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Urology Patients and the Internet: Socioeconomic Status and Language Skills Significantly Impact Use

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Abstract

Introduction: Patient Internet use and resources are likely multifactorial. We assess how socioeconomic factors and language skills affect Internet use by patients.

Methods: We prospectively surveyed 116 patients with a bilingual questionnaire before they underwent urological surgery from July to September 2013. We obtained institutional review board approval for this study. Patients were surveyed for demographic data, English abilities, Internet use, anxiety level and understanding of the surgery.

Results: Patients with low English abilities were significantly more likely to have lower incomes and education ($p < 0.05$). In addition, patients with low English abilities were significantly more likely neither to have Internet access nor to have used it to research their surgery. On multivariate analysis those with low confidence in English were 2.8 times more likely not to have used the Internet to research their surgery when controlling for age. Increased age remained statistically associated with a lower likelihood of using the Internet even when controlling for all demographic data. Lastly, patients with low confidence in English were significantly less likely to report increased anxiety before surgery (OR 0.147) when controlling for all demographic data including ethnicity.

Conclusions: In our community those patients with low confidence in their English abilities are less likely to have access to, and use, the Internet before undergoing surgery. Older patients also use the Internet less often. Urologists should be aware of this potential language and age gap. Those with low English skills should likely be provided with additional counseling.

Key Words: Internet, socioeconomic factors, educational status

The Internet is being used by an increasing number of surgical patients to investigate their disease process and make medical decisions. Previous studies have reported that about a fourth to half of surgical patients will use the Internet before undergoing a procedure.[1–5] Urological surgery is no exception, for which the Internet has been reported the second most frequent information source only after a doctor's recommendation.[6] Unfortunately the quality of urological information on the Internet that is available to patients is highly variable and the content is occasionally misleading.[7–9]

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Various socioeconomic factors including language, ethnicity and income have been shown to influence patient interactions with urological health information on the Internet.[10−12] Language barriers, primarily with Spanish speaking patients, have been shown to significantly affect communication between urologists and patients.[13] It has been postulated that the varying quantity and quality of information in different languages may have a significant role in the use of the Internet by patients and the effect it has on their attitudes and decisions. It has been our impression that our Spanish-speaking patients use the Internet less frequently and have more difficulty in identifying appropriate web sites. It was in this context that we categorized the use of the Internet in our significant Hispanic patient population in South Florida.

Methods and Materials

We surveyed patients before undergoing urological surgery from July to September 2013. We had received institutional review board approval to perform this research at our institution in Miami-Dade County. Regardless of native language, all patients were provided by urology residents in the preoperative holding area a 1-page anonymous questionnaire in English and Spanish. The questionnaire assessed demographic information including age, gender, ethnicity, education and peak income. Patients were asked to complete the survey themselves. Peak income was used because many patients are elderly and current income does not reflect socioeconomic status. Additionally, they reported if they had access to the Internet, if they used the Internet to research their procedure and, if yes, how many hours they had spent researching their upcoming procedure. Lastly, patients rated on a scale of 1 to 5 their confidence in their English language abilities, their understanding of the surgery and anxiety level. These variables were simplified to the dichotomous high (reporting 3 or greater) or low (2 or 1) to simplify the statistical analysis and to increase the statistical power.

Dichotomous variables were analyzed on univariate analysis using the chi-square test while continuous variables were analyzed with the t-test. All analysis was 2-tailed. Multivariable analysis using demographic data as confounders was completed on variables found to be significant on univariate analysis using SPSS®, with a p value set at 0.05.

Results

During our study period from July to October 2013, 116 patients completed the questionnaire. Our patient population in Miami is mostly male (78%) with an average age of 66 years. The majority identified as Hispanic (63.8) with Spanish as their native language (69.8%). Demographic data for the entire population can be found in table 1.

All characteristics were then separated by reported confidence in the English language as low or high to determine if there was a difference. On chi-square analysis of the demographic data people with low English abilities were significantly more likely to be older (71.1 vs 61.8) than those with higher English abilities. In addition, they were significantly more likely to be Hispanic, have a low income and have less education (table 2).

Those with low English ability (compared to those with English ability) were across the board less likely to have accessed the Internet regarding their procedure (27.9% vs 74.1%), to have used it to research the procedure (14.8% vs 45.5%) or to have spent a large amount of time researching the procedure (0.0% vs 40.0%). They also tended to rate the information they saw on the Internet as poor quality (42.8% vs 20.0%) (table 2).

The most likely source for patients to have used was overwhelmingly WebMD™. In terms of attitudes toward their procedures, those with lower English abilities were more likely to have a poor understanding of their procedure (14.7% vs 7.5%). Interestingly those with low English abilities also reported a significantly decreased sense of anxiety regarding their procedure (27.9% vs 58.2%) compared to high English ability individuals (table 2).

As much of the demographic data, including increased age, ethnicity, income and education, could have a confounding role in the relationships of interaction with the Internet and patient attitudes, a multivariate analysis was conducted to remove this possible source of bias. On

Table 1.
Demographic data regarding patient population

Mean pt age ± SD	66.5 ± 14.8
No. male (%)	90 (77.9)
No. ethnicity (%):	
White (nonHispanic)	26 (22.4)
Hispanic	74 (63.8)
Other	16 (13.8)
No. native language (%):	
English	28 (24.1)
Spanish	81 (69.8)
Other	7 (6.1)
No. peak income/yr (%):	
Less than 30k	53 (45.1)
30−60k	32 (27.4)
61−90k	14 (12.4)
Greater than 90k	17 (15)
No. education (%):	
Some high school	33 (30.6)
Completed high school	10 (9.3)
Some college	15 (13.9)
Completed college	27 (23.3)
Graduate school	23 (21.3)
No. elective procedures (%)	112 (96.4)