

Millennials Seeking Healthcare: Examining the Degree to Which Patients Utilize Online Resources

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ABSTRACT

Introduction. According to the 2020 U.S. Census, a Silver Tsunami is looming, with more than 75.4 million persons aged 57 to 75 expected to need more costly medical care. However, a larger wave of 83.1 million Millennials nearing adulthood is approaching rapidly. Therefore, it is important to understand how this population finds their physician and what may influence this decision.

Methods. Paper-based surveys were administered to adult patients at primary care and geriatric clinics located at the University of Kansas Medical Center in Kansas City, Kansas. Questions included demographic information, utilization and influence of online reviews, and the effects negative and positive reviews have on a patient's choice of physician. Descriptive statistics were calculated for respondent characteristics and survey responses. Chi-square and McNemar's tests were performed to evaluate differences between age and gender groups, and to determine how influential review ratings are in choosing a physician for medical care. Statistical significance was determined at the 0.05 level.

Results. A sample of 284 patients completed the survey (44.35 ± 17.54 years old [range = 18-90], 60.6% female, 57.4% white). Of Millennials, 67.2% read online reviews before choosing a physician. Millennials were significantly more likely to read online reviews before choosing a physician ($p = 0.004$) and utilize online resources to search for a new physician ($p < 0.001$) than older patients.

Conclusions. Millennials were more likely to research online reviews before choosing a physician. Therefore, an online review presence will be beneficial to one's practice to acquire this new wave of patients.

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INTRODUCTION

Many are concerned about the "Silver Tsunami", an expected increase in healthcare spending due to a large portion of the population living longer and, as such, expected to cost more to treat.¹ According to the U.S. Census, there is an estimated 73 million individuals aged 57 to 75 years old who are likely to require this higher acuity of care.² However, a much larger wave of patients is fast approaching with 83.1

million individuals, Millennials, the largest living generation, accounting for nearly 10 million more individuals than the Baby Boomer generation. At the age of 26, Millennials will be required to purchase their own health insurance as current health policy permits dependents of family insurance plans up to this age.³ As many Millennials are approaching this age limit, they are beginning to interact with the medical field independently for the first time in their lives. Patients are reliant and overall trusting of internet resources, so one might expect the next generation to turn first to their smartphone when navigating their healthcare.⁴ Further, patients may place more confidence in online health information than friends and family.⁵

Varying rates of patients using online physician reviews have been reported, with investigators indicating between 16% and 63% of patients utilize online reviews.^{6,7} According to a recent survey, almost three quarters (71%) of surveyed patients used online reviews as the first step to finding a new doctor.⁸ The wide discrepancy in utilization rates and relatively few studies conducted on use of online reviews to find a physician indicated a need for further research. Likewise, internet trends are changing constantly and adapting to users' needs. Therefore, up-to-date research on these trends is necessary to understand and respond to the needs of patients. Online reviews in other consumer markets matter to Millennials. According to a recent study conducted on consumer behavior, 96% of consumers aged 18 to 34 read local business reviews online.⁹ Moreover, 89% of consumers aged 18 to 34 trust online reviews. Although medicine is a fundamentally different industry than those measured in the preceding survey, utilization of a search engine for reviews on something as personal as healthcare may bleed into medicine.

Millennials contributed about 21% of total healthcare spending in 2018, with this portion of healthcare spending expected to grow as Millennials age and require additional care.¹⁰ Moreover, this generation of patients are changing expectations across the industry with greater demands for improved healthcare access, value, and consumer experience. In contrast to older generations, Millennials are much less brand loyal, and anyone seeking their business must adapt to acquire these patients.¹¹ This generation is comfortable and reliant on technology in daily life. To attain and further retain this patient population will require physicians to provide easy access to and availability of information about them online.⁵

It is feared that online reviews may have a negative impact on a provider's reputation. Previous publications have expressed that fears of negative reviews are what prevents providers from having an online review platform.^{12,13} According to findings published almost a decade ago, physicians were likely to have positive website ratings, with most patients likely to leave a positive review of their physician.^{5,14} Based on these findings, the likelihood of a provider's reputation being tarnished by poor patient reviews is relatively low. It is not known how the next generation of patients, however, will interpret online reviews of physicians.

Understanding how this next generation of patients finds and interacts with healthcare will better prepare the industry to receive the next wave of patients. The goal of this study was to explore the extent to which online resources and online reviews influence a patient's choice of physician.

METHODS

Patients visiting primary care and geriatrics clinics at an academic medical center located in the Midwest between May and July 2020 were invited to participate in a brief anonymized survey. Paper survey forms were distributed to patients and subsequently returned to clinic staff at the end of their appointment. Data collected included general demographic information, if participants read online reviews before choosing a physician, other resources they might utilize, and where they most commonly receive medical care. In addition, a five-point Likert-type scale, from extremely unlikely to extremely likely, was used to determine the influence of negative and positive online reviews on a participant's decision when selecting a physician for care and the likelihood participants will utilize online resources when looking for a physician. Incomplete surveys, and participants whose stated age was less than 18 were not included in the study. The project was approved by the University of Kansas Medical Center Human Research Protection Program. Consent for the study was obtained through a written preface at the beginning of the survey.

Data Analysis. Descriptive statistics were calculated for respondent characteristics and responses to survey questions (i.e., frequencies and percentages for categorical variables, and means and standard deviations for continuous variables). The chi-square test of independence and McNemar's test were performed to evaluate differences between age and gender groups and within the groups in terms of using online resources and how influential review ratings are in choosing a particular physician for medical care. Statistical significance was determined at the 0.05 level and effect sizes (Cramer's V, Cohen's κ , and odds ratio and their 95% confidence interval if applicable) were calculated for each comparison. REDCap®, a HIPAA-compliant web-based application, was used to collect and manage study data.¹⁵ All analyses were conducted using SAS 9.4.¹⁶

RESULTS

A total of 284 patients completed the survey (Table 1), consisting of 172 women, 110 men, and 2 respondents who self-identified as "Other". The patients' ages ranged from 18 to 90 years ($M \pm SD = 44.35 \pm 17.54$ years), and their race/ethnic distribution was representative of the geographic location. Survey results are presented with the study sample as well as subgroups based on age (Table 2 and Table 4) and gender (Table 3). Age subgroups were defined as those aged 18 to 38 years ($n = 122$) and those older than 38 years of age ($n = 162$); such grouping could maintain an adequate number of responses in each subgroup while differentiating the two by distinct generations. Gender subgroups were defined as females ($n = 172$) and males ($n = 110$), excluding "Other".

Reading Online Reviews. Overall, more than half of the patients (57%) reported they read online reviews of their physician. As seen in Table 2, the results of chi-square test further indicated that those aged between 18 to 38 years were two times more likely to read online reviews when choosing a physician compared to those who were older ($\chi^2(1) = 8.43, p = 0.004, V = 0.17, OR = 2.05 [1.27; 3.33]$). Women read online reviews more than men (59.9% vs. 52.7%), but this difference was not significant ($\chi^2(1) = 1.40, p = 0.24, V = 0.07, OR = 1.34 [0.83; 2.17]$).

Table 1. Sample demographics.

Variable	n/M	%/SD	Range
Age (years)	44.35	17.54	18-90
Gender			
Female	172	60.6%	
Male	110	38.7%	
Prefer not to say	2	0.7%	
Race/Ethnicity			
White	163	57.4%	
Black or African American	74	26.1%	
Hispanic or Latino	23	8.1%	
Asian or Pacific Islander	17	6.0%	
Native American/American Indian	4	1.4%	
Other	3	1.1%	
What other resources do/would you utilize when looking for a new doctor? (Choose all that apply)			
Friends/Family	222	78.2%	
Google Search	100	35.2%	
Doctors Clinic Website	114	40.1%	
Online Reviews (Google, Yelp, etc.)	86	30.3%	
Other	58	20.4%	
Where do you most commonly receive medical care?			
Primary care physician	231	81.3%	
Urgent care center	16	5.6%	
Emergency Room	9	3.2%	
Work/School clinic	7	2.5%	
Other	21	7.4%	

Utilize Online Resources. The majority of patients ($n = 163, 57.4%$) indicated they were likely to utilize online resources when looking for a physician. Those aged between 18 to 38 years were significantly more likely to do so compared to older patients ($\chi^2(4) = 28.64, p < 0.001, V = 0.32$). Also, women were more likely to utilize online resources than men, but this difference was not significant ($\chi^2(4) = 9.23, p = 0.056, V = 0.18$).

Influence of Online Reviews. On the survey, patients indicated how negative and positive reviews would influence their decision when looking for a physician. About half reported they were likely to be influenced by negative reviews ($n = 141, 49.6%$: either "extremely likely" or "likely"), while 23.6% ($n = 67$) reported they did not. Those aged between 18 to 38 years were more likely to be affected by negative reviews than older patients (59% vs. 42.6%); however, this difference was not significant ($\chi^2(4) = 9.01, p = 0.061, V = 0.18$). Also, women were more likely to be affected than men, but the gender difference (54.7% vs. 41.8%) was not significant ($\chi^2(4) = 8.69, p = 0.069, V = 0.18$).

Table 2. Survey responses by age group.

Variable	All (N = 284)		Aged 18-38 Years (n = 122)		Aged > 38 Years (n = 162)		Group Difference				
	n	%	n	%	N	%	χ^2	p	V	OR	95% CI
Do you read online reviews before choosing a doctor?							8.43	0.004	0.17	2.05	1.27; 3.33
Yes	163	57.4%	82	67.2%	81	50.0%					
No	121	42.6%	40	32.8%	81	50.0%					
How likely are you to utilize online resources?							28.64	< 0.001	0.32	-	-
Extremely Unlikely	35	12.3%	12	9.8%	23	14.2%					
Unlikely	30	10.6%	2	1.6%	28	17.3%					
Neutral	56	19.7%	23	18.9%	33	20.4%					
Likely	93	32.7%	41	33.6%	52	32.1%					
Extremely Likely	70	24.6%	44	36.1%	26	16.0%					

Table 3. Survey responses by gender.

Variable	All (N = 284)		Female (n = 172)		Male (n = 162)		Group Difference				
	n	%	n	%	n	%	χ^2	p	V	OR	95% CI
Do you read online reviews before choosing a doctor?							1.40	0.240	0.07	1.34	0.83; 2.17
Yes	163	57.4%	103	59.9%	58	52.7%					
No	121	42.6%	69	40.1%	52	47.3%					
How likely are you to utilize online resources?							9.23	0.056	0.18	-	-
Extremely Unlikely	35	12.3%	14	8.1%	21	19.1%					
Unlikely	30	10.6%	17	9.9%	13	11.8%					
Neutral	56	19.7%	34	19.8%	22	20.0%					
Likely	93	32.7%	59	34.3%	33	30.0%					
Extremely Likely	70	24.6%	48	27.9%	21	19.1%					

Table 4. Influence of online reviews.

Variable	McNemar's Test			
	S	p	κ	95% Confidence Interval
Influence of reviews on those aged 18-38				
General vs. Negative	15.44	0.120	0.43	0.30; 0.55
General vs. Positive	19.51	0.034	0.65	0.54; 0.76
Negative vs. Positive	15.95	0.101	0.46	0.34; 0.59
Influence of reviews on those aged >38				
General vs. Negative	15.92	0.102	0.63	0.54; 0.72
General vs. Positive	23.17	0.010	0.65	0.56; 0.74
Negative vs. Positive	34.75	< 0.001	0.67	0.58; 0.75

Almost two-thirds of the patients ($n = 184$, 64.8%) reported they were likely to be influenced by positive reviews, a greater percentage than the case of negative reviews (49.6%). Similar to negative reviews, those aged between 18 to 38 years and women were more likely to be affected by positive reviews than their counterparts, but the differences were not statistically significant (for age, 71.3% vs. 59.9%, $\chi^2(4) = 9.11$, $p = 0.058$, $V = 0.18$; for gender, 69.8% vs. 57.3%, $\chi^2(4) = 6.76$, $p = 0.15$, $V = 0.15$). Those aged between 18 to 38 years were more likely to be affected by positive reviews than by general reviews ($S = 19.51$, $p = 0.034$, $\kappa = 0.65$ [0.54; 0.76]). Similarly, for those aged older than 38 years, positive reviews were more influential compared to general reviews ($S = 23.17$, $p = 0.010$, $\kappa = 0.65$ [0.56; 0.74]) and negative reviews ($S = 34.75$, $p < 0.001$, $\kappa = 0.67$ [0.58; 0.75]).

Other Resource Options. To ascertain what other resources patients used to find a physician, respondents were asked to select all resource options that apply. The most common responses were “Friends/Family” ($n = 222$, 78.2%), followed by “Doctor’s clinic website” ($n = 114$, 35.2%) and “Google Search” ($n = 100$, 40.1%). One specific item that was not included in the list of response options, but was specified by several patients, was their insurer’s website ($n = 19$, 6.7%). Patients being seen at a primary care clinic indicated they most commonly received medical care at a primary care clinic ($n = 231$, 81.3%); the next most utilized was Urgent Care ($n = 16$, 5.6%) followed by the Emergency Room ($n = 9$, 3.2%).

DISCUSSION

This single-site survey of patients seen at an academic medical center located in the Midwest found patients were likely to read online reviews and utilize online resources when searching for a physician. Those aged between 18 to 38 years were more likely to conduct their own research by utilizing online resources and reading online reviews before choosing a physician. Likewise, those aged > 39 years were found to utilize online resources and read reviews, but not to the same degree as those within the 18 to 38 year age group.

We found that more than half of patients read online reviews of their physician. Other studies have found similar rates ranging from 42% to 61% compared to the 57% found in this study.^{5,7} Participants aged 18 to 38 years were two times more likely to read online reviews than older generations, indicating the online shift occurring generationally and the importance of online reviews to this patient population. The influence of online reviews has been extended past patients themselves. Online reviews have been linked to better Hospital Consumer Assessment of Healthcare Providers and Systems scores (HCAHPS) and, given the impact these scores have on hospitals and physicians, it can be conceived that online reviews may find themselves in a similar type of scoring system.⁷ In fact, in 2009 the United Kingdom’s National Health Service (NHS) encouraged patients to rate their general practice physicians through the NHS webservice.¹⁷ Whether a similar approach will be implemented by government subsidized healthcare in the U.S. remains unclear. Furthermore, it has been reported that patients are more likely to leave a positive review than a negative one.¹⁴ To better serve this population, it may be within a medical practice’s best interest to be more available on online review platforms and encourage patients to leave online reviews.

Online resources were found to be useful to patients when looking for a physician. By age group, those aged 18 to 38 years were much more likely to utilize online resources compared to older generations. This may signify a shift in the way patients find their physician and directly impacts primary care as online resources, such as reviews or a clinic website, will be the first impression many patients gain about a practice. It would be within a practice’s best interests to put time and resources into their online presence to be better perceived by prospective patients.

Another finding suggested that online reviews influence a patient’s choice of physician. Providers have become concerned about the impact negative reviews may have on their reputation within the community.^{12,13} We found negative reviews, compared to positive ones, were not likely to influence a patient’s decision. Furthermore, positive reviews had a much larger degree of influence compared to negative reviews. Similarly, other investigations have shown positive reviews have a greater influence than negative ones, providing further evidence that negative reviews have little influence on patients’ decisions.^{5,14}

The most recent research on the effects of online resources on patients’ decisions were outdated, as these studies were published several years ago.^{7,14} Further, these studies did not compare internet usage on a generational basis. Importantly, internet habits and practices change rapidly and must be measured on a consistent basis to capture and understand current trends.¹⁸ This constant adaptation may explain the wide range of online review usage reported previously. Although our research suggested there may be a relationship between the tone of the review and patients recruited to a practice, it would be advantageous for providers seeking to expand their practice to encourage online patient reviews.

We also gathered data on what other resources patients use to find their physician. Many respondents utilize word of mouth communication via friends and family while also indicating they utilize “Google search” as resources to find their physician. Interestingly, very few respondents used Facebook as a resource while the “Doctors clinic website” was the second most common response. This suggested that both word of mouth and Google can be effective forms of obtaining patients, while Facebook may have limited benefit.

Limitations. This study should be interpreted considering the limitations of a cross-sectional study. Using self-reported data to study internet use may have resulted in over- or under-reporting of use, although studies of internet use for health purposes similarly have relied on self-reported data.¹⁹ No information was collected on education, household income, or internet availability, all factors that have been reported to influence internet use.²⁰ The survey was conducted at a single institution with adults who were waiting to receive medical care and female respondents represented most survey responses, limiting the generalizability of the results. Further, the survey instrument did not specify whether an individual had been an established patient at the practice. New patients were likely younger and more trusting of internet resources while older, more established patients, may have

been seen by the same provider for several years. As the utilization of online resources by patients accessing health care was extensive and varied greatly by age, gender, and background, further study is warranted.

CONCLUSIONS

Despite looming concerns about our aging population, Millennials are the largest living generation, with many approaching an age where they will need to find new insurance and, in many cases, a new physician. When confronted with this issue, they will look online for reviews of practicing physicians. Negative reviews have little impact on a patient's choice of physician, therefore demonstrating the necessity to be available online. Further research is necessary to determine whether reviews have an impact on the number of new patients recruited to a practice. However, our research suggests an online presence can make a physician's practice more accessible to younger generations and can be instrumental in capturing the new wave of young patients.

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