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Brief Communication

Patient and provider perspectives on the potential value and use of a bilingual online patient portal in a Spanish-speaking safety-net population

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ABSTRACT

Objective: To assess patient and provider perspectives on the potential value and use of a bilingual patient portal in a large safety-net health system serving predominantly Spanish-speaking patients.

Materials and Methods: We captured patient and provider perspectives through the administration of surveys to assess Internet access, barriers, and facilitators to patient portal adoption, along with portal preferences. We report on these survey results using descriptive and comparative statistics.

Results: Four hundred patients (82% response rate) and 59 providers (80% response rate) participated in the study. Although 73% of providers believed that the patient portal would increase patient satisfaction, just 39% planned to recommend portal use to patients, citing concerns related to time and reimbursement. In contrast, 72% of patients believed the patient portal would strengthen the patient-provider relationship and 77% believed it would improve the quality of care. Latino patients in particular believed the patient portal would strengthen the patient-provider relationship. Seventy-five percent of patients reported interest in a mobile version of the portal.

Discussion: Patients from a safety-net health system, most of whom were Spanish-speaking, reported a high level of interest in the patient portal. Providers at the same health system expressed reluctance about the portal due to concerns related to time and reimbursement.

Conclusion: Bilingual patient portal implementation has considerable potential to promote health care engagement within Spanish-speaking safety-net populations; however, lack of provider engagement in the process could undermine the effort.

Key words: personal health records, electronic health records, safety-net providers, digital divide, electronic mail

INTRODUCTION

An online patient portal is an encrypted website that grants patients access to their personal health records (PHRs), enabling functionalities such as secure communication with providers, appointment scheduling, and refill requests.[1] Previous work has demonstrated that utilization of patient portals is associated with better health outcomes, higher patient satisfaction, and improved clinic efficiency.[2–5] However, while the majority of patients express a strong interest in communicating with their providers electronically, only a small minority of patients reported actually doing so.[6–9] More recently,

however, there is evidence of increased use of secure messaging by patients,[10] even in safety-net settings.[11]

Utilization of patient portal functions can be particularly challenging for Spanish-speaking patients who are less comfortable communicating in English. Indeed, studies have demonstrated lower rates of patient portal registration among Spanish-speaking people, as well as difficulty navigating English-based PHRs.[12] The aim of our brief report is to describe patient and provider perspectives on the potential value and use of a bilingual English-Spanish patient portal within a large safety-net health system serving a predominantly Latino population on the eve of implementing the portal.

METHODS

In June 2014, just prior to implementing a bilingual English-Spanish online patient portal at AltaMed Health Services, a large, urban multi-site community health center serving primarily low-income Spanish-speaking patients, we conducted a 37-item survey of primary care patients during face-to-face interviews in the waiting room. The survey was translated and approved by AltaMed's translation department. The surveys were conducted at AltaMed Medical Group–Commerce, the largest clinic of the 43 primary care sites affiliated with AltaMed.

Patients were eligible if they were 18 years of age or older, received care at an AltaMed clinic site, and were fluent in English or Spanish. Patients were surveyed using convenience sampling in which 2 medical students fluent in English and Spanish approached potential participants in clinic waiting rooms. All patients in the waiting room were approached, regardless of their demographic characteristics, and most patients in the waiting rooms during the administration period were surveyed.

Simultaneously, we also distributed a distinct 37-item survey for full-time AltaMed primary care providers (physicians, physician assistants, and nurse practitioners). Surveys were delivered in person and were retrieved through interoffice mail or e-mail. Providers were eligible if they were employed as full-time primary care providers at any of 12 high-volume AltaMed clinics throughout Los Angeles and Orange Counties. Study authors designed the survey instruments based on published literature and expert opinion, with most items being closed-ended with precoded responses (see Appendices A and B). Chi-square tests were run to assess for significant differences between different subgroups. Six patient comparison groups were constructed based on participant demographics: (1) age ($\leq$40 years vs >40 years), (2) gender (male vs female), (3) primary language (English, Spanish, or other), (4) ethnicity (Hispanic/Latino vs Non-Hispanic/Latino), (5) educational attainment ($\leq$high school vs >high school), and (6) annual family income (<$10 000 vs $\geq$$10 000). Because of the number of different comparison tests conducted, a Bonferroni correction was applied to account for the increased possibility of type I error. As there are 6 comparison groups for patients, each with variables that may not be independent, findings were considered statistically significant at $P < .008$.[13]

The study was initially conducted as a quality improvement project and the survey data were subsequently analyzed for research purposes. The University of California, Los Angeles Office of Protection of Research Subjects determined that the research analysis phase of this project did not meet the federal definition of human subject research and thus did not require Institutional Review Board review.

RESULTS

Of all eligible patients approached ($n = 488$), 400 agreed to participate (82% response rate), and of all eligible providers approached

($n = 74$), 59 agreed to participate (80% response rate). Patient participants were primarily Latino (97%) and Spanish-speaking or other (54%), and had a high school education or less (64%) (see Table 1). Provider survey respondents were mostly >40 years of age (54%), did not identify as Hispanic (64%), and reported English as their primary language (80%) (see Table 2).

In the patient survey, the majority of respondents reported having access to the Internet (78%) and most were in favor of patient portal adoption, with 77% believing it would improve patient care (see Table 1). The majority of patients (72%) believed communicating with their providers via the patient portal would strengthen their relationships (Table 1). Most patients (80%) also believed that a version of the patient portal specifically for mobile devices would be "useful" or "very useful."

We identified several significant differences among patient subgroups with respect to technology access. Specifically, the following subgroups reported having less access to the Internet or smartphones: patients >40 years old (54% vs 92% for Internet access among those $\leq$40, $P < .001$; 44% vs 85% for smartphone access, $P < .001$); patients whose primary language is Spanish or other (66% vs 92% for Internet access, $P < .001$; 60% vs 83% for smartphone access among those whose first language is English, $P < .001$); patients with $\leq$high school education (68% vs 96% for Internet access among those with >high school education, $P < .001$; 61% vs 87% for smartphone access, $P < .001$), and patients with an annual family income <$10 000 (69% vs 85% for Internet access among those with an annual family income $\geq$$10 000, $P < .001$; 58% vs 79% for smartphone access, $P < .001$). The other noteworthy relationship, of borderline statistical significance, was that Hispanic/Latino patients were more likely than non-Hispanic/Latino patients to believe that the patient portal would improve their relationships with their providers (73% vs 36%, $P = .08$), though only 4 non-Hispanic/Latino patients were included in our survey.

Analysis of provider survey data demonstrated that although 73% of all providers believed the patient portal would increase patient satisfaction, only 39% reported being likely or very likely to recommend its use to patients (Table 2). Providers reported several concerns regarding the portal that might explain their hesitancy: 85% expressed concern about carving out extra time to manage the portal and 64% expressed concerns about reimbursement. When comparing different subgroups of providers, no statistically significant differences in portal attitudes were found across age, gender, primary language, ethnicity, or professional designation.

DISCUSSION

In this survey of patients and providers at a large safety-net health system serving a predominantly Latino population, we found a divergence between what patients favored and what providers endorsed in terms of patient portal adoption. While most patients were in favor of using an electronic patient portal to communicate with their health care providers, providers were hesitant about portal adoption. In fact, most providers would not recommend it to their patients. This is concerning, because approximately three-quarters of patients, particularly Hispanic/Latino patients, reported that portals are able to improve the patient-provider relationship and overall quality of care. It is also concerning because provider attitudes substantially impact the likelihood that patients will enroll in portals.[14]

Although most providers recognized the benefits of portal use in improving patient satisfaction, many expressed concerns about

Table 1. Patient Technology Access and Patient Portal Attitudes

Patient Characteristics	Total	Internet Access		Smartphone Access		Patient Portal Will Strengthen Provider Relationship		Patient Portal Will Improve Overall Quality of care		(Very) Interested in Mobile Patient Portal	
	% (n)	% (n)	P-value	% (n)	P-value	% (n)	P-value	% (n)	P-value	% (n)	P-value
All	100 (400)	78 (313)		71 (282)		72 (287)		77 (307)		75 (301)	
Age (years)											
≤40	64 (255)	92 (234)	<.001*	85 (218)	<.001*	69 (177)	.168	79 (201)	.193	82 (209)	<.001*
>40	36 (145)	54 (79)		44 (64)		76 (110)		73 (106)		63 (92)	
Gender											
Male	28 (111)	81 (90)	.395	71 (79)	.855	74 (82)	.559	78 (87)	.633	71 (79)	.241
Female	72 (289)	77 (223)		70 (203)		71 (205)		76 (220)		77 (222)	
Primary Language											
English	46 (185)	92 (171)	<.001*	83 (153)	<.001*	72 (134)	.779	76 (141)	.815	79 (147)	.070
Spanish or other[1]	54 (215)	66 (142)		60 (129)		71 (153)		77 (166)		72 (154)	
Ethnicity											
Hispanic/Latino	97 (389)	78 (304)	.771	70 (274)	.870	73 (283)	.008	77 (300)	.296	75 (293)	.844
Non-Hispanic/Latino	3 (11)	82 (9)		73 (8)		36 (4)		64 (7)		73 (8)	
Educational Attainment											
≤High school	64 (255)	68 (174)	<.001*	61 (156)	<.001*	68 (173)	.021	73 (186)	.017	72 (184)	.057
>High school	36 (145)	96 (139)		87 (126)		79 (114)		83 (121)		81 (117)	
Annual Family Income											
<$10 000	40 (160)	69 (110)	<.001*	58 (93)	<.001*	69 (110)	.277	72 (115)	.059	72 (115)	.202
≥$10 000	60 (240)	85 (203)		79 (189)		74 (177)		80 (192)		78 (186)	

*Indicates statistical significance. Bonferroni correction was applied with 6 comparison groups. Findings were considered statistically significant at $P < .008$.

[1] A total of 2 participants reported "Other" as their primary language, with 213 participants reporting "Spanish" as their primary language.

Table 2. Provider Patient Portal Attitudes

Provider Characteristics	Total	(Very) Concerned About Carving Out Time		(Very) Concerned About Reimbursement		Patient Portal Will Strengthen Patient-Provider Relationship		(Very) Likely to Encourage Patient Adoption of Patient Portal		Patient Portal Will Improve Patient Satisfaction	
	% (n)	% (n)	P-value	% (n)	P-value	% (n)	P-value	% (n)	P-value	% (n)	P-value
All	100 (59)	85 (50)		64 (38)		37 (22)		39 (23)		73 (43)	
Age (years)											
≤40	34 (20)	80 (16)	.763	70 (14)	.785	40 (8)	.865	35 (7)	.251	75 (15)	.636
>40	54 (32)	88 (28)		63 (20)		38 (12)		47 (15)		69 (22)	
No answer	12 (7)	86 (6)		57 (4)		29 (2)		14 (1)		86 (6)	
Gender											
Male	34 (20)	95 (19)	.117	70 (14)	.521	35 (7)	.795	55 (11)	.071	75 (15)	.793
Female	66 (39)	79 (31)		62 (24)		38 (15)		31 (12)		72 (28)	
Primary Language											
English	80 (47)	85 (40)	.879	68 (32)	.243	34 (16)	.308	45 (21)	.076	70 (33)	.362
Spanish or other	20 (12)	83 (10)		50 (6)		50 (6)		17 (2)		83 (10)	
Ethnicity											
Hispanic/Latino	34 (20)	90 (18)	.637	60 (12)	.686	20 (4)	.091	35 (7)	.629	75 (15)	.786
Non-Hispanic/Latino	64 (38)	82 (31)		66 (25)		47 (18)		42 (16)		71 (27)	
No answer	2 (1)	100 (1)		100 (1)		0 (0)		0 (0)		100 (1)	
Professional Designation											
Physician	78 (46)	87 (40)	.374	65 (30)	.807	39 (18)	.582	35 (16)	.213	72 (33)	.710
Midlevel provider	22 (13)	77 (10)		62 (8)		31 (4)		54 (7)		77 (10)	

having to carve out time to respond to patient messages, a finding that was consistent among all provider subgroups. While published research has demonstrated that patient portal adoption can increase physician productivity, reduce clinic visits, and reduce phone calls,[5,15,16] in environments where provider productivity is assessed using visit volume, the portal may be viewed as a drain on efficiency. The overall sense of apprehension among providers can be partially explained by lack of understanding of the benefits associated with portal use. Published literature has highlighted the importance of portal education for providers, noting that inadequate familiarity and knowledge limit their endorsement of portals and desire to integrate them into clinical practice.[17]

Some have suggested that patient portals are unlikely to be utilized in safety-net settings because of low Internet access among safety-net patients.[9,12,18] Our findings do not support this concern. Although there were significant differences in technology access with respect to demographic characteristics, the majority of patients in this population reported Internet (78%) and smartphone (71%) access. Indeed, national trends indicate a rise in smartphone use.[19,20] In our study, not only did a majority of our population have access to smartphones, but a majority of patients expressed interest in a mobile version of the portal. This finding held true in all subgroups, including patients >40 years of age (63%).

Although our survey findings indicate widespread use of the Internet and mobile technology, a significant minority of patients are still relatively "disconnected," particularly those who are older and may not feel comfortable using technology. This highlights the need to ensure continued opportunities for traditional methods of provider communication for these relatively disconnected segments of the population. Additionally, it could benefit safety-net health systems to consider offering computer-training workshops to increase portal use.[11] Furthermore, because many patient portal functionalities rely on a baseline level of health literacy, workshops designed to improve these skills should also be implemented to increase their use.[21]

Another noteworthy finding from our study is that that Hispanic/Latino patients seemed to be more likely to believe the portal would improve the patient-provider relationship than non-Hispanic/Latino patients, though this difference was only of borderline significance, with a very small non-Hispanic/Latino sample size. Nevertheless, this trend is consistent with previous work demonstrating that compared to white patients, Latinos are more likely to register to use a patient portal when they have high trust in their provider, suggesting that patient-provider communication and trust particularly influence portal use among Latino populations.[22]

Finally, we would note that language incongruence may represent a substantial barrier to portal utilization by Latino populations. Indeed, a recent study found that Spanish-speaking patients were less likely to activate an English-language portal relative to English-speaking patients, though this finding may be driven by confounding factors.[23] The organization we studied for this analysis, subsequent to our survey, implemented a bilingual English-Spanish portal. Future analyses may offer insights on whether offering a bilingual vs an English-only portal affects use by Latino populations.

Limitations of this study include the relatively small sample size of providers we surveyed ($n = 59$). Also, although we intended to be as systematic as possible in our convenience sampling of patients in clinic waiting rooms, the opinions were limited to those of patients who were present on the days and times when data were collected. Our data may also be skewed by social desirability bias, which might have particularly influenced responses to questions about how portal use might impact patients' relationships with their

providers. Additionally, because this was an exploratory study designed to capture the opinions of patients and providers in a predominantly Spanish-speaking safety-net population, these findings may not be generalizable to other populations. Finally, because our survey was conducted just prior to widespread portal implementation at AltaMed, our findings do not reflect the opinions of patients with experience using a bilingual English-Spanish portal.

In summary, our study is the first we are aware of to assess patient and provider perspectives on portal implementation within a safety-net Latino health system. Our results could inform other health systems about the feasibility and importance of bilingual patient portal implementation in Spanish-speaking safety-net populations. We found that patients in this population were in favor of portal use, highlighting its convenience and benefits, whereas providers were more skeptical about its benefits and expressed significant concerns about additional time requirements. Patient portals have the potential to help safety-net institutions manage an ever-growing patient demand in a patient-centric manner; however, if this strategy is to be successful, provider enthusiasm and engagement will be critical. In addition, our findings suggest that developing a mobile version of the patient portal will be particularly important in Latino safety-net settings, where many patients report interest in using a mobile version of the portal.

Overall, our findings indicate that Spanish-speaking safety-net populations should not be underestimated in their perceived level of connectivity; in fact, these underserved communities may be more technologically engaged than expected, requiring health systems to innovate and provide services that capitalize on this trend to help reduce health disparities.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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CONTRIBUTORSHIP

Study conception and design: AO, KK, ME, FC, MS, MEH. Acquisition of data: AO, KK. Analysis and interpretation of data: AO, KK, SU, MV, MEH. Drafting of manuscript: AO, KK, MEH. Critical Revision: AO, KK, SU, MV, ME, FC, MS, MEH.

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