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Weighting patient satisfaction factors to inform health care providers of the patient experience in the age of social media consumer sentiment

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Abstract

The researchers explored the possibility that patients would go beyond simple ranking and could give weight to previously validated and reliable patient satisfaction factors, while also describing their online habits related to the patient experience and health seeking information in order to inform medical providers on what patients say matters most when evaluating satisfaction with their provider. One thousand one hundred and sixty-four adults completed a 13- item web-based quantitative survey, developed by public health researchers, to weight patient satisfaction factors and describe online health seeking habits of patients across the United States. Proportional weights for each of the patient satisfaction factors were calculated for surgical and non-surgical providers based on participants' allocation of 100 points. Weighted factors revealed that not all factors are weighted evenly and some matter more than others. For both non-surgical and surgical providers, thoroughness of the exam and a provider's ability to answer questions ranked among the top factors. Bivariate analyses found statistically significant differences in proportional weights by gender, age, and writing/seeking provider information online. Patients weight some patient satisfaction factors as more important than others and some are more likely to post online than others. Physicians will be required to act and react quickly to address online patient sentiment and to pay special attention to what patients weigh as the most important. This study is a first step to utilize previously validated and reliable factors to help weight the factors in light of online health seeking and rating behavior.

Keywords

Patient experience, patient satisfaction, consumer engagement, consumer sentiment, social media

Introduction

Social media, provider rating websites, and other online platforms continue to drive the way patients communicate the patient experience. Begun as a way for providers to gauge the mutual relationship between provider and patient,¹ measure the impact of provider behavior on patient treatment adherence,² and assess links between patient satisfaction and quality of care,^{3,4} patient experience surveying using social media platforms has become a way for patients to provide an unfiltered narrative of their patient experience.⁵ Patients are standing up positively and negatively to detail provider/patient interactions to their own social networks and for anyone who uses the Internet for information on providers. Social media platforms have enhanced the opportunities for patients to provide unsolicited and unfiltered expressions beyond the limitations of ranking systems, observed behavior, and closed ended questions. Surveys, which have produced long lists of factors that express the patient experience,⁶ are giving room to ratings websites that allow patients to move away from rankings to provide full narratives of their experience to influence other

consumers and to drive behavior change among medical providers.

Patients are increasingly willing to express online exactly how they feel, in their own language, about their individual medical care provider and the surrounding environment.⁷ Patients are willing to use these websites to rate providers, clinics, hospitals and other health care facilities and write reviews as part of expressing their patient experience, with research supporting that while open to bias, unsolicited online ratings are correlated with traditional survey methods.⁸ Others are willing to go further and seek health information either in general terms or specifically to find a health care provider.

Health seeking and provider rating behaviors online are growing, although they are currently at low levels for both health seeking and provider rating behavior on the part of the general population.⁹ Web 2.0 has made room for a greater patient voice by making websites, where providers might have controlled the conversation and content, less static and more driven by user contributions and content.¹⁰ Of growing interest to providers and payers is how to capture and analyze this content and behavior and

compare it to what weight patients put on different aspects of their patient experience.

Online comments can impact a medical practice in both positive and negative ways, including providers being penalized by their institutions or considering leaving the profession when faced with negative comments.¹¹ While still in its infancy, the general public's use of these internet tools to access health information, understand their health behaviors or treatment options, and evaluate providers, is growing.¹² As health care delivery becomes more competitive¹³ and value-based purchasing drives provider behaviors,¹⁴ health care providers are asked to focus more attention on drawing in and retaining patients. With the proliferation of 24-hour clinics, urgent care centers, and telemedicine, patients now have more choices with respect to access points for clinical care, which creates more consumer-driven behavior on the part of patients. The behavior goes beyond simple patient reflection on general satisfaction and leaves providers with the task of sifting through the comments to determine what matters most to patients during their experience.

Determining what patients want when it comes to their patient experience has been the focus of research in the field for the last thirty years, mostly through development of ranking systems from The Picker Institute and others.^{15,16,17,18} Previous research has asked patients to rank provider characteristics and services, usually on a scale of most important to least important. But when considering all these rankings, which ones carry the most weight when examining overall patient experience are of interest to providers and payers. Of further interest is which patients post narratives about their experience online and how providers can use the information to improve the patient experience, beginning with those that mean the most to patients. How much weight do patients give to the different factors in their patient experience? What can we learn about those who post online and the impact their comments may have on surgical and non-surgical practices?

Methods

Study Design, Sample and Procedures

A cross-sectional quantitative web-based survey consisting of 13- items was administered to weigh patient satisfaction factors and describe online health seeking habits among a convenience sample of adults in the United States. The study was reviewed and approved by The George Washington University Internal Review Board (IRB # 101411). Researchers consulted an online panel through the survey distributed to a census-based representative sampling frame of adults as well as a convenience sample recruited through online health care ratings websites and health care topic listserves. The total sample included 1,164 participants. No significant differences were found

in the responses by the only two demographic questions asked (age and gender) between participants in the online panel and in the convenience sample. Eligibility criteria included being English-proficient male and female adults at least 18 years of age.

Measures

The survey took approximately 7 to 10 minutes to complete and collected information on: 1) demographics including age and gender; 2) last visit with a provider (never, in the last year, 1 more years); 3) last surgical procedure (never, in the last year, 1 or more years); 4) whether participants write provider reviews (yes/no); and 5) whether participants seek information about providers online (yes/no).

Patient satisfaction measures focused solely on provider related characteristics and were slightly adapted from a previously validated and reliable patient satisfaction scale.¹⁶ Syntax but not words were altered to assist in the flow of the online survey. In an effort to minimize bias related to reporting satisfaction on an individual provider or individual visit, participants were instructed as follows: "This is not an evaluation of a single provider, rather a survey asking you to weight a list of factors people often consider when they rate or choose a healthcare provider." For purposes of this study, the term "provider" was defined as doctor/physician, physician's assistant or nurse practitioner. To weight patient satisfaction measures, participants were asked to allocate 100 points to a list of 10 factors and therefore, each factors could receive a number between 0 and 100. Participants were asked to weight the 10 factors for non-surgical and surgical providers separately. To minimize survey response bias, the question randomization feature was utilized for the 10 factors.

Participants were asked to allocate 100 points to the following 10 factors: 1) a provider's previous success in treating the illness/administering care; 2) the thoroughness of the examination given by a provider; 3) a provider including you in decisions about your care or treatment; 4) a provider's friendly and caring attitude; 5) the timely return of lab or test results; 6) the reputation of a provider in the community; 7) the ability of a provider to answer all your questions; 8) a provider following up with you on any problems or concerns; 9) the clearness of provider instructions on taking care of your health condition; and 10) the amount of time a provider spends with you.

Since the survey was electronic, responses were downloaded into IBM SPSS 20.0 and didn't require manual data entry and coding.

Analysis

Quantitative data analysis was conducted on 1,164 participants. A total of 1,181 people participated in the

survey, however 17 participants did not complete more than 15% of the survey and were dropped from the dataset. Descriptive univariate analyses were conducted to describe the study population and to calculate proportional weights for the 10 patient satisfaction factors. Correlation and Analysis of variance tests were conducted to examine differences in proportional weights by age, gender, and those who write/seek information regarding providers online.

Results

Table 1 presents characteristics of the study sample. As shown, the majority of participants are female (74%) and White (82.3%). The distribution by age was fairly even (34.8%, 18-34 years old; 23.5%, 35-64 years old; 41.7%, above age 65). The majority of participants (87.9%) have been seen by a provider in the last year and only 20.1% have never had some type of surgical procedure. Only 17.3% of participants reported writing online reviews of healthcare providers, yet 55.8% reported seeking information about providers online.

Tables 2 & 3 present the total sum of points allocated and proportional weights for each patient satisfaction factor in order of importance for non-surgical and surgical providers respectively. As shown for non-surgical providers, participants allocated the most number of points for thoroughness of the exam (sum = 16041; weight = 0.141). A provider including you in decisions

about your care or treatment (sum = 13286; weight = 0.117) and the ability of a provider to answer all your questions (sum = 13247; weight = 0.117) ranked as the second most important factors. The timely return of lab results (sum = 7648; weight = 0.067) and the reputation of a provider in the community (sum = 7357; weight = 0.065) were allocated the least number of points and ranked as least important patient satisfaction factors for non-surgical providers.

With respect to surgical providers (Table 3), a provider's previous success in treating the illness/administering care was allocated the most weight (sum = 17905; weight = 0.162). The thoroughness of the examination given by a provider; (sum = 14002; weight = 0.127) and the ability of a provider to answer all your questions (sum = 12656; weight = 0.105) also ranked as important factors. A provider's friendly and caring attitude (sum = 8687; weight = 0.079) and the timely return of lab results (sum = 7782; weight = 0.070) were allocated the least points and weighted the lowest of all patient satisfaction factors for surgical providers.

Figures 1 and 2 present proportional weights for each patient satisfaction factor by gender. As shown for non-surgical providers, females are significantly more likely to weight a provider's friendly and caring attitude (0.114 versus 0.094) and a provider following up on any problems or concerns (0.093 versus 0.084) *higher* compared to males. For surgical providers, males are significantly more likely

Table 1. Characteristics of the Study Sample (n=1164)

Demographics	% (n)
Gender	
Male	26.30 (303)
Female	73.70 (849)
Age	
18-34	34.79 (405)
35-64	23.54 (274)
65+	41.67 (485)
Race	
White	82.29 (911)
Black	9.49 (105)
Other	8.22 (91)
Last time saw a provider	
Never	1.21 (14)
In last year	87.89 (1,016)
2 years or more	10.90 (126)
Last time had surgery	
Never	20.10 (232)
In last year	15.68 (181)
2 years or more	64.21 (741)

Table 2. Non-surgical proportional weights and sum of total points allocated for each patient satisfaction factor, in order of most important to least important.

Rank	Patient Satisfaction Factor	Sum	Proportional Weight
1	The thoroughness of the examination given by a provider.	16041	0.141
2	A provider including you in decisions about your care or treatment.	13286	0.117
3	The ability of a provider to answer all your questions.	13247	0.117
4	A provider's friendly and caring attitude.	12410	0.109
5	A provider's previous success in treating the illness/administering care.	12379	0.109
6	The amount of time a provider spends with you.	10774	0.095
7	A provider following up with you on any problems or concerns.	10393	0.091
8	The clearness of provider instructions on taking care of your health condition.	10165	0.089
9	The timely return of lab or test results.	7648	0.067
10	The reputation of a provider in the community.	7357	0.065

Table 3. Surgical proportional weights and sum of total points allocated for each patient satisfaction factor, in order of most important to least important.

Rank	Patient Satisfaction Factor	Sum	Proportion
1	A provider's previous success in treating the illness/administering care.	17905	0.162
2	The thoroughness of the examination given by a provider.	14002	0.127
3	A provider including you in decisions about your care or treatment.	12656	0.115
4	The ability of a provider to answer all of your questions.	11616	0.105
5	A provider following up with you on any problems or concerns.	10292	0.093
6	The clearness of provider instructions on taking care of your health condition.	10003	0.091
7	The amount of time a provider spends with you.	9088	0.082
8	The reputation of a provider in the community.	8769	0.079
9	A provider's friendly and caring attitude.	8687	0.079
10	The timely return of lab or test results.	7782	0.07

to weight thoroughness of the exam (0.141 versus 0.120) *higher* than females. And again, females are significantly more likely to weight to a provider following-up on problems/concerns (0.096 versus 0.085) *higher* than males.

Figures 3 and 4 present proportional weights for each patient satisfaction factor by the three age categories. For non-surgical care, participants 65 and older are significantly more likely to weight thoroughness of the exam (0.159 versus 0.137 & 0.134) *higher* than younger participants, and significantly more likely to weight friendly and caring attitude (0.09 versus 0.115 & 0.114) *lower* than those who are younger. Participants in the 18-34 age group are significantly more likely to weight reputation in the community (0.076 versus 0.060 and 0.059) *higher* compared to older participants.

For surgical care (Figure 4), younger participants are significantly more likely to weight previous success (0.183 versus 0.156 and 0.143) and reputation in the community (0.095 versus 0.070 and 0.073) *higher* than older participants.

Figures 5 and 6 present proportional weights for each patient satisfaction factor by participants who write online provider reviews. For non-surgical providers, participants who write reviews are significantly more likely to weight reputation (0.083 versus 0.060) and timely return of labs (0.075 versus 0.066) *higher* compared to those who do not. No significant differences were found for surgical care and writing reviews online.

Figures 7 and 8 present proportional weights for each patient satisfaction factor by participants who seek

provider information online. For both non-surgical and surgical providers, participants who report seeking provider information online are significantly more likely to weight reputation in the community (non-surgical: 0.070 versus 0.054, surgical: 0.085 versus 0.073) *higher* compared to those who do not seek provider information online.

Discussion

The results indicate that patients do not weight all patient experience factors equally. Some factors matter more and therefore may drive overall patient satisfaction. Although sent to a census-based representative sample, the survey was responded to by nearly 75% women, in keeping with the 80% of women research indicates make the health care decisions for their family.¹⁹ Providers and payers should consider knowing what women weight as most important may help improve the patient experience for all family member, including having a friendly and caring attitude and following up after providing care. The results also indicate that, while doing so in low numbers (nearly 18%), patients are willing to share their experience with these factors either through ratings websites or when seeking health information.

The finding that over half of respondents seek information on providers online support previous research showing that nearly three quarters of parents are aware of ratings websites and nearly a quarter use them to select physicians.²⁰ Of note is the low weight given for the reputation of the provider or surgeon as a driving factor in patient satisfaction, allowing for patients to relate their own patient experience rather than relying on others to overly influence them. But as reported, younger respondents, who are more likely to post the information online and are increasingly narcissistic,²¹ rate reputation of a provider more important than those older. Reputation has long been a consideration in patient experience²² and providers and payers should consider monitoring their online reputation, as over time these younger patients will access healthcare at an increasing rate as they are faced with new health care challenges. What remains unknown is whether more contact with the health care system will change the factors they weigh as most important. But with young people most concerned about maintaining their own reputations, especially online,²³ provider and practices should make sure to monitor their own.

The findings of which factors are weighted more are intriguing and noteworthy, but of equal interest to the researchers was whether the weight given to each factor would be significant enough to be of value to providers and patients. Several factors did appear to weigh more heavily to patients and they were willing to consistently put greater points to those factors in an effort to give a better picture of what matters most to them. They include for Non Surgical: Gender: friendly (female); Age: thorough

(older), friendly (younger), reputation (younger), timely labs (older); Writes reviews: reputation (yes- writes reviews), timely labs (yes- writes reviews); Seek information online: answers questions (no- does not seek), reputations (yes- does seek). For Surgical: Gender: thorough (male), follow-up (female); Age: previous success (younger), follow-up, (older) reputation (younger), time spent (older); Seek information online: reputation (yes- does seek).

Historically, survey tools have separated questions related to surgical and nonsurgical providers, but respondents appear to strengthen the top three factors for both, thoroughness, answering questions, previous success in treatment, indicating the importance of these factors as worthy of special attention across surgical and non-surgical practices. This study's findings support that women are more concerned by friendly and caring attitude and provider follow up than males, while males are more likely to forgo personal connections for more tangible actions including thoroughness of the exam. Older patients are also more likely to weigh thoroughness of the exam and caring attitude higher than younger patients, but the overall low rated reputation of the provider is significantly higher in younger patients, as previously discussed. With less than 20% of the participants reporting writing online reviews of providers and only a little over half reporting seeking information about providers online, e-health and health care ratings have a tremendous opportunity for growth. Knowing that these individual factors weigh more heavily for certain genders or ages can assist providers in addressing negative patient sentiment and designing care programs that address what patients find most important.

Young respondents were not the only ones to put some weight to reputation. So, providers should not discount the findings that indicated having more online health seeking and review-writing patients in a practice may enhance the online profile of the provider. Further supporting the need for providers to pay attention to their reputation online is the significance of all those who write reviews being likely to weight reputation higher than those who do not. The same significance can be attributed to those who seek information online, with the weight for reputation significantly higher than those who do not seek provider information online. A growing number of ratings and narratives online can lead to possible negative impacts on a practice if the provider isn't monitoring patient sentiment and tending to his/her online reputation as described by patients.

Moving beyond surveys and ranking systems and using a weighting system like the one described in these finding, will be essential in the future as patients become more aware of the opportunities to write their own reviews online. Researchers must learn how to harness this online patient sentiment and analyze it in a systematic way to

make sense of the message patients are sending to their care providers. Patients weight different factors as more important than others and providers and payers can learn something from what patients say. Can we apply those weights to online patient sentiment to improve provider-patient relationships and enhance the patient experience?

There are several limitations to the current study. First, the sample was predominantly female and White and therefore one needs to be cautious about the generalizability of the findings. Although the survey was distributed to a census-representative sampling frame, the survey was optional and the final sample was not nationally representative. Second, the survey did not ask questions related to socioeconomic or educational levels, and therefore differences by SES and education could not be analyzed. Although these limitations caution the generalizability of findings, the results are still significant given the large sample size and significant differences by age and gender. Future studies should ascertain SES and education, and oversample males and a more diverse racial/ethnic sample.

Conclusions

The proliferation of online health care websites, listservs, provider ratings websites, and other social media platforms for posting and disseminating patient experience and encounter narratives will continue to grow dramatically. Physicians will be required to act and react quickly to address the narratives and to pay special attention to what patients weight as the most important, especially as it impacts their online reputation. Use of the weights found significant in this study could help providers and funders develop tools to harvest online patient sentiment and address those as most important quickly as a way to control provider reputation and protect provider practices.

Future studies should assess what matters most for other structural or environmental factors (wait times, office aesthetics, appointment portals, etc.), even though historically, these factors are the most addressed by providers and are the least important to patients. More research should focus on how to standardize these weighted factors through valid and reliable survey design and implementation and to use web-crawling programs to gather information for providers as they evaluate what information is being posted online. This study is a first step to utilize previously validated and reliable factors to help weigh the factors in light of online health seeking and rating behavior. More importantly, though, the medical field as a whole must adopt uniform ways to determine patient sentiment, especially posted online, and to address feedback in a way that builds and protects their practice and meets the needs of patients.

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Figure 1. Non-surgical patient satisfaction factors by gender

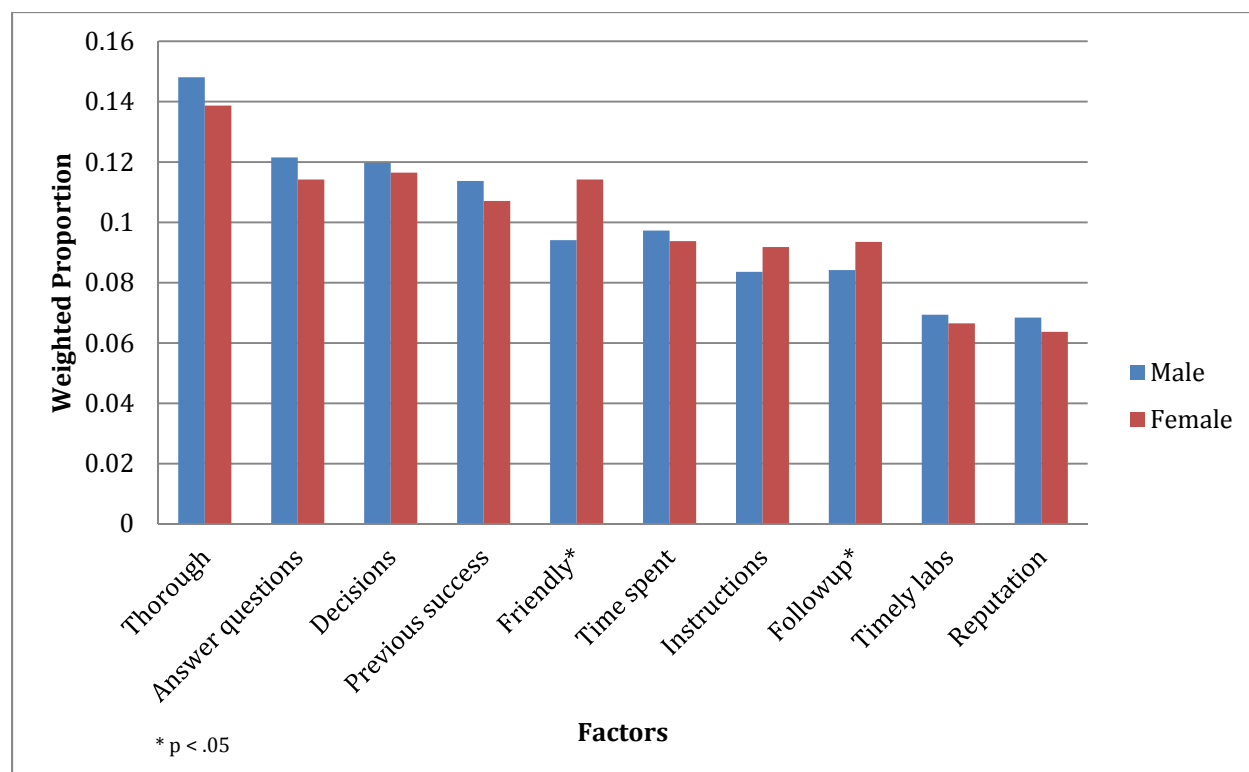


Figure 2. Surgical patient satisfaction factors by gender

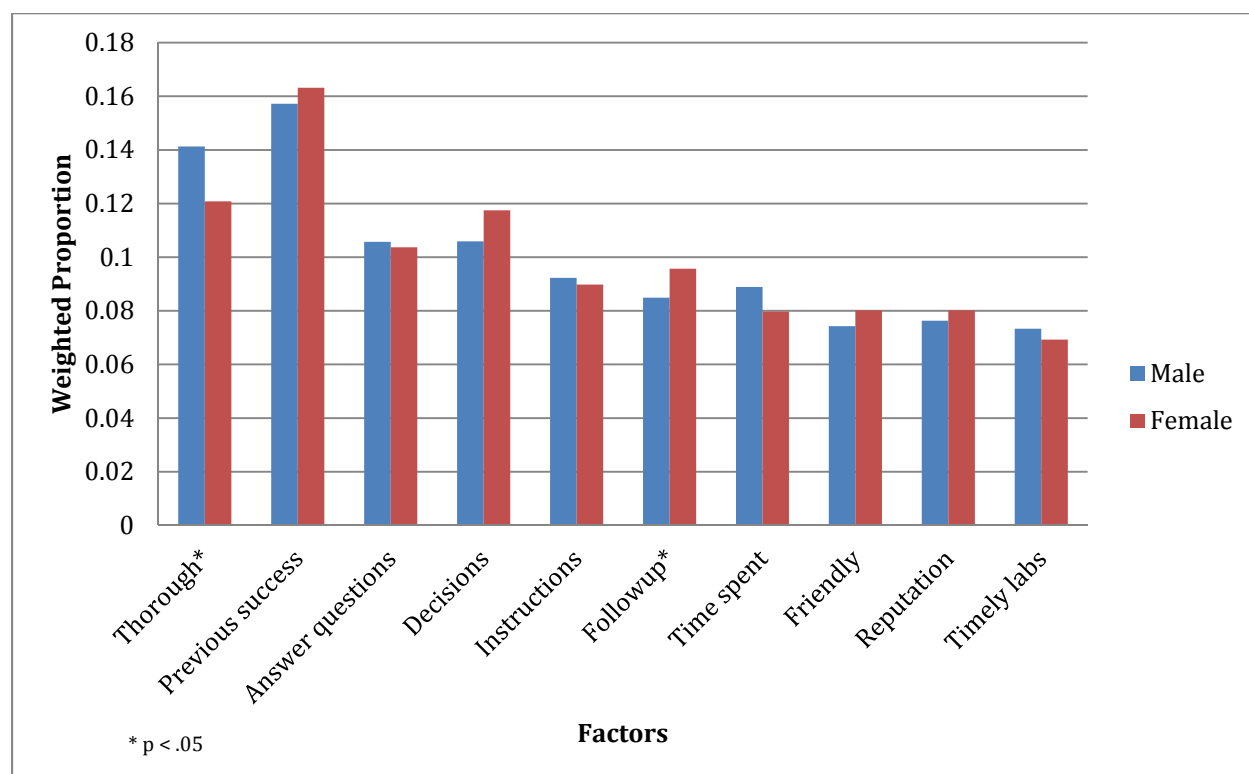


Figure 3. Non-surgical patient satisfaction factors by age

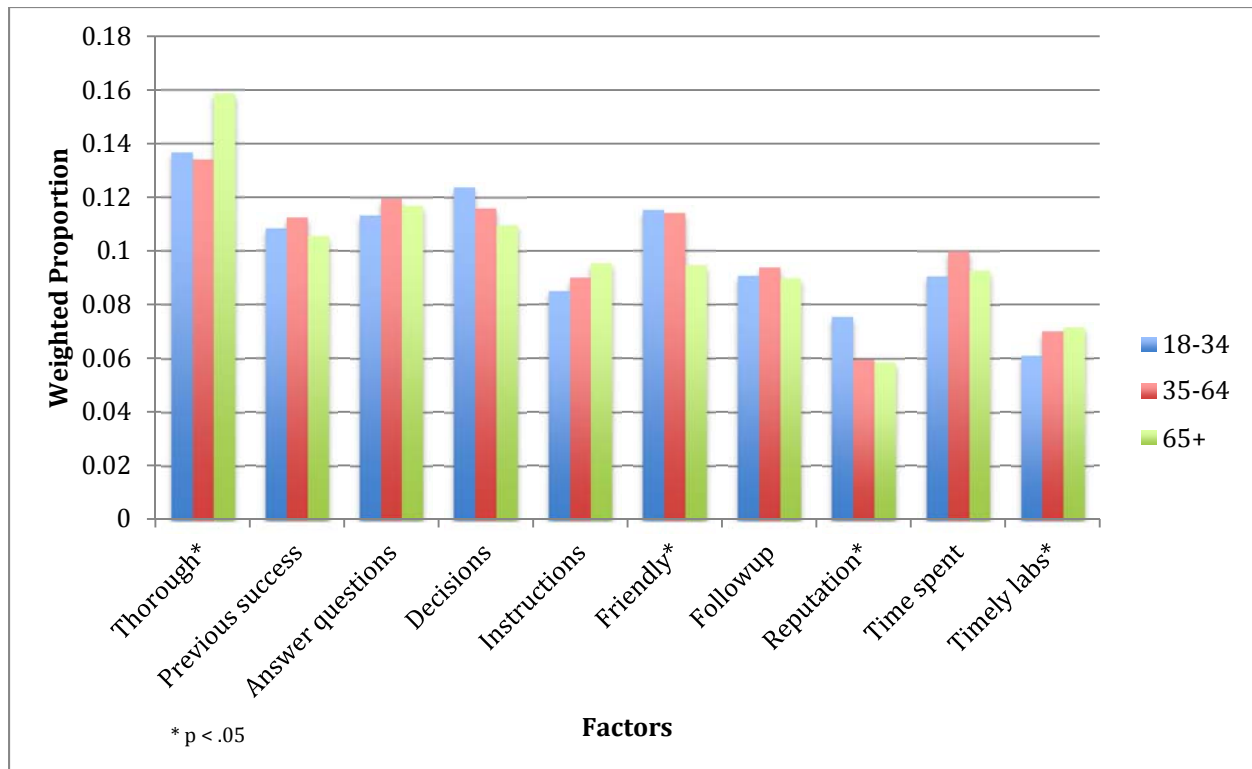


Figure 4. Surgical patient satisfaction factors by age

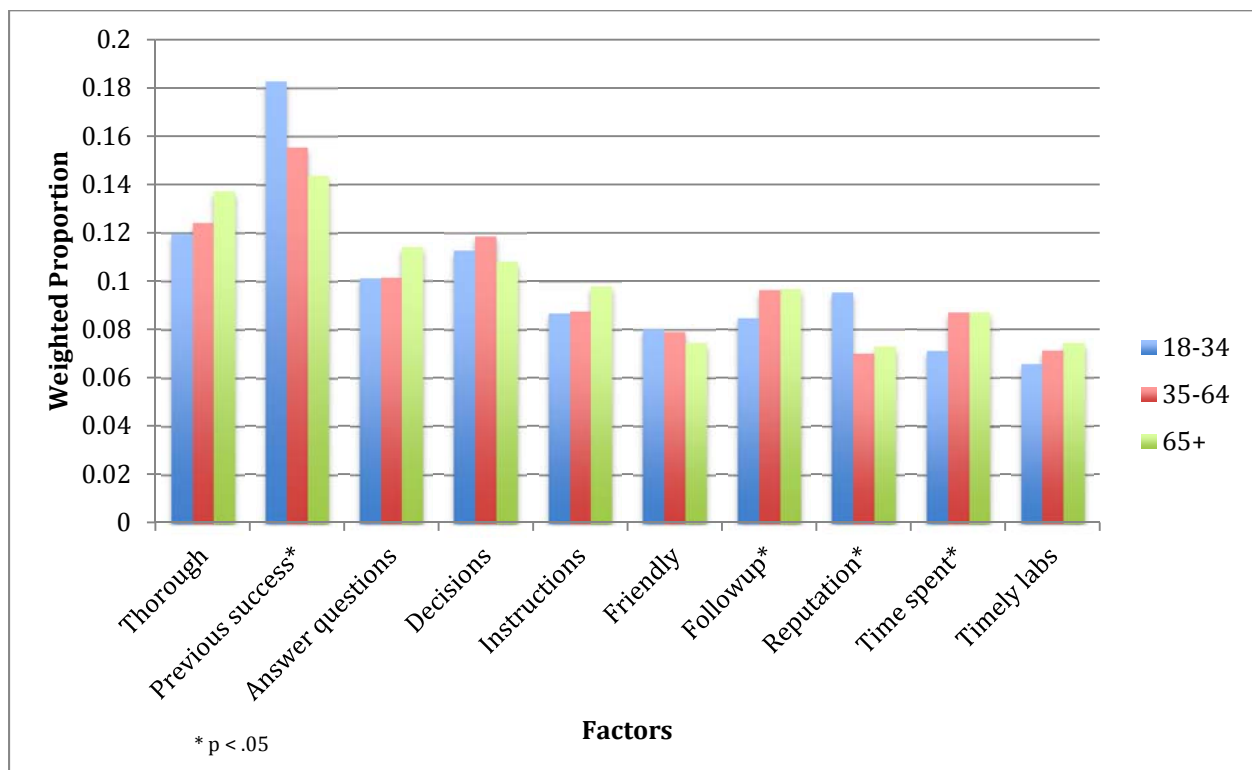


Figure 5. Non-surgical patient satisfaction factors by participants who report writing provider reviews online.

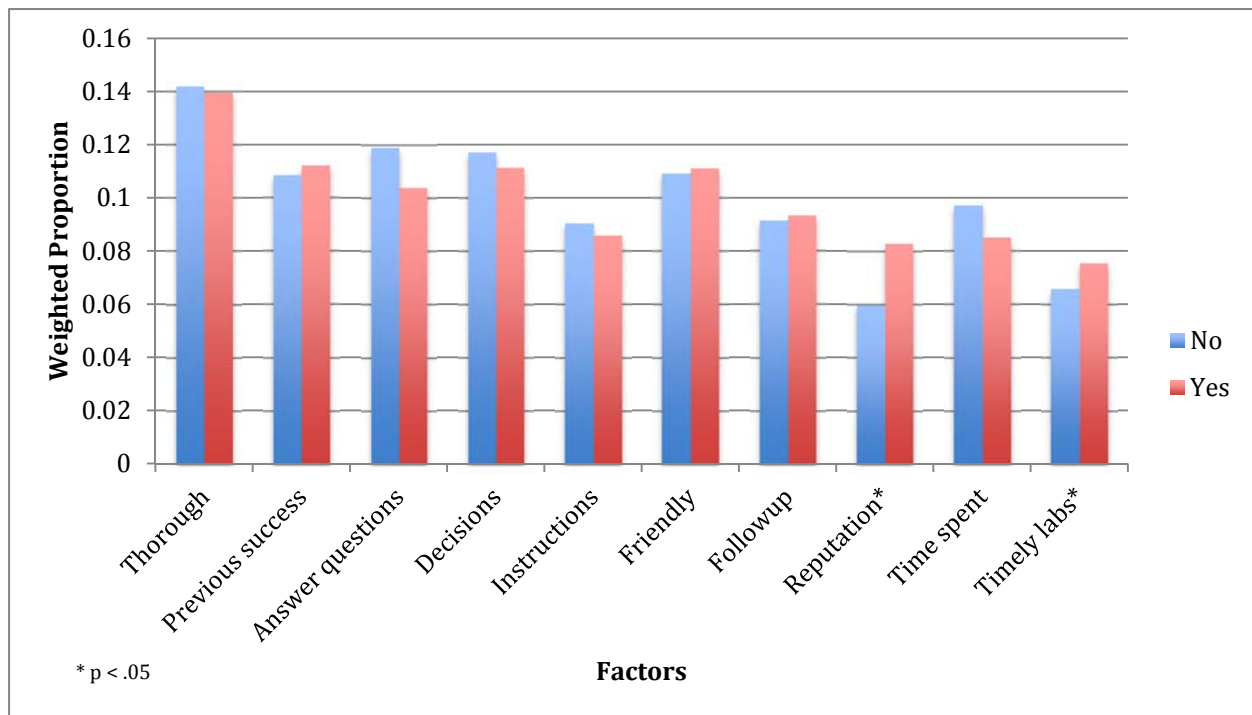


Figure 6. Surgical patient satisfaction factors by participants who report writing provider reviews online.

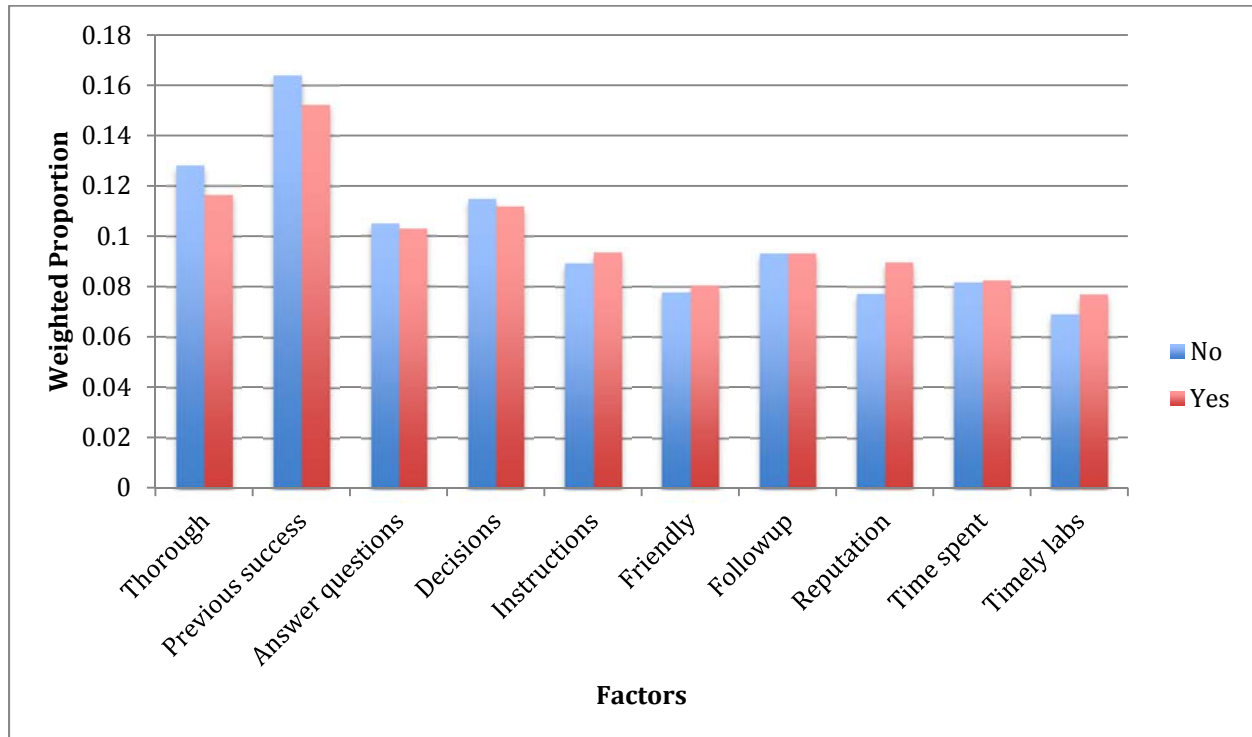


Figure 7. Non-surgical patient satisfaction factors by participants who report seeking provider reviews online.

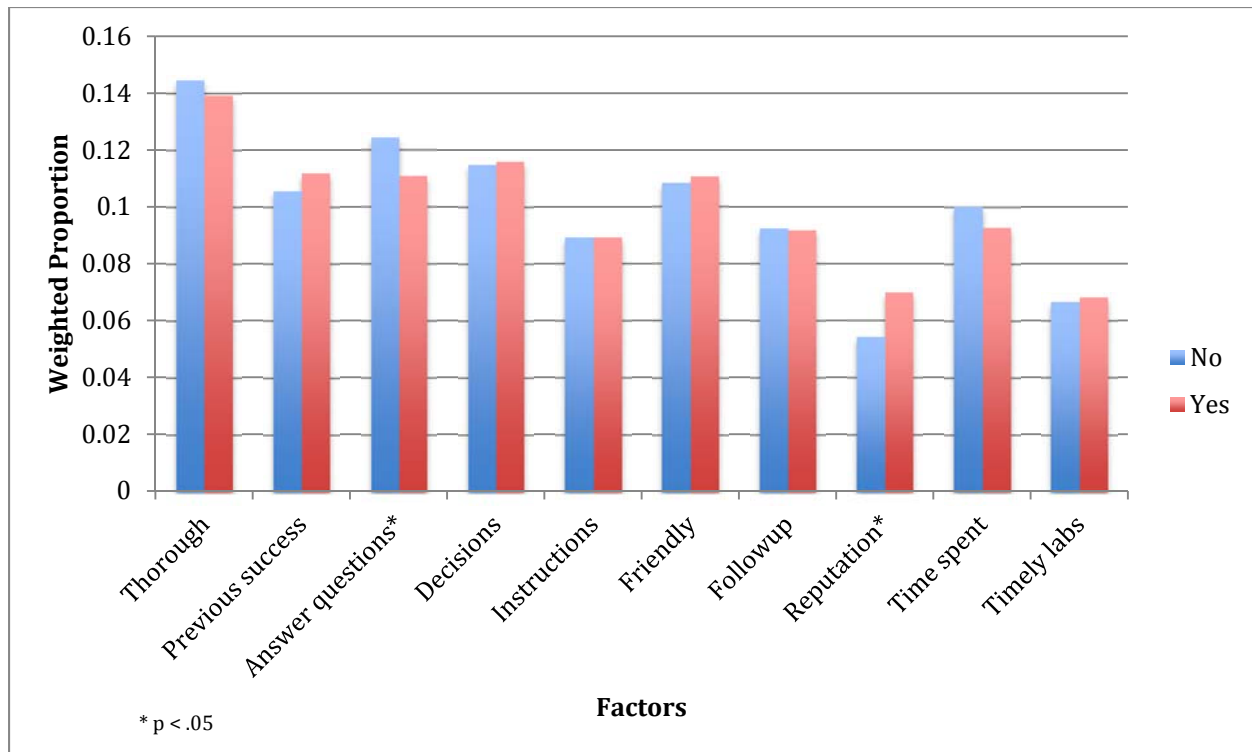


Figure 8. Surgical patient satisfaction factors by participants who report seeking provider reviews online.

