis, including race/ethnicity (white non-Hispanic, Hispanic, black, and other), primary language (English vs. other), partnership status (in a committed relationship vs. not in a committed relationship), education level (college graduate, high school graduate, and less than high school graduate), annual household income (none vs. any), Charlson comorbidity index (0 vs. ≥ 0), body mass index (BMI $<$ 25, 25–29, 30–35, and >35), Gleason score (≤ 7 vs. >7), highest pretreatment prostate-specific antigen level(<4, 4–10, and >10), and primary treatment (radical prostatectomy, radiation, hormone therapy, and watchful waiting/none). Because PEPPI scores were not normally distributed and right skewed, we categorized them into tertiles as proposed by the instrument's developers, Maly et al. [9] as well as a method used in previous studies with the PEPPI measure and IMPACT data set [5].

We also calculated the monthly rate of NCM, coordinator assessments, and nonemergency department provider visits during the follow-up period to assess the full spectrum of participant interaction with the clinical services provided by IMPACT.

Covariates were compared in bivariate analyses across the 3 self-efficacy groups and by emergency department visits (any vs. none) using a Chi-square test or Fisher exact test for categorical variables and analysis of variance for continuous variables. We then conducted a multivariate