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Evaluating the Impact of Wait Time on Orthopaedic Outpatient Satisfaction Using the Press Ganey Survey

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Background: The Press Ganey Outpatient Medical Practice Survey is a commonly utilized questionnaire that attempts to measure satisfaction with outpatient health care. A wide variety of factors have been associated with lower satisfaction scores among orthopaedic patients, including age, sex, presence of psychological disorders, and driving distance to the point of care. The impact of clinic workflows is less clear. In this study, we hypothesized that an increased clinic wait time was an independent predictor of lower patient satisfaction as measured by the Press Ganey survey.

Methods: We retrospectively reviewed 4,216 new outpatient orthopaedic surgery visits between January 1, 2014, and December 31, 2016, at a single academic institution. For patients with multiple visits, only the first new patient visit was analyzed. Satisfaction was defined as achieving a score above the 33rd percentile of the cohort. Univariate analysis followed by multivariable binary logistic regression was used to detect factors associated with patient satisfaction.

Results: Of the 4,216 unique patients, the mean age (and standard deviation) was 52.8 ± 15.8 years, and 58.9% of the patients were female. The mean total wait time was 17.8 ± 19.4 minutes. Univariate analysis revealed greater odds of achieving satisfaction on the Press Ganey survey for a wait time of <15 minutes compared with a wait time of ≥15 minutes; the odds ratio (OR) was 3.78 (95% confidence interval [CI], 3.30 to 4.33; $p < 0.01$). The multivariable model revealed an association between satisfaction and wait time while controlling for other potential contributing factors: the odds of achieving satisfaction after waiting for 15 to 29 minutes were 0.36 (95% CI, 0.31 to 0.43; $p < 0.01$) compared with waiting for <15 minutes, with significantly decreasing odds ($p < 0.01$ for all) observed with further increments of increased wait time.

Conclusions: A wait time exceeding 15 minutes in an outpatient orthopaedic clinic was an independent predictor of scoring at or below the 33rd percentile on the Press Ganey survey. Further increases in wait time significantly increased the odds of dissatisfaction. Measures to reduce clinic wait time may improve the patient experience and satisfaction with the orthopaedic encounter.

In recent years, an evolving focus of the service-oriented health-care market has been the measurement of patient satisfaction in the United States[1]. The Press Ganey Outpatient Medical Practice Survey (hereafter referred to as the Press Ganey survey) is one metric that has become prominent in this regard. The results of this survey have been used to assess physician performance, to modify provider compensation, and, in general, to inform impactful systematic changes in how outpatient health care is delivered[2-5]. Despite the prevalence of the Press Ganey survey as a type of metric to assess satisfaction with the process of outpatient health-care delivery, many important questions remain with regard to such tools. An improved comprehension of the factors contributing to patient satisfaction may aid in the interpretation of scores and may provide opportunities to improve the satisfaction of our patients.

Nonmodifiable patient factors including age[6,7], sex[8,9], geographic distance from the clinic[6], and presence of psychological disorders[10] have previously been shown to affect scores among orthopaedic patients. However, modifiable health-care delivery variables that influence patient satisfaction have received less initial attention in the peer-reviewed orthopaedic literature. Several large studies in nonorthopaedic patient populations have shown that wait time also affects patient satisfaction, with a consistent inverse relationship between wait time and patient satisfaction[11-16]. An orthopaedic outpatient study utilizing a nonproprietary survey that was not the Press Ganey survey also showed a decrease in overall patient satisfaction with increases in wait time[17]. In a spine surgery outpatient clinic population, the findings were the opposite: wait

Disclosure: The authors indicated that no external funding was received for any aspect of this work. The **Disclosure of Potential Conflicts of Interest** forms are provided with the online version of the article (http://links.lww.com/JBJSOA/A123).

TABLE I Baseline Patient Characteristics

Factor	Value (N = 4,216)
Demographic characteristics	
Age* *(yr)*	52.8 ± 15.8
Distance to clinic*	
Kilometers	156.3 ± 364.4
Miles	97.1 ± 226.4
Insurance type†	
Commercial	2,775 (65.8%)
Medicaid	82 (1.9%)
Medicare	959 (22.7%)
Other	30 (0.7%)
Self-pay	295 (7.0%)
Unknown	23 (0.6%)
Workers' Compensation	52 (1.2%)
Female sex†	2,483 (58.9%)
Visit characteristics	
Subspecialty†	
Foot and ankle	743 (17.6%)
Hand	819 (19.4%)
Joints	436 (10.3%)
Nonoperative providers	741 (17.6%)
Oncology	29 (0.7%)
Pediatrics	4 (0.1%)
Shoulder and elbow	177 (4.2%)
Spine	316 (7.5%)
Sports	679 (16.1%)
Trauma	272 (6.5%)
Wait time* *(min)*	17.8 ± 19.4
Wait time <15 minutes†	2,318 (55.0%)

*The values are given as the mean and the standard deviation.
†The values are given as the number of patients, with the percentage in parentheses.

time, and not time spent with the provider, was significantly associated with patient satisfaction with the provider[18]. A recent, smaller study by Patterson et al. in orthopaedic patients suggested that time spent with the provider, and not clinic wait time, affects patient satisfaction[19].

Despite some findings otherwise, it appears that patient wait time is negatively associated with outpatient satisfaction. However, this relationship remains to be clarified in the orthopaedic population when assessing satisfaction using the nearly ubiquitous Press Ganey metric. In this study, we hypothesized that increased clinic wait time prior to seeing a provider is an independent predictor of patient dissatisfaction as measured by the Press Ganey survey.

Materials and Methods

As part of an ongoing quality improvement initiative, our institution has contracted with the Press Ganey Corporation to measure patient satisfaction for all outpatient encounters using the Press Ganey survey. All patients who complete an orthopaedic surgery subspecialty clinic encounter are contacted automatically within 24 hours of their appointment with an invitation to complete the Press Ganey survey electronically. Those patients who do not complete the survey within 5 days are then sent another email. The link to the online survey remains active for 30 days following the clinic visit. Data were compiled by the Press Ganey Corporation and then were scored on the basis of proprietary methods. The total score and the responses to each survey question were then reported to our institution.

The Press Ganey survey consists of 27 questions grouped into 6 domains that evaluate an individual patient's perception of several aspects of health-care delivery in the outpatient setting. Questions include those related to access (5 questions), moving through your visit (2 questions), nurse/assistant (2 questions), care provider (10 questions), personnel issues (6 questions), and overall assessment (2 questions)[5,6]. Each question[5] offers a numerical response ranging from 1 (very poor) to 5 (very good) on a Likert scale. As part of the survey, patients were also queried to report wait time as a free-text numerical entry separately for the waiting room and clinic examination room.

Adult patients (≥18 years of age) seen at a single tertiary academic institution for an orthopaedic outpatient visit between January 1, 2014, and December 31, 2016, were

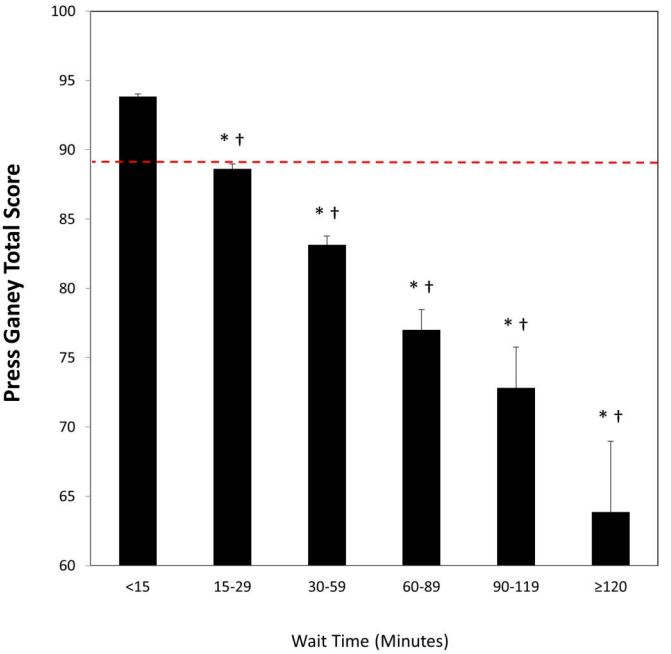

Fig. 1

Press Ganey total score by wait time. The asterisk represents significance at $p < 0.05$ compared with the reference category (wait time of <15 minutes). The dagger represents significance at $p < 0.013$ compared with the prior wait time category per multiple pairwise comparisons following the Kruskal-Wallis test (overall confidence level of $\alpha = 0.05$). The red dashed line represents the 33rd percentile cutoff for the Press Ganey total score. The error bars indicate the standard error of the mean.

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TABLE II Univariate Analysis to Evaluate Factors Associated with Patient Satisfaction

Factor	OR*	P Value
Age†	1.01 (1.010 to 1.018)	<0.01‡
Distance to clinic in kilometers§	1.00001 (0.9999 to 1.00003)	0.27
Distance to clinic in miles#	1.0002 (0.999 to 1.001)	0.27
Insurance		<0.01‡**
Commercial	Reference	
Medicaid	0.99 (0.62 to 1.57)	0.96
Medicare	1.35 (1.15 to 1.59)	<0.01‡
Other	1.26 (0.58 to 2.77)	0.56
Self-pay	1.36 (1.04 to 1.77)	0.02‡
Unknown	1.53 (0.60 to 3.90)	0.37
Workers' Compensation	0.87 (0.49 to 1.52)	0.62
Sex (male vs. female)	0.91 (0.80 to 1.03)	0.16
Subspecialty		0.16**
Foot and ankle	Reference	
Hand	0.88 (0.72 to 1.09)	0.24
Joints	1.14 (0.89 to 1.47)	0.30
Nonoperative providers	1.18 (0.95 to 1.47)	0.13
Oncology	0.98 (0.45 to 2.13)	0.95
Pediatrics	0.51 (0.07 to 3.67)	0.51
Shoulder and elbow	0.84 (0.60 to 1.18)	0.32
Spine	1.00 (0.76 to 1.32)	0.99
Sports	1.16 (0.93 to 1.45)	0.19
Trauma	1.04 (0.77 to 1.39)	0.81
Wait time <15 minutes vs. ≥15 minutes	3.78 (3.30 to 4.33)	<0.01‡
Wait time by category		<0.01‡**
<15 minutes	Reference	
Between 15 and 29 minutes	0.36 (0.31 to 0.42)	<0.01‡
Between 30 and 59 minutes	0.19 (0.16 to 0.24)	<0.01‡
Between 60 and 89 minutes	0.11 (0.08 to 0.16)	<0.01‡
Between 90 and 119 minutes	0.08 (0.04 to 0.17)	<0.01‡
≥120 minutes	0.03 (0.01 to 0.11)	<0.01‡

*The values are given as the OR with the 95% CI in parentheses. †Per 1 additional year of age. ‡Significant. §Per 1 additional kilometer of travel distance between the clinic and the patient's ZIP code. #Per 1 additional mile of travel distance between the clinic and the patient's ZIP code. **These are the p values for the overall univariate binary logistic regression model; the subsequent p values listed are for pairwise comparisons.

considered for inclusion. Inclusion required completion of the Press Ganey survey, which was collected prospectively but was reviewed retrospectively for each visit. Only unique patients undergoing new patient visits were included (n = 4,216): return

TABLE III Multivariable Binary Logistic Regression Analysis to Evaluate Factors Associated with Patient Satisfaction

Factors	OR*	P Value
Age†	1.014 (1.009 to 1.019)	<0.01‡
Distance to clinic in kilometers§	1.0002 (0.9999 to 1.0005)	0.23
Distance to clinic in miles#	1.00002 (0.9999 to 1.0005)	0.23
Insurance		
Commercial	Reference	
Medicaid	1.26 (0.77 to 2.06)	0.36
Medicare	1.06 (0.86 to 1.30)	0.58
Other	1.80 (0.76 to 4.30)	0.18
Self-pay	1.37 (1.02 to 1.82)	0.04‡
Unknown	1.54 (0.55 to 4.30)	0.41
Workers' Compensation	0.86 (0.47 to 1.58)	0.62
Sex (male vs. female)	0.89 (0.77 to 1.02)	0.09
Subspecialty		
Foot and ankle	Reference	
Hand	0.81 (0.65 to 1.01)	0.07
Joints	1.10 (0.83 to 1.44)	0.52
Nonoperative providers	1.03 (0.81 to 1.30)	0.82
Oncology	1.11 (0.48 to 2.54)	0.81
Pediatrics	0.48 (0.06 to 3.57)	0.47
Shoulder and elbow	0.96 (0.66 to 1.39)	0.83
Spine	0.93 (0.69 to 1.26)	0.65
Sports	1.17 (0.92 to 1.50)	0.20
Trauma	1.13 (0.82 to 1.56)	0.46
Wait time by category**		
<15 minutes	Reference	
Between 15 and 29 minutes	0.36 (0.31 to 0.43)	<0.01‡
Between 30 and 59 minutes	0.19 (0.15 to 0.23)	<0.01‡
Between 60 and 89 minutes	0.10 (0.07 to 0.15)	<0.01‡
Between 90 and 119 minutes	0.08 (0.04 to 0.16)	<0.01‡
≥120 minutes	0.022 (0.005 to 0.097)	<0.01‡

*The values are given as the OR, with the 95% CI in parentheses. †Per 1 additional year of age. ‡Significant. §Per 1 additional kilometer of travel distance between the clinic and the patient's ZIP code. #Per 1 additional mile of travel distance between the clinic and the patient's ZIP code. **Wait time of <15 minutes compared with ≥15 minutes was not included in the model to avoid confounding.

TABLE IV Press Ganey Question Scores Dichotomized by Wait Time Category*

Press Ganey Question	Wait Time† <15 Minutes	Wait Time† ≥15 Minutes	P Value†
Access			
Ease of getting clinic on the phone	1,436 (62.0%)	938 (49.4%)	<0.001
Convenience of office hours	1,593 (68.7%)	969 (51.1%)	<0.001
Ease of scheduling appointment	1,666 (71.9%)	1,054 (55.5%)	<0.001
Courtesy of staff in registration area	1,920 (82.8%)	1,306 (68.8%)	<0.001
Ability to get desired appointment	1,530 (66.0%)	949 (50.0%)	
Moving through visit			
Informed of any delays	1,215 (52.4%)	613 (32.3%)	<0.001
Wait time at clinic	NA	NA	
Nurse/assistant			
Friendliness of nurse	1,926 (83.1%)	1,293 (68.1%)	<0.001
Concern nurse showed for problem	1,789 (7.2%)	1,162 (61.2%)	<0.001
Care provider (CP)			
Friendliness of CP	1,997 (86.2%)	1,381 (72.8%)	<0.001
Explanations provided for problem	1,930 (83.3%)	1,307 (68.9%)	<0.001
Concern for your questions	1,918 (82.7%)	1,287 (67.8%)	<0.001
Efforts to include you in treatment	1,873 (80.8%)	1,238 (65.2%)	<0.001
Information about medications (if any)	1,369 (59.1%)	865 (45.6%)	<0.001
Instructions for care (if any)	1,670 (72.0%)	1,039 (54.7%)	<0.001
Understandable explanations	1,981 (85.5%)	1,362 (71.8%)	<0.001
Time spent with you	1,820 (78.5%)	1,131 (59.6%)	<0.001
Your confidence in CP	1,971 (85.0%)	1,334 (70.3%)	<0.001
Likelihood of recommending CP	1,961 (84.6%)	1,328 (70.0%)	<0.001
Personnel issues			
Staff protected your safety	1,629 (70.3%)	1,035 (54.5%)	<0.001
Our sensitivity to your needs	1,801 (77.7%)	1,120 (59.0%)	<0.001
Our concern for your privacy	1,782 (76.9%)	1,169 (61.6%)	<0.001
Cleanliness of our practice	1,918 (82.7%)	1,313 (69.2%)	<0.001
Staff work together	1,939 (83.7%)	1,229 (64.8%)	<0.001
Likelihood of recommending practice	2,005 (86.5%)	1,315 (69.3%)	<0.001
Wait time			
Time in waiting area	NA	NA	
Time waiting for provider in room	NA	NA	

*NA = not available. †The values are given as the number of patients, with the percentage in parentheses, giving a perfect score of 100 points for each of the Press Ganey survey questions. ‡Determined with use of the Fisher exact test.

and postoperative visits were excluded. For patients with new patient visits with >1 provider, only the first visit was included. Patients with missing wait time data, those with a primary language other than English, those with incomplete entries precluding assignment of a score, and those with total wait times exceeding 300 minutes (likely representing an erroneous entry) were excluded. Chart review and electronic data acquisition were performed to collect demographic variables and visit characteristics including the provider, orthopaedic subspecialty, driving distance to the clinic, and insurance status. The total wait time was calculated as the sum of the waiting room wait time and examination room wait time.

Continuous variables were summarized as the mean and the standard deviation. Categorical variables were summarized as the count and the percentage. Because of the high ceiling effect of the survey, satisfaction was defined a priori as a Press Ganey total score above the 33rd percentile as done in prior studies[10,20]. The total score incorporates all 27 questions of the Press Ganey survey, including the provider-specific questions. Patients with scores above the 33rd percentile were categorized as satisfied and those with scores at or below the 33rd percentile were categorized as unsatisfied. The total wait time was binned (<15, 15 to 29, 30 to 59, 60 to 89, 90 to 119, and ≥120 minutes) and the Press Ganey survey total score was compared between bins using the Kruskal-Wallis test with multiple comparisons. Univariate logistic regression models were used to test for association between satisfaction and predictor variables. Multivariable binary logistic regression was then used to evaluate for potential relationships between satisfaction and wait time, while controlling from potential confounders. Odds ratios (ORs) and corresponding 95% confidence intervals (CIs) were calculated for each variable.

To determine which Press Ganey survey questions were particularly affected by greater wait times, the frequency of patients reporting perfect scores (100 points) was examined on the basis of dichotomized wait times (<15 minutes compared with ≥15 minutes). The analysis of achievement of perfect scores, rather than scoring above the 33rd percentile as for the primary analysis, was chosen here as some of the questions demonstrated a score of 100 points at the 33rd or even 10th percentiles. The differences in the frequencies of perfect scores for the Press Ganey survey questions were compared between the 2 wait time groups using the Fisher exact test.

Significance was evaluated at $\alpha = 0.05$ for all analyses (including an overall significance level of $\alpha = 0.05$ for multiple comparisons). All applicable tests were 2-tailed.

Results

A total of 4,216 orthopaedic surgery outpatient visits were included, after the following exclusions: minors (n = 1,729), incomplete wait time data (n = 396), multiple new patient visits (n = 271), missing total score (n = 41), non-English language (n = 18), and wait time of >300 minutes (n = 1). The mean age (and standard deviation) was 52.8 ± 15.8 years, and 58.9% of patients were female. Insurance type and orthopaedic subspecialty data are provided in Table I. The median total wait time was 11.0 minutes, with an interquartile range of 14 minutes. There were 2,318 patients who waited <15 minutes and 704 patients who waited >30 minutes. With regard to the Press Ganey survey total score, the mean was 90.1 ± 12.7 points, with a median of 95.2 points and an interquartile range of 15.6 points. The cutoff for the 33rd percentile was a Press Ganey survey total score of 89.4 points.

Univariate analysis revealed that the Press Ganey survey total score significantly decreased ($p < 0.05$) with increasing wait time (Fig. 1). Binary logistic regression compared various wait times with wait times of <15 minutes and demonstrated achieving satisfaction at ORs of 0.36 (95% CI, 0.31 to 0.42; $p < 0.01$) after waiting 15 to 29 minutes, 0.19 (95% CI, 0.16 to 0.24; $p < 0.01$) after waiting 30 to 59 minutes, 0.11 (95% CI, 0.08 to 0.16; $p < 0.01$) after waiting 60 to 89 minutes, 0.08 (95% CI, 0.04 to 0.17; $p < 0.01$) after waiting 90 to 119 minutes, and 0.03 (95% CI, 0.01 to 0.11; $p < 0.01$) after waiting ≥120 minutes. Univariate analysis also suggested that age ($p < 0.01$) and insurance type ($p < 0.01$) significantly affected satisfaction (Table II). Each 1 additional year of age increased the odds of satisfaction by 1% (OR, 1.01 [95% CI, 1.010 to 1.018]; $p < 0.01$). Compared with commercial insurance, patients with Medicare and self-pay status were more likely to be satisfied; the OR was 1.35 (95% CI, 1.15 to 1.59; $p < 0.01$) for patients with Medicare and 1.36 (95% CI, 1.04 to 1.77; $p = 0.02$) for patients with self-pay status.

The multivariable model revealed a significant association between wait time and satisfaction ($p < 0.01$) while controlling for other potentially contributory predictors including age, distance to clinic, insurance status, sex, and orthopaedic subspecialty (Table III). Compared with waiting <15 minutes, the odds of achieving satisfaction after waiting 15 to 29 minutes were 0.36 (95% CI, 0.31 to 0.43; $p < 0.01$). The odds of achieving satisfaction with additional wait time were significantly lower, ranging from 0.19 down to 0.02 ($p < 0.01$ for each comparison). All of the Press Ganey survey questions were associated with a significantly lower frequency of perfect scores reported by patients when the wait time was ≥15 minutes compared with <15 minutes (Table IV).

Discussion

The U.S. Centers for Medicare & Medicaid Services has recognized the Press Ganey survey as an important evaluation of patient satisfaction[2-4,21,22]. Although modifiable and nonmodifiable factors in several practice environments and health-care specialties have been identified, this study focused on the effect of wait time on the Press Ganey survey encompassing all outpatient orthopaedic subspecialty populations.

The main finding of this study was that wait time adversely affected the Press Ganey survey patient satisfaction and that this effect was subjectively large.

A study of 182 orthopaedic patients responding to the U.S. Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey concluded that time with the surgeon, but not actual wait time ($p = 0.63$), affected patient satisfaction[19]. Part of the rationale that they provided for their findings was the discovery that their patients provided inaccurate estimates for wait time. Their perceived wait time was often found to be less than the actual wait time. Most of their patients did not perceive a wait time of >15 minutes until they had waited at least 60 minutes[19]. Their study did not go on to evaluate the effect of perceived wait time on patient satisfaction. The differences between that study and our own are several, including sample size, use of the CAHPS survey instead of the Press Ganey survey, and utilization of the actual wait times instead of the perceived wait times in their statistical analyses of patient satisfaction. Perhaps a perceived wait time of >15 minutes is a surrogate for patients waiting >60 minutes of actual time. Alternatively, the discrepancy between perceived and actual wait times may represent an outlier sample from the distribution of orthopaedic outpatients given the small sample size. Ultimately, patients report the perceived wait time in the Press Ganey survey, and most studies examining the effect of wait time on patient satisfaction have utilized the perceived wait time[11-14].

A study in the primary care setting used an online patient satisfaction survey (DrScore.com) to evaluate both the wait time and the time spent with the provider[11]. The authors found that the wait time was negatively associated with satisfaction (β coefficient, −0.39; standard error, 0.02), which is consistent with the findings of the current study. However, the positive effect of the time spent with the provider was far greater (β coefficient, 3.78; standard error, 0.09), and the authors concluded from these effect sizes that the time spent with the provider should not be compromised to decrease wait times. The time spent with the provider was not available for this current study, but we would agree intuitively that the reduction in patient wait time should not come at the expense of the time spent with the patient.

A study by Thompson et al. of 1,631 emergency department patients who completed a telephone questionnaire 2 to 4 weeks after their visit showed that the perceived wait time, and not the actual wait time, was associated with satisfaction. They concluded that managing the wait time perception and expectations may be a

more effective strategy for improving satisfaction in the emergency department[23]. McCarthy et al. attempted to alter the expectations of patients in an emergency department setting by randomizing patients to standard care compared with a group with an explanation of the emergency department workflow process along with an estimate of waiting room and treatment times[24]. That study demonstrated that the intervention aimed to alter patient expectations did affect the relationship between actual wait times and patient satisfaction. They found that patient satisfaction was adversely associated with the actual wait times. Similar to the study by Patterson et al.[19], patients' perceived wait times were not examined in that study.

The adverse relationship between the wait time and patient satisfaction found in our study population is consistent with prior studies performed in surgical and medical patient populations[11-18,23,24]. Among 11,352 patients responding to the Health Consumer Assessment of Healthcare Providers and Systems survey across 44 ambulatory clinics at a large academic medical center, Bleustein et al. observed that patient satisfaction scores and every aspect of patient experience were negatively associated with increased wait time[12]. Similar to our findings, Kreitz et al. observed a significant correlation between satisfaction and wait time in 15-minute intervals using a non-Press Ganey survey using a Likert scale satisfaction assessment administered to 3,125 orthopaedic outpatients[17].

Our finding that younger patients were more likely to be dissatisfied is congruent with prior literature using the Press Ganey survey[6,7] and other metrics of outpatient satisfaction[25]. Our findings that insurance status is associated with satisfaction are also consistent with prior studies[15].

There were some limitations to the interpretation of these study results. Generalizing our results beyond the orthopaedic surgery outpatient population should be done with caution. Our study was also subject to limitations inherent to the use of the Press Ganey survey, namely a potential non-response bias for the survey[20] and that wait time data represent patient-reported responses entered by the patient that were not corroborated by actual timing of the visits. Thus, these data were estimates of wait time and represented the perception of patients. Although this might have been considered a limitation of our study, it is also a shortcoming of the Press Ganey survey score, which utilizes these data rather than actual wait time measurements. With regard to the potential for non-response bias, a prior study found that patients who responded to the Press Ganey survey systematically differed from those who did not in terms of age, sex, insurance type, and orthopaedic subspecialty[20]. Perhaps patients who agreed to respond to the Press Ganey survey had an especially positive or negative experience and thus were not representative of the entire clinic population; however, this is also a criticism of the Press Ganey survey metric in general as these data are being utilized without regard for the very low response rates and non-response biases that are likely present[5]. Lastly, recent evidence has suggested that those who respond to the Press Ganey survey may have higher levels of psychological characteristics, including anxiety and pain interference, than non-responders[10]. It is unclear if these biopsychosocial factors would affect our findings, as our current study did not evaluate these.

In conclusion, increased wait time is negatively associated with patient satisfaction in outpatient orthopaedic surgery clinic visits, as measured by the Press Ganey survey. The odds of achieving a Press Ganey score above the 33rd percentile are reduced to ≤0.36 for patients waiting ≥15 minutes. Given the large observed effect size, the efforts to minimize the perceived wait time present an opportunity to improve patient satisfaction with their orthopaedic care. ■

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