Patients Willing to Wait: Arrival Time, Wait Time and Patient Satisfaction in an Ambulatory Urology Clinic

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Abstract

Introduction: We evaluated the relationship of patient satisfaction to arrival and wait times. We also sought to determine factors that patients considered important to the visit experience.

Methods: A total of 361 participants completed a survey in clinic to record wait times in various areas of the clinic and then rate satisfaction levels with these times and with the care received. A total of 211 participants ranked 6 factors related to the patient experience in the order considered important.

Results: Early, on time and late arriving patients spent 26.0, 15.5 and 17.1 minutes in the waiting room and had a total visit duration of 82.5, 67.9 and 72.0 minutes, respectively. Significant differences existed between these times when the early group was compared with the on time and late groups. Early patients were significantly more satisfied with wait time in the waiting room and total clinic visit time compared to late patients. Receiving treatment or relief from a medical problem was the most important factor valued by this population.

Conclusions: Surprisingly, patients with longer waits were more satisfied with the time in the waiting room and overall visit duration, indicating that other variables influence patient satisfaction with perceived wait times. This study provides evidence that wait time might not be as important to patients or impact patient satisfaction as previously thought. On average wait time was ranked fifth in regard to what was important. Longer wait times did not seem to impact patient satisfaction when asked about overall satisfaction with the care received.

Key Words: urology; practice management, medical; time factors; patient satisfaction; surveys and questionnaires

The PPACA (Patient Protection and Affordable Care Act) influences many aspects of medicine with its focus on improving access, enhancing quality and reducing the cost of the American health care system. The law values a patient centered approach to health care that encompasses the entire patient experience.[1] Patient satisfaction is an important metric used for quality assurance, tracking progress and predicting future trends. The PPACA even

authorizes a percent of Medicare reimbursement to be directly linked to patient satisfaction.[1] Patient satisfaction has also been linked to better treatment compliance and outcomes[2,3] as well as to lower rates of malpractice suits.[4,5]

Many aspects of the patient experience can affect patient satisfaction with the care received. Studies have shown that time spent with the provider[6] and the degree to which the provider explains the disease process are significantly predictive of patient satisfaction and outcomes.[2] Additional studies have shown that continuity of care,[7] adequate access to primary care[8] and a strong patient-provider relationship[2,9] are strong indicators of perceived patient satisfaction.

Wait time has also been found to have a role in predicting patient overall satisfaction with care.[10−13] While wait time is an easily observed and quantifiable variable, it is multifactorial in nature, which increases the complexity of its analysis. For example, a study of wait times at an academic ambulatory center concluded that exam room wait times had a more pronounced negative effect on satisfaction scores than time spent in the waiting room.[14] The investigators speculated that this may have been due to a lack of engaging materials in the exam room, disappointed expectations of quicker service and less comfortable surroundings.

Patient arrival time relative to the scheduled appointment may also impact patient satisfaction. In an outpatient otolaryngology clinic it was reported that patients arriving late were seen more quickly, waited less and reported higher overall satisfaction than patients who arrived early or on time.[15] This was true even though there were no significant differences in how long the provider spent with each individual patient.

The purpose of this project was to further examine the relationship between arrival times and wait times, and whether these times might impact patient satisfaction. Additionally, demographic variables and opinions regarding various factors in the patient experience were collected and reviewed for possible influences on arrival time and patient satisfaction. As health care reform continues to take shape, providing high quality medical care will increasingly demand a consideration of the patient overall health care experience.

Methods

This was a cross-sectional, observational study performed at an academic adult and pediatric urology outpatient clinic, where approximately 7,000 patients are seen per year. The clinic is staffed by 5 attending urologists,

1 mid-level and 4 urology residents. In 2014 the clinic had a patient payer mix of 27% private insurance, 30% Medicare, 19% Medicaid, 8% self-pay/other, 7.4% government, 4.7% Texas Department of Criminal Justice, 3% indigent program, and less than 1% undocumented, child health insurance program and worker compensation patients. Surveys were distributed and collected on 39 days spanning 3 months.

The university institutional review board concluded that this project fell under the quality assurance category and granted it exemption from the review process. Data were collected at the point of care through self-administered anonymous surveys. At check-in any patients who agreed to participate were given oral instructions on how to complete the survey and record wait times and satisfaction levels. The forms also collected patient age, gender and travel distance in miles to the clinic. Patients did not receive any form of incentive for participation.

The survey divided the visit into 6 phases, including 1—check-in time, 2—time that the patient is called back by nurse, 3—time that the patient enters the exam room, 4—time that the physician enters the exam room, 5—time that the exam is finished and 6—checkout time. Staff members recorded the scheduled time of the appointment and the check-in time. For the next 4 phases the survey asked the patient to record the time for each transition and to indicate a satisfaction level with the wait time incurred between each phase. Upon checking out staff members recorded this final time for the patients. The survey then asked the patient to indicate an overall satisfaction level with the wait time for the entire visit as well as an overall satisfaction level with the care received. The scale for the satisfaction level was very dissatisfied, dissatisfied, satisfied, mostly satisfied and very satisfied.

Lastly, the survey asked patients to rank certain aspects in the order believed to be most important to the experience, including availability of appointments, duration of wait times, time with physician, receipt of a diagnosis, receipt of treatment or relief, and socializing with staff and other patients. The incremental scale used was 1—most important to 6—least important.

Statistical analysis was performed with VassarStats (http://www.vassarstats.net). The Kruskal-Wallis and Mann-Whitney nonparametric tests were used to test for significant differences between the distributions of each group of patient satisfaction scores based on arrival time. The Kruskal-Wallis and Mann-Whitney nonparametric tests were also used to determine differences between the different wait times, examination times and total visit durations depending on patient arrival time. Means and medians were calculated for the data sets to detect possible outliers.

Results

Tables 1 and 2 summarize the 361 surveys with varying degrees of completeness that were collected. The return rate of the surveys was 80.22%. A majority of patients were very satisfied with the wait time at each phase of the appointment. Mean total time spent in the clinic was 73.86 minutes (median 69, range 6 to 270). The mean time that patients waited in the lobby was 19.53 minutes (median 15, range 0 to 74). Of the respondents 205 (64.5%) and 196 (61.1%) reported being very satisfied with total time in the clinic and time in the waiting room, respectively.

Table 3 shows the arrival time of patients based on 3 categories, including early—arrived more than 15 minutes before the appointment, on time—arrived 0 to 15 minutes before the appointment and late—arrived 1 minute or more after the appointment. Mean arrival time for all patients was 11.78 minutes (median 10.0) before the scheduled appointment, ranging from 165 minutes early to 49 minutes late. Of the patients 119 (35%) checked in early and 144 (42%) checked in on time. Only 77 patients (23%) arrived late. Late arrivals had an average $\pm$ SD arrival time of 11.04 $\pm$ 7.0 minutes (range 1 to 49) after the scheduled appointment.

Patients who arrived early spent significantly more time in the waiting room than patients who were on time (mean 26.02 minutes, median 21.0 vs mean 15.51, median 14.0, p <0.0001). Additionally, early arriving patients spent significantly more time in the waiting room than late patients (mean 17.06 minutes, median 14.0, p = 0.0003, fig. 1). Early arriving patients were significantly more satisfied with wait time in the waiting room than those who were on time (mean satisfaction score 4.43, median 5.0 vs 4.21, median 5.0, p = 0.0268). Moreover, early arriving patients were significantly more satisfied with wait time in the waiting room than patients who checked in late (mean satisfaction score 3.88, median 4.0, p = 0.0021, fig. 2).

There were no significant differences among the arrival groups when comparing the amount of face time received with providers (fig. 1). There were no significant differences in patient satisfaction levels among the early, on time and late groups in the amount of time spent with the provider (mean satisfaction score 4.53, 4.40 and 4.32, respectively).

Table 2.
Survey waiting area summary

Clinic Area	No. Pts	Mean $\pm$ SD Wait Time (mins)	Median Mins (range)
Lobby waiting room	308	19.53 $\pm$ 14.28	15.00 (0−74.00)
Nurse triage	307	6.20 $\pm$ 4.90	5 (0−46.00)
Exam room	283	25.32 $\pm$ 16.96	22 (0−101.00)
Exam time with physician	278	17.47 $\pm$ 13.82	14.50 (0−90.00)
Totals	301	73.86 $\pm$ 30.44	69.00 (6−270.00)

Early patients spent significantly more time in the clinic than patients who arrived on time (mean 82.50 minutes, median 78.0 vs mean 67.91, median 66.0, p = 0.0002). Furthermore, patients who arrived early spent significantly more time in the clinic than patients who checked in late (mean 72.02 minutes, median 70.0, p = 0.0485, fig. 1). Lastly, early arriving patients were significantly more satisfied with total time in the clinic than those who arrived late (mean satisfaction score 4.45, median 5.0 vs 4.13, median 5.0, p = 0.0188, fig. 2).

A total of 211 patients completed the rank list portion of the survey indicating what was most important. Receiving treatment or relief of a medical problem was the most important factor to the patients surveyed (mean 2.30, median 2.0). Patients next ranked diagnosis (mean 2.65, median 2.0) and face time with the physician (mean 2.87, median 3.0). Patients least valued appointment availability (mean 3.69, median 4.0), wait time (mean 4.10, median 5.0) and socializing with the staff (mean 5.38, median 6.0, fig. 3).

Stratifying the data by age, gender and commuting distance produced no statistically significant results. Each age group had similar waiting and total times as well as satisfaction ratings. Additionally, stratifying the data by provider type (nurse practitioner vs physician) also produced no statistically significant results.

Discussion

These data reveal that despite shorter wait times, patients who arrive late to appointments have significantly less satisfaction with wait times than patients who are early and

Table 1.
Survey satisfaction question summary

"How satisfied are you with..."	No. Pts	No. Very Dissatisfied (%)	No. Dissatisfied (%)	No. Satisfied (%)	No. Mostly Satisfied (%)	No. Very Satisfied (%)
Wait time in waiting room?	321	9 (2.8)	13 (4.0)	73 (22.7)	30 (9.3)	196 (61.1)
Time at nursing triage station?	320	7 (2.1)	1 (0.3)	57 (17.8)	38 (11.9)	217 (67.8)
Time waiting for physician in exam room?	287	9 (3.1)	4 (1.4)	63 (21.9)	42 (14.6)	169 (58.9)
Length of time with physician?	297	7 (2.4)	1 (0.3)	50 (16.8)	37 (12.5)	202 (68.0)
Length of total visit?	318	8 (2.5)	5 (1.6)	61 (19.2)	39 (12.3)	205 (64.5)
Overall satisfaction?	315	7 (2.2)	1 (0.3)	44 (13.9)	46 (14.6)	217 (68.9)

Table 3.
Arrival times

	No. Pts (%)	Arrival Time (mins)*	
		Mean ± SD	Median (range)
Greater than 15 early	119 (35)	−31.66 ± 18.68	−27.0 (−165−−16)
0−15 on time	144 (42.4)	−7.56 ± 5.15	−7.0 (−15−0)
1 or Greater late	77 (22.6)	11.04 ± 10.99	7.0 (1−49)
Totals	340 (100)	−11.78 ± 20.61	−10.0 (−165−49)

*Negative and positive values indicate minutes that patients arrived before and after scheduled appointment, respectively.

Figure 2. Satisfaction levels with wait times in waiting room and total duration of entire clinic visit for patients who arrived early, on time and late. KW_p, Kruskal-Wallis test p value. MW_p, Mann-Whitney test p value. Asterisk indicates significantly different.

on time. We speculate that there are several explanations for why this was observed. Late patients could have been made aware of the late arrival by staff, which might have elicited emotional discomfort that resulted in a negative satisfaction score. Perhaps patients who were running late were having a bad day already or maybe this group of patients had a lower threshold for what they considered a satisfying wait time.

Additionally, patients who arrived early were more satisfied with the time spent in the waiting room and the examination room, and with total visit duration compared to late arrivals. A similar observation was reported by Bestvater et al.[16] They ventured that this observation may have been due to their largely elderly patient population, who may have perceived clinic appointments as "social outings."[16] However, this is unlikely to have been the case in our project because we did not find a significant difference between age groups and satisfaction, and the majority of patients in our group ranked socializing last as far as what was important to them. Recently, Medway et al observed a trend that was opposite of ours, reporting that patients who arrived late had significantly higher wait time satisfaction scores.[15] These conflicting observations provide further

evidence that wait time and satisfaction are complex metrics that require further attention.

While there were significant differences in satisfaction levels with the wait in the waiting room and with overall wait times, there were no significant differences between any of the arrival time groups when comparing satisfaction levels with the overall care received at the visit. McMullen and Netland observed a different trend, noting that patients with longer wait times had significantly lower satisfaction scores.[12] One possible explanation for this might be that patients in this survey, including late patients, spent about the same amount of face time with the provider. In a similar study in 226 subjects different observations were made and late arriving patients spent significantly less time with the physician.[17] This increased personal time with the providers in our study potentially could have compensated for the dissatisfaction with the initial wait times that late patients reported.

Most interesting is that our data indicate that patients ranked receipt of treatment or relief from a medical problem as the most important factor in the experience. Moreover, patients ranked wait time almost last with only socializing with staff and other patients being lower. This finding might reflect a simple aspect that can get lost in the health care industry today, which is that patients seek medical care to receive help for some sort of problem. It appears that patients might even be willing to endure longer waits if at the end they receive the help and answers that they are seeking.

Limitations of this study were our relatively small sample size and the fact that the study was performed at a single university urology outpatient clinic. Another limitation is it did not capture the amount of time that patients waited in the check-in line. The check-in desk often makes one of the
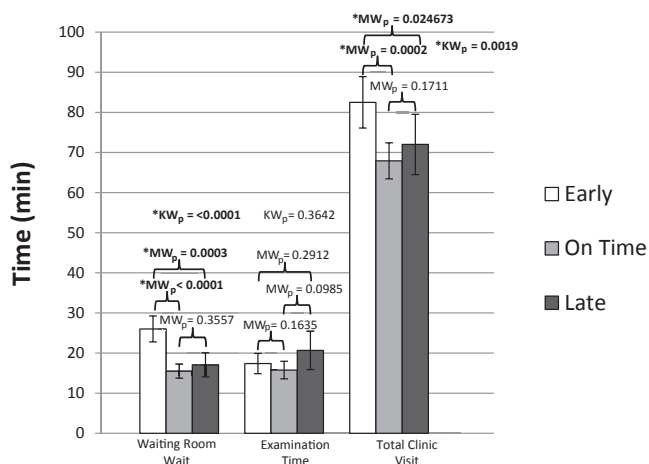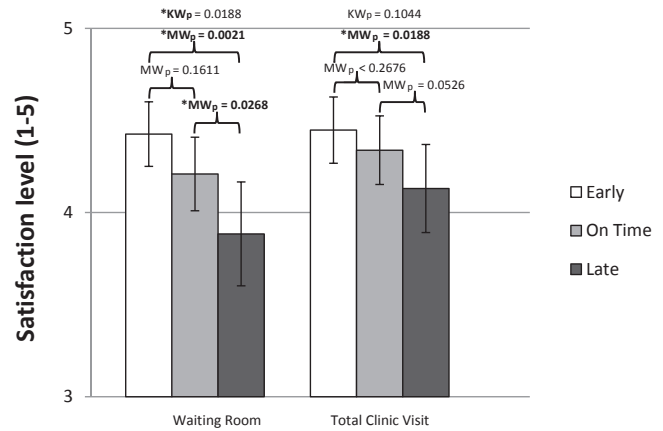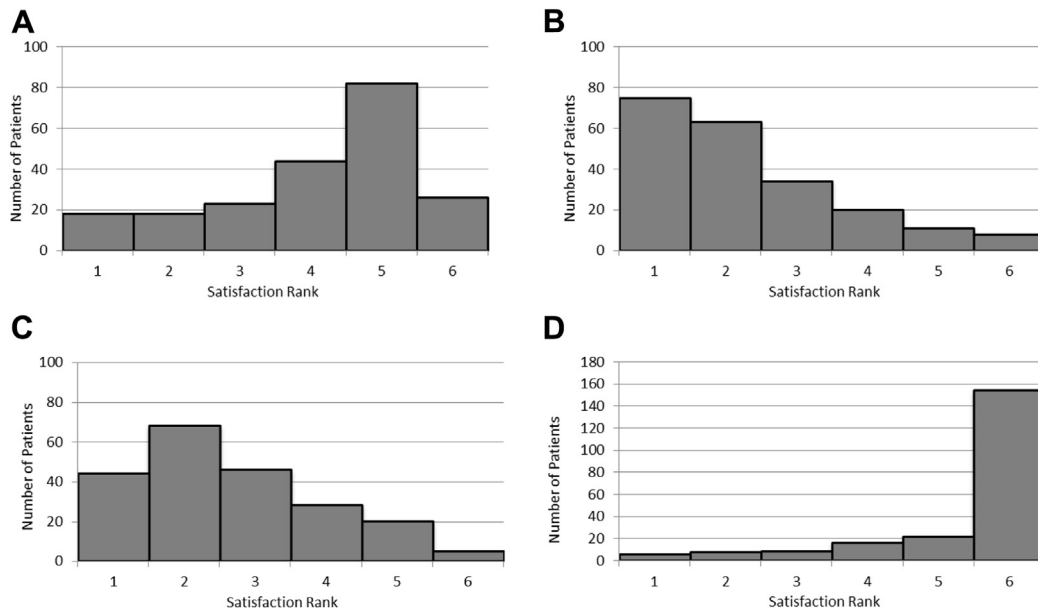

Figure 1. Wait time in waiting room, examination time and total time spent in clinic for patients who arrived early, on time and late. KW_p, Kruskal-Wallis test p value. MW_p, Mann-Whitney test p value. Asterisk indicates significantly different.

Figure 3. Histograms show frequency of 211 patients who ranked importance of wait time (*A*), treatment (*B*), receiving diagnosis (*C*) and socializing with staff and other patients (*D*), ranked as 1—most important to 6—least important. Data on importance of appointment time availability and time spent with provider are not shown.

earliest impressions during the patient experience. If a negative experience occurs during this process such as a longer wait, it might bias the patient satisfaction level with the entire visit. Another important consideration is that about 1 or 2 patients per day who arrived late had the appointment cancelled at the discretion of the office manager and the provider depending on availability. Therefore, our patient sample may have contained fewer late patients than expected.

Future studies should strive to further determine whether factors such as race/ethnicity, socioeconomic factors, type of office visit and type of provider can affect patient satisfaction and wait time. Communication with the patient and keeping the patient informed are factors that should be easy to institute and that appear to significantly increase patient satisfaction.[11,14] Soremekun et al suggested that it is more important to change the perception of wait time, which is more predictive of satisfaction than objective wait time.[18] Upcoming studies could institute the methods outlined by Soremekun et al to determine efficacy and practicality, including providing estimated wait times, Wi-Fi and staff customer service training, determining patient expectations and improving communication.[18]

This study provides further evidence that patient satisfaction and wait time are impacted by multiple variables. Furthermore, it provides evidence that patients are willing to wait if they ultimately receive treatment or relief from a medical problem. With the constant change in the health care industry and the increasing role that patient satisfaction

has on reimbursement it is important that operation management and patient satisfaction with clinics and hospitals are studied to deliver the most efficient and effective patient care.

Conclusions

Surprisingly, this study reveals that despite shorter wait times patients who arrive late to appointments have significantly less satisfaction with wait times than patients who are early and on time. On the other hand, patients with longer waits were more satisfied with the time in the waiting room and overall visit duration. This indicates that other variables influence patient satisfaction with perceived wait times. The results of this study provide evidence that wait time might not be as important to patients or impact patient satisfaction as previously thought. On average wait time was ranked fifth in regard to what was important. Longer wait times did not seem to impact patient satisfaction when asked about overall satisfaction with the care that they received.

Acknowledgments

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Editorial Commentary

This is a timely, important and interesting study. As health care in the United States is increasingly evaluated based on patient reported outcomes and patient reported experience, it behooves us all to learn more about this subject. This study is an initial step. The authors compared patient satisfaction with wait times. It is fascinating to learn that those who arrived early for appointments waited the longest but were the most satisfied. Likely it is not the specific fact that they arrived early that accounts for their satisfaction but rather something that correlates with arriving early.

As in most intriguing investigations, this study suggests as many questions as it answers. What are the determinants of patient satisfaction? What provider factors matter or are the specific providers themselves a major determinant? Do patient factors predominate? What role does patient age (generation?), gender, race or socioeconomic background have? How does the basic personality of the patient affect satisfaction with care?

The authors provide an innovative work on patient satisfaction. They are opening the door to a new area of important research. Hopefully, many other urologists will take an interest in this subject

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