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Satisfaction and Wait Time of Patients Visiting a Family Practice Clinic

SUMMARY

Data relating to wait times and time spent with nurses and physicians were recorded for 656 patients visiting a large family-practice unit. Patients were asked to provide estimates of their wait times and ratings of the acceptability of these wait intervals. Actual wait times were usually longer than those estimated by the patient, and total wait times were considered reasonable. The results of the study show high levels of patient satisfaction and indicate that few patients are dissatisfied until total wait time exceeds forty-five minutes. Different age groups appear to have different expectations, however, and younger patients are more likely to be dissatisfied with their wait times. (*Can Fam Physician* 1988; 34:67-70.)

RÉSUMÉ

Dans un important centre de pratique familiale, 656 patients ont participé à une collecte de données concernant les temps d'attente et le temps passé avec les infirmières et les médecins. Les questions touchaient l'estimation par les patients de leurs temps d'attente et l'acceptabilité de ces intervalles. Les temps réels d'attente furent habituellement plus longs que l'estimation du patient, et l'addition de tous les temps d'attente fut jugée raisonnable. Les résultats de cette étude montrent des taux élevés de satisfaction de la part des patients et indiquent que peu sont insatisfaits lorsque la totalité de l'attente ne dépasse pas 45 minutes. Les différents groupes d'âge semblent avoir des attentes différentes, les jeunes étant susceptibles d'être insatisfaits des temps d'attente.

Key words: patient satisfaction, wait time, booking system

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FAMILY PRACTITIONERS are often encouraged to examine their patient-booking systems, both to increase the number of patients seen and

to decrease patient wait times.¹⁻⁴ Achieving the appropriate balance between these two objectives can be difficult. Many researchers, however, have proposed ways of achieving this balance without knowing the patients' perspective. What amount of wait time is acceptable? It has been suggested that wait times exceeding 15 minutes are unacceptable to patients,² but this standard appears to have been generated arbitrarily.

Some studies have focused on the multidimensionality of patient satisfaction with clinic visits.^{5,6} Waiting time is one of the main components of patient satisfaction, along with the doctor-patient relationship, clinic access, and continuity of care.⁶ Another study has shown that satisfaction influences the patient's perception of the benefit gained as a result of the care given in the clinic.⁷

In this study, actual patient wait times are examined along with the patients' ratings of the acceptability of

these waits. The results obtained provide a realistic and quantitative standard against which the performance of the booking system can be evaluated.

Data Collection

The study was conducted in the Family Practice Unit in Sunnybrook Medical Centre. Sunnybrook is a large teaching hospital associated with the University of Toronto and is funded as a Health Service Organization (HSO). An initial data-collection phase ran for a two-week period beginning on April 23, 1985. In this initial phase, data were gathered for 352 consecutive patients of two physicians. A second data-collection phase took place in the month of January, 1986. In this second phase, data were gathered over a one-week period (January 6-10) for four physicians. In total, data were gathered for 656 patient visits.

For these patients, staff members were required to record arrival and departure times, as well as times in and

out of nursing stations and examination rooms. The appointment time, number of minutes scheduled for the patient, the type of service provided (according to the OHIP billing definitions), and the patient's sex and year of birth were also recorded.

Before leaving the office, patients were asked to complete a brief questionnaire in which they first estimated the amount of time spent waiting during their visit. They were then asked to indicate whether their waiting time and total length of visit were "about right", "too long" or "much too long". Patients rated their time with nurses and physicians as "much too short", "too short", "about right", "too long", or "much too long".

Results

The most common (OHIP) service category, the Intermediate Assessment, was provided to 65.4% (429) of the patients. The Minor Assessment ranked second, and was used with 11.9% (78) of the patients. General Assessments were performed in 6.7% (44) of the cases, and psychotherapy in

1.7% (11) of the cases. The Annual Health Exam after the sixteenth birthday was given to approximately 1% of the patients. All other services combined account for less than 2% of the cases. For the remaining 74 patients no physician-service code was given. Fifty-six of these patients received only nursing procedures, and the remaining 18 encounters represent missing data.

For each service category, the average length of the patient visit, total wait durations, and time with nurse and physician(s) are given in Table 1. The total wait duration was calculated by subtracting the time spent by the patient in the doctor's office and/or time spent in the nursing station from the time spent in the clinic. In general, patients who come for the most involved services (general assessments, psychotherapy) spend longer times with care providers than do those who come for less involved services (minor and intermediate assessments). The amount of time spent waiting, however, is relatively consistent, regardless of the type of service provided. Thus, the lowest ratios of examination

time to total wait time (.48 and .43) are found in the cases of minor and intermediate assessments, and the highest ratios (1.16 and .97) are found for patients presenting for general assessments and psychotherapy.

The first item in the satisfaction questionnaire asked patients to estimate their total wait time during their visit to the family-practice clinic. Estimates were provided by 82.4% (580) of patients. Of these patients, nearly 54% estimated total waits of 15 minutes or less. Roughly 30% estimated waits of between 16 and 30 minutes. Eleven per cent estimated total waits of 31 to 45 minutes, and 2% estimated waits of between 46 and 60 minutes. Four per cent considered their total wait time to have exceeded one hour.

Figure 1 presents the relationship between the total patient wait time and the percentage of patients reporting dissatisfaction. Total wait time is given in 15-minute intervals, and for each interval, the percentage of patients dissatisfied is derived from the sum of those reporting wait times either "too long" or "much too long". This relationship is graphed in

Table 1
Services Provided by Average Consultation, Examination, and Wait Times

Service	Average Total Time (minutes)	Average Total Wait (minutes)	Average Time with Nurse (minutes)	Average Time with Physician (minutes)	Number of cases ^a (n)	Incomplete cases (n)
Minor assessment (std. dev.)	50 (30)	33 (22)	1 (3)	16 (13)	67	11
Intermediate assessment (std. dev.)	55 (24)	37 (21)	2 (3)	16 (12)	400	29
General assessment (std. dev.)	77 (27)	31 (17)	10 (5)	36 (19)	43	1
Psychotherapy (std. dev.)	71 (22)	35 (16)	2 (3)	34 (14)	11	0
Annual exam (after 16 th birthday) (std. dev.)	51 (30)	26 (12)	7 (4)	18 (8)	5	2
Other service					13	N/A
No service code given					74	N/A

a. This number may be lower than the total number of patients receiving a service because of missing information (e.g., 78 patients received minor assessments, but data for all of the components of wait time are available for only 67. The service and wait intervals were therefore calculated from the 67 full-data records.)

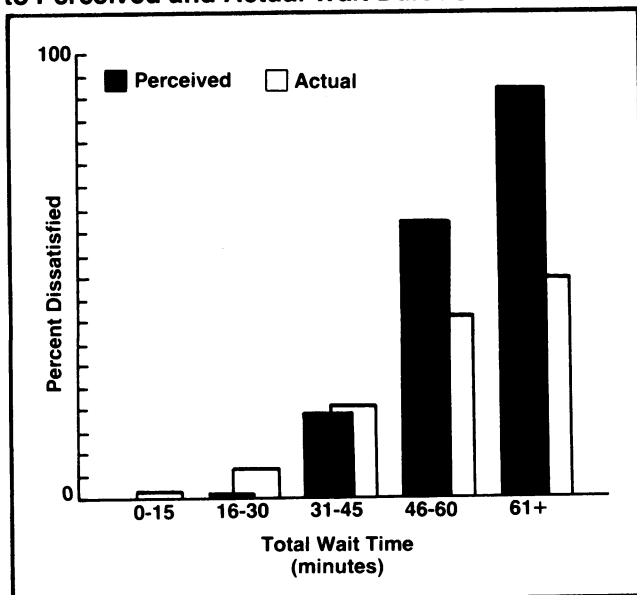
terms of both perceived and actual total wait time. Virtually none of the patients who estimated waits of 30 minutes or less were dissatisfied. Less than 20% were dissatisfied with perceived total waits of between 31 and 45 minutes. As perceived wait time extended to between 46 and 60 minutes, however, 65% of patients were dissatisfied, and as perceived waits exceeded one hour, 95% were dissatisfied.

The graph of actual total wait time and the percentage of dissatisfied patients is markedly different. When the actual wait time was relatively short (less than 30 minutes), 6.7% of patients were dissatisfied. At waits of between 31 and 45 minutes, 20.3% of patients were dissatisfied. Forty-one per cent were dissatisfied with actual waits of 46 to 60 minutes. Only 50% of patients who waited over one hour were dissatisfied.

The contrast between the graphs of actual and perceived dissatisfaction with total wait time is interesting to explore. Nearly all patients who perceived wait times of over one hour expressed dissatisfaction, but only half of the patients who actually waited over one hour were dissatisfied. This discrepancy is accounted for by the fact that most patients underestimated their total wait time (Figure 2).

The relationship between perceived and actual total wait times is given in Figure 2. In this graph, the average total wait time is given for each of the perceived intervals of waiting. The

Figure 1
Satisfaction Related
to Perceived and Actual Wait Durations



straight line, or the line of equivalency, represents the form that the relationship would take if perceived wait times were equal to actual wait times. Data points which fall above this theoretical line of equivalency are underestimates, whereas those which fall below are overestimates. Note that none of the data points fall below the line of equivalency.

The general tendency for patients to underestimate total wait time suggests that most patients considered the duration of their wait to be quite acceptable. This conclusion is reinforced by their responses to the second item on the questionnaire. Of the patients who provided estimates, 82% considered their wait time to be "about right". Only 18% thought it was either "too long" (15%) or "much too long" (3%). The total length of visit was considered "about right" by 87% of patients who responded; "too long" by 10%; and "much too long" by 3%.

The amount of time spent with the physician was considered "about right" by 96% of patients; "much too short" by less than 1% (0.5%); "too short" by 2.7%; and "too long" and "much too long" by less than 1%. The figures for patients' perceptions of the time spent with the nurses are very nearly identical.

Patient gender is one variable that might be expected to show some association with satisfaction. The results are given in Table 2. For all total wait intervals except one, the proportion of

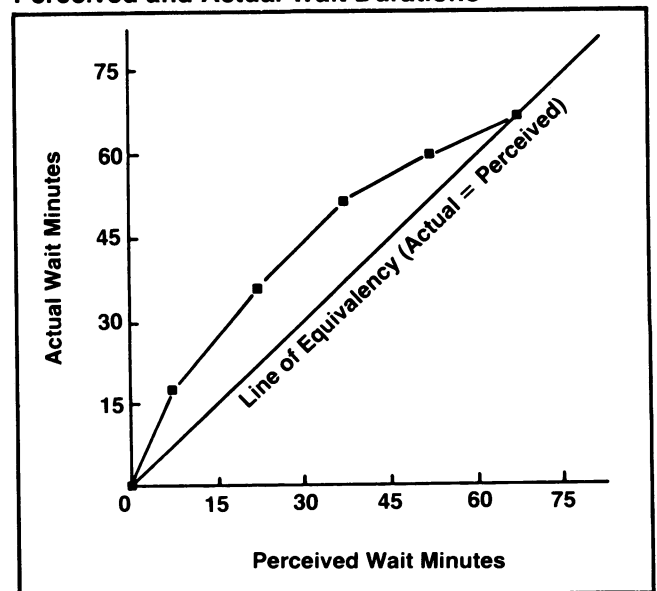
satisfied males equals the proportion of satisfied females. The findings suggest that gender is not associated with satisfaction, but there is an unexplained difference between males and females when the total wait interval is between 46 and 60 minutes.

Satisfied and dissatisfied patients were also compared at each of the total wait-time intervals in order to test the importance of patients' age and arrival time (i.e., the extent of early or late arrival). These variables were isolated in response to one staff physician's impression that many older patients treat their visits to the clinic as "social outings". These persons may be quite satisfied with long wait times, and so they may arrive well in advance of their appointments. Statistical analysis lends support to these hypotheses. Table 3 makes it plain that in the last two categories of total wait time, the average arrival time is much earlier for the satisfied patients. The mean age of satisfied patients in all wait-time categories is also higher than the mean age of the dissatisfied patients (Table 4) and reaches significance at the longer wait times.

Discussion

From the perspective of patient satisfaction, the booking system used in this family-practice unit fares well. Ninety-six per cent of patients were satisfied with the length of time they spent with their care providers. Moreover, 87% considered the overall length of their visit appropriate, and

Figure 2
Relationship between
Perceived and Actual Wait Durations



the total wait time was considered satisfactory by 82% of the patients. In addition, most of the patients actually underestimated their overall wait time.

Eighteen per cent of patients were dissatisfied with the total amount of time they spent waiting during their visit. Some valuable insights are gained by comparing satisfied and dissatisfied patients at each of the total wait intervals. There are more females dissatisfied at wait times between 46 and 60 minutes, but this difference is found only in this wait interval and is not strong enough to support any contention that females are generally more dissatisfied. Although gender does not account for differences in satisfaction, patient age is a very important con-

sideration. Older patients are much more likely to be satisfied in spite of longer wait times. In addition, older patients are more likely to arrive earlier for their appointments.

A lesson for practice management is that identical wait intervals have different effects on different groups of people. Attempts to take this finding into account when scheduling patients for appointments might be worth considering. There might be some benefit gained if some of the younger patients, such as mothers with crying infants, could be accelerated through the system by booking them earlier or later in an office session.

These findings provide a useful beginning for those interested in evaluating patient-booking systems, and for

physicians and managers who try to increase the number of patients seen without compromising patient satisfaction. The findings challenge the assumption that wait times exceeding 15 minutes are unacceptable. This assumption appears to hold only for younger and perhaps "busier" family-practice patients.

There are a number of circumstances, however, which may limit the application of these findings to other settings. The primary concern in this regard is that the clinic studied is not typical in terms of its patients age, sex, and socioeconomic mix. Compared with average figures, the Sunnybrook patients are older and have higher economic status.⁸ The clinic also serves a disproportionately high number of females. The Sunnybrook Family Practice Clinic is also a teaching setting, in which patients are often examined by learners as well as by staff physicians. The time patients spend with physicians might be (or might be perceived to be) given to more thorough investigation than in non-teaching settings. This circumstance may increase tolerance of waiting time. Sunnybrook is a Health Service Organization, and it is not clear how this type of sponsorship might influence the results of the study. By repeating the study in other clinics, the weight of these factors might be established. ●

Table 2
Satisfaction and Gender (Stratified by Total Wait Interval^a)

Actual Wait (min)	Males		Females		Chi-Square (χ^2)	(df=1) (prob.)
	Dissatisfied (n)	(%)	Dissatisfied (n)	(%)		
0-15	0	0.0	1	1.9	0.00	1.000
16-30	3	4.5	5	4.5	0.00	1.000
31-45	7	16.7	14	17.1	0.00	1.000
46-60	2	8.0	21	40.4	6.98	0.008
61+	7	35.0	14	38.9	0.00	1.000

a. Before stratifying by wait time: overall $\chi^2 = 2.74$
df = 1, (p > .05).

Table 3
Early or Late Arrival and Satisfaction (Stratified by Total Wait Time)

Wait Time (min.)	T-Tests				Prob
	Mean Arrival Time ^a for those dissatisfied (min.)	(n)	Mean Arrival Time ^a for those satisfied (min.)	(n)	
0-15	5.0	(1)	1.7	(70)	N.A.
16-30	4.9	(8)	4.2	(168)	0.92
31-45	5.9	(21)	5.7	(103)	0.97
46-60	3.1	(23)	12.1	(55)	0.04
61+	5.7	(21)	20.6	(35)	0.13

a. Number of minutes before the scheduled appointment time.

Table 4
Satisfaction and Age (Stratified by Total Wait Time)

Wait Time (min.)	T-Tests				Prob
	Mean Age of Those Dissatisfied (yrs.)	(n)	Mean Age of Those Satisfied (yrs.)	(n)	
0-15	32.0	(1)	52.0	(70)	N.A.
16-30	40.5	(8)	51.0	(166)	0.17
31-45	51.7	(20)	54.0	(102)	0.65
46-60	53.6	(21)	64.1	(53)	0.06
61+	47.4	(19)	66.8	(33)	0.01

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