

Appointment Delay among Patients Attending Endocrinology Outpatient Clinic of Al-Qatif Central Hospital, Kingdom of Saudi Arabia

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Abstract: Patient's appointment is a fixed mutual agreement between patient and any health care giver to obtain the required medical services that suit his/ her health needs. Appointment delays in outpatient clinics are the most important cause for patients' dissatisfaction due to the complications that might develop during the wait time and consequently affecting their health status. The present study aimed to measure the appointment time from referral from primary health care centers to get the first appointment for patients cared for the most common diseases in the endocrinology outpatient clinic of Al-Qatif Central Hospital, and study reasons and effect of delayed appointment on patients. It is a cross-sectional descriptive study. The target population was medical records and database of 200 patients, all the working staff, and patients attended the study clinic during the year 2008. Results revealed that 60.5% of the patients had delayed appointment, while 39.5% had no delayed appointment. The acceptable appointment time delay for diabetes mellitus, hypothyroidism and hyperthyroidism were ($\bar{X} = 55 \pm 8.66$, 95 ± 5.00 and 19 ± 4.35 days respectively) in comparison to the current appointment time delay ($\bar{X} = 118.3 \pm 81.0$, 113.6 ± 70.4 and 87.9 ± 49.7 days respectively). Most of the patients with delayed appointment were dissatisfied (74.4%) compared to only 67% of those with no delayed appointment. Also, 22.3% of the patients with delayed appointment perceived that their health status was affected to a great extent in comparison to only 10.1% of those with no delayed appointment. Among the reasons mentioned by the working staff for delayed appointment were increased number of "no show" patients, population served by the study hospital, and follow up visits (83.3% each). Accordingly, the present study recommended availability of a center for diagnosis and treatment of diabetes mellitus in addition to the outpatient clinic of the study hospital; developing a system for reminding patients with the date of appointment e.g. SMS, telephone call,...etc; and establishing a prioritizing system for appointments based on emergency of the conditions.

Key words: Appointment delay- endocrinology outpatient clinics.

INTRODUCTION

Patient's appointment is a fixed mutual agreement between patient and any health care giver to obtain the required medical services that suit his/ her health needs.⁽¹⁾ Access to healthcare services in certain timeframe is definitely an essential

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performance indicator of health systems and as much as the health care providers struggle to deliver a great quality of care to the patients, the appointment delays are still a huge challenge for them.⁽²⁾ The type of appointment used in hospitals is extremely essential due to its capability to reduce patients' waiting times, to improve the outpatient clinic's (OPC) utilization, to reduce doctor's idle time, and to focus on the personnel's peak workload as well.⁽³⁾ There are three types of patient's appointment; scheduling entitled standard, wave and modified wave. Standard scheduling means that patients are scheduled continuously throughout the day with appointment times at specific intervals e.g. every 15 minutes. This method can sometimes result in wasted physician time when the visit lengths are shorter than expected or when patients are "no show" i.e. missed appointments. Also, it does not eliminate patient waiting time because some visits run longer than the time

allotted putting all subsequent visits behind schedule. Wave scheduling assigns all patients in a large block at the same appointment time e.g. 9:00 am for all morning appointments, then patients are seen on a first- come, first- served basis. The disadvantage of this method is the patient dissatisfaction when he/ she has to wait several hours to see the physician. Modified wave scheduling protects both patient and physician time by scheduling the first two patients in each hour at the same time and allowing a catch- up period at the end of each hour in which no patients are scheduled. Although some patients have to wait but the wait periods are not longer than with standard scheduling, and the physician time is better utilized.⁽⁴⁾

The term 'waiting time' is, however, potentially ambiguous as it can be applied on two discrete types of events. The National Audit Office (1991) refers it to 'waiting time before first routine

appointment'. This would be a period of time measured in weeks or months. Cartwright and Windsor (1993) refine the types of delay into delays by the patient between the onset of symptoms and consulting a general practitioner, delays between consulting a general practitioner and being referred to a consultant, and finally the delay between being referred to a consultant and the date of the initial outpatient appointment. On the other hand, the National Audit Office also refers it to 'waiting time in clinics'. It's the time measured between patient's registration and being examined by the physician. This time usually measured in minutes. ⁽⁵⁾

The amount of wait times to get an appointment and see the doctor varies from one hospital to another. A study was carried out in Canada monitoring the wait times to access a gastroenterology specialist and the results revealed that the total waiting times for those with probable cancer ranged from 26 to 65 days and for

probable inflammatory bowel disease ranged from 101 to 209 days.⁽⁶⁾ Another study was conducted in a tertiary pediatric nephrology clinic concluded that the median of waiting time from receipt of initial request for referral to the first appointment was 111days and the range was zero to 364 days.⁽⁷⁾

Appointment delay at OPCs and long wait times to receive treatment is the most important cause for patients' dissatisfaction due to the complications that might develop during the wait time and consequently affecting their health status. Moreover, long waiting time is reflected on the patient's psychological condition. Also, some patients might go to another health care facility to receive the intended care. ⁽⁸⁾In Kingdom of Saudi Arabia (KSA), the time between referral of patients from primary health care centers (PHC) to get the 1st appointment at the OPCs was not studied before, so this study was conducted to estimate this time.

The aim of this study is to:

- Measure the appointment time between referral from PHC centers to get the 1st appointment for patients cared for the most common diseases in the Endocrinology OPC of Al Qatif Central Hospital (current waiting time) and compare it with the acceptable waiting time for these diseases as mentioned by the working physicians.
- Study the reasons of delayed appointment at the study clinic.
- Study the effect of delayed appointment on patient outcome e.g. patient satisfaction and health status.

SUBJECTS AND METHODS

1-Study setting: Endocrinology OPC of Al-Qatif Central Hospital, Eastern Province, (KSA). This clinic was selected due to high frequency of delayed appointment as mentioned by the working staff. Patients referred to this clinic from certain PHC centers, emergency department of the

same hospital, and other hospitals.

2- Study design: Cross-sectional descriptive study.

3- Study population:

1. Database of the study hospital to determine the most common diseases treated at the endocrinology OPC during the year 2008.
2. Medical records (MRs) and database of the patients cared for the most common diseases at the study clinic during the year 2008. These records were used to measure the appointment time between referral from the PHC centers till getting the 1st appointment at the Endocrinology OPC of the study hospital. The current appointment time was calculated through subtracting the date of referral from the PHC center from the date of the 1st appointment at the OPC under study. Total number of MRs was 2150.

Inclusion criteria

- A. Uncomplicated cases based on the opinion of the working physicians.
- B. New visits to measure the appointment time between referral from the PHC center to get the 1st appointment at the study clinic.
- C. Patients referred only from PHC centers.

Exclusion criteria

- A. Patients referred from the emergency department of the same hospital or other hospitals.
- B. MRs without referral form and those with incomplete data or invalid patient's telephone numbers.
3. Patients of the selected medical records.
4. All the physicians working in the study setting were included to explore their opinion regarding the acceptable appointment time for the most common diseases cared for in the study setting, and reasons of delayed

appointment and, to recommend solutions to improve delayed appointment. They were three physicians.

5. All the nurses working at the study clinic were included to explore their opinion regarding reasons of delayed appointment, and to recommend solutions to improve it. They were three nurses.

4- Study sample

- A. The total sample size amounted to 200 MRs after applying the inclusion criteria. The telephone numbers were extracted from these records and these patients were interviewed through the phone (phone survey) to study the effect of delayed appointment on patient outcome {patient satisfaction and health status}.
- B. All the physicians working in the clinic. They were three physicians.
- C. All the nurses working in the clinic. They were three nurses.

5- Data collection technique and tools

1. Data collection sheet was designed to collect data from the MRs and database about diagnosis of the patient's condition, date of referral from the PHC center, and date of the 1st appointment at the study clinic.
2. Interview questionnaire for the working physicians to explore their opinion regarding the acceptable appointment time of the most common diseases treated at the clinic under study; reasons of delayed appointment, and recommendations to improve it.
3. Interview questionnaire for the working nurses to explore their opinion regarding reasons of delayed appointment, and recommendations to improve it.
4. Interview questionnaire with the study patient sample including their level of satisfaction with the appointment time, perceived effect of the appointment time on the health status, and

alternative sources of care other than the OPC of the study hospital. Determination of the level of satisfaction was measured through the Likert scale of four.

6- Data analysis

- Data entry was done using SPSS version 12. The appointment time was divided into current and acceptable appointment time.
- Mean, median, range, and standard deviation were calculated for the appointment time.
- Frequency of the reasons of delayed appointment and recommendations to improve it.
- Univariate analysis was conducted where the sample was divided into two groups: Patients with delayed appointment and those without delayed appointment. This was based on the opinion of the physicians regarding the acceptable appointment time. Patient's satisfaction and health

status in relation to appointment delay were examined using chi square for health status (categorical data).

7-Ethical consideration: Formal approval from the Ministry of Health was taken before conducting the research. Confidentiality of the data collected from questionnaires and MRs was considered.

RESULTS

Table 1 shows the acceptable and current appointment time of the most common diseases treated at the endocrinology OPC. Results demonstrated that the acceptable appointment time for diabetes mellitus was ($\bar{x} = 55 \pm 8.66$ days) in comparison to the current appointment time ($\bar{x} = 118.3 \pm 81.0$ days). The acceptable appointment time of hypothyroidism and hyperthyroidism were ($\bar{x} = 95 \pm 5.00$ and 19 ± 4.35 days respectively) in comparison to the current appointment time ($\bar{x} = 113.6 \pm 70.4$, and 87.9 ± 49.7 respectively).

Table 2 shows that most of the patients

with delayed appointment were dissatisfied (74.4%) compared to only 67% of the patients with no delayed appointment. The difference was not significant ($X^2_3 = 1.503$, $P = 0.682$).

Table 3 reveals that 20.7% of the patients with delayed appointment perceived that their health status was affected moderately in comparison to 10.1% of those with no delayed appointment. The difference was not significant ($X^2_3 = 5.412$, $P = 0.144$).

Table 4 shows that the majority of the patients who had delayed appointment didn't attend any source of care during the waiting time (77.6%). Among those who visited other sources, 17.4% attended poly clinics and 5% attended private hospitals.

Table 5 clarifies that all physicians and nurses mentioned increased number of patients suffering from endocrinology diseases as a reason of delayed appointment (100.0%). This was followed by increased number of "no show" patients;

increased number of population served by the study hospital; and increased number of follow up visits (83.3% each). Also, shortage of physicians represented 50.0%.

Table 6 demonstrates that the most common recommendation- as mentioned by physicians and nurses- for improving the appointment delay was increasing the

number of working staff in relation to the population served (66.7%). This was followed by availability of a center for diagnosis and treatment of diabetes mellitus and developing a system for reminding patients with the date of appointment (33.3% each).

Table 1: Acceptable and current appointment time delay of the most common diseases cared for in the Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA (2008)

Disease	Acceptable appointment time (Mean \pm SD)	Current appointment time		
		Mean \pm SD	Median	Range
1- Diabetes Mellitus	55 \pm 8.66	118.3 \pm 81.0	84	(11 – 386)
2- Hypothyroidism	95 \pm 5.00	113.6 \pm 70.4	92	(22 – 313)
3- Hyperthyroidism	19 \pm 4.35	87.9 \pm 49.7	72	(32 – 222)
4- Infertility	35 \pm 5.00	110 \pm 95.3	60	(42 – 333)

Table 2: Distribution of study patient sample according to appointment delay and level of satisfaction at the Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA (2008)

Level of satisfaction	Delayed appointment (n=121)		No delayed appointment (n=79)	
	No.	%	No.	%
Highly satisfied	3	2.5	3	3.8
Moderately satisfied	28	23.1	23	29.1
Total	31	25.6	26	32.9
Moderately dissatisfied	44	36.4	28	35.4
Highly Dissatisfied	46	38.0	25	31.6
Total	90	74.4	53	67.0

$$X^2_3 = 1.503$$

$$P = 0.682$$

Table 3: Distribution of study patient sample according to appointment delay and perceived level of health status at the Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA (2008)

Level of health status	Delayed appointment (n=121)		No delayed appointment (n=79)	
	No.	%	No.	%
Health status is severely affected	2	1.6	0	0.0
Health status is moderately affected	25	20.7	8	10.1
Health status is minimally affected	33	27.3	24	30.4
Health status is not affected	61	50.4	47	59.5

$\chi^2_3 = 5.412$

$P = 0.144$

Table 4: Alternative sources of care of patients with delayed appointment during the appointment delay time at the Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA (2008)

Alternative sources of care	Delayed appointment (n= 121)	
	No.	%
Poly clinics	21	17.4
Private hospitals	6	5.0
No alternative sources of care	94	77.6

Table 5: Physicians and nurses' opinion regarding reasons of appointment delay at Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA.

Reasons	No. (n=6)	%
Increased number of patients suffering from endocrinology diseases	6	100.0
Increased number of "no show" patients	5	83.3
Increased number of population served by the hospital	5	83.3
Increased number of follow up visits	5	83.3
Shortage of physicians	3	50.0
long time to receive investigations results	2	33.3

Table 6: Recommendations of physicians and nurses for improving appointment delay at the Endocrinology OPC of Al- Qatif Central Hospital, Eastern Province, KSA.

Recommendations	No. (n=6)	%
Increasing the number of working staff in relation to the population served	4	66.7
Availability of a center for diagnosis and treatment of diabetes mellitus	2	33.3
Developing a system for reminding patients with the date of appointment e.g. SMS, telephone call	2	33.3
Establishing a discipline to control results of lab and x-ray tests	1	16.7
Establishing prioritizing system for appointments	1	16.7

DISCUSSION

A commonly used definition of appointment time for medical care is the time between when an appointment is requested and when the appointment is scheduled.⁽⁹⁾ Long waiting time to receive care is not uncommon in many health services organizations.⁽¹⁰⁾ Results of the present study demonstrated that there was a large gap between the acceptable and current appointment times for the most common diseases treated at the study setting: hyperthyroidism ($\bar{x} = 19 \pm 4.35$ days and $\bar{x} = 87.9 \pm 49.7$ days respectively); infertility ($\bar{x} = 35 \pm 5.00$ days and $\bar{x} = 110 \pm 95.3$ days respectively); diabetes mellitus ($\bar{x} = 55 \pm 8.66$ days and $\bar{x} = 118.3 \pm 81$ days respectively); and hypothyroidism ($\bar{x} = 95 \pm 5.00$ days and $= 113.6 \pm 70.4$ days), (Table1). Also, the number of patients with delayed appointment was 12.1 (60.5%) in comparison to those without delayed appointment 79 (39.5%) (Table 2). This is different from the results of a study that was conducted at an antenatal care center in London, where women without delayed appointment represented a great percentage (81.9%), while those with delayed appointment was only (18.1%). This discrepancy could be attributed to the

type of care delivered to patients at the two studies and urgency of the situation where pregnant women necessarily need timely access for follow up.⁽¹¹⁾

Great pressure has recently been put on clinicians by hospital managers and politicians to reduce appointment time.⁽¹²⁾ Ensuring timely access to health care is a major policy concern as delayed access has been found to decrease patient satisfaction.⁽¹³⁾ This goes hand in hand with results of the present study where 74.4% of patients with delayed appointment were dissatisfied in comparison to 67% of patients without delayed appointment (Table 2).

Delayed access to health care is assumed to negatively affect health outcomes due to delays in diagnosis and treatment. For these reasons, the Institute of Medicine IOM's Committee on the Quality of Health Care in America (2004) chose reducing delays for health care as one of six aims to improve the quality of

America's health care system.⁽¹³⁾ This is consistent with the results of the present study where 20.7% of patients with delayed appointment perceived that their health status was affected moderately in comparison to 10.1% of those with no delayed appointment. (Table 3).

Long appointment time is reflected on the patients' psychological condition as well as increasing utilization of alternative sources of care.⁽⁸⁾ This is parallel with the results of the present study where 17.4% of patients with delayed appointment utilized polyclinics and 5% attended private hospitals during the appointment delay time (Table 4). This is consistent with the results of another study conducted at a gastroenterology department in Northern Ireland, where 3% of patients were hospitalized in another hospital while waiting for appointment.⁽¹⁴⁾

Reasons of delayed appointment varied from one study to another. However, a lot of studies revealed that patients with "no

show" represented the most frequent reason of delayed appointment.⁽¹⁴⁻¹⁶⁾ This is consistent with the results of the present study where "no show" patients was mentioned by 83.3% of working staff, (Table 5). Moreover, other reasons mentioned were increased number of patients suffering from endocrinology diseases (100.0%), increased number of population served by the hospital (83.3%), and increased number of follow up visits (83.3%). Accordingly, the most frequently mentioned recommendations by the working staff in the present study were increasing number of working staff in relation to the population served (66.7%), availability of a center for diagnoses and treatment of diabetes mellitus, and developing a system for reminding patients with the date of appointment e.g. SMS, telephone call (33.3% each); and establishing a prioritizing system for appointments (16.7%) (Table 6). This goes hand in hand with the results of a study

carried out in Chicago in USA, where redistributing patient appointments to less busy times of the day, educating patients regarding the importance of punctuality, and creating a realistic patient appointment schedule were recommended to decrease the waiting time for appointment.⁽¹⁶⁾

CONCLUSION AND RECOMMENDATIONS:

The percentage of patients with delayed appointment was 60.5% in comparison to those without delayed appointment 39.5%. Also, there was a large gap between the acceptable and current appointment time for the most common diseases treated at the study setting: hyperthyroidism, infertility, diabetes mellitus, and hypothyroidism. Patients with delayed appointment were more dissatisfied with the services offered and perceived that their health status was greatly affected than those without delayed appointment. The most frequent reasons of delayed appointment mentioned by the working staff were increased number of

patients suffering from endocrinology diseases as well as increased number of "no show" patients, population served by the study hospital, and follow up visits. Accordingly the following was recommended:

1. Availability of a center for diagnosis and treatment of diabetes mellitus in addition to the OPC of the study hospital.
 2. Developing a system for reminding patients with the date of appointment e.g. SMS, telephone call,....etc
 3. Educating the patients regarding the importance of punctuality.
 4. Establishing a prioritizing system for appointments based on emergency of the conditions.
3. Santibáñez P, Chow VS, French J, Puterman ML, Tyldesley S. Reducing patient wait times and improving resource utilization at British Columbia Cancer Agency's ambulatory care unit through simulation. *Health Care Manag Sci.* 2009 Dec; 12(4):392-407.
 4. Chung MK. Tuning up your patient schedule. *Fam Pract Manag.* January 2002; 9 (1): 41-5.
 5. Anonymous. Improving outpatient clinic waiting times- methodological and substantive issues. [Cited: 2009/6/18]. Available from: www.mike-hart.com/cv/papers/improve.doc.
 6. Leddin D, Armstrong D, Barkun AN, Chen Y, Daniels S, Hollingworth R, et al. Access to specialist gastroenterology care in Canada: comparison of wait times and consensus targets. *Can J Gastroenterol.* 2008; 22(2):161-7.
 7. Filler G, Sutandar M, Poulin D. Waiting times in a tertiary pediatric nephrology clinic. *Paediatric child health.* 2007;12 (1):15- 8.
 8. Sibbald B, Pickard S, McLeod H, Reeves D, Mead N, Gemmell I, Coast J, et al. Moving specialist care into the community: an initial evaluation. *J Health Serv Res Policy.* 2008 Oct;13(4):233-9.
 9. Prentice JC, Pizer SD. Delayed access to health care and mortality. *HSR.* 2007; 42(2): 644– 62.
 10. Cho F, Chickusa C, Nagoya N, Aichi A. Simulation analysis for reducing queues in mixed-patients' outpatient department. *Int j simul Model.* 2006; 2: 56-68.
 11. Robson NJ, Boonlak B. Reducing delay in booking for antenatal care. *Journal of the Royal College of*

References:

1. Anonymous. The American heritage dictionary of the English language. 4th ed. New York: Houghton Mifflin Company; 2009. [Cited: 2009/6/18]. Available from: <http://dictionary.reference.com/browse/appointments>.
2. Ministry of Health Singapore. Waiting times in specialist outpatient clinics of

- General Practitioners. June 1986; 36(287):274-5.
12. German K, Nuwahid F, Matthews P, Stephenson T. Dangers of long waiting times for outpatient appointments at a urology clinic. *BMJ*. 1993; 306:429-30.
 13. Murdock A , Rodgers C, Lindsay BA, Tham TC . Why do patients not keep their appointments?: prospective study in a gastroenterology outpatient clinic. *JRSM*. 2002; 95 (6): 284-6.
 14. Giachetti R. Simulation study of interventions to reduce appointment lead-time and patient no-show rate. *Health Systems Dynamics*. Miami, Florida: Winter Simulation Conference ; 2008.
 15. Sur H, Hayran O, Yildirim C, Mumcu G. Patient satisfaction in dental outpatient clinics in Turkey. *CMJ*. 2004; 45 (5): 651-4.
 16. Kapustiak J, Ling H. Evaluation of patient waiting times at an academic ophthalmology clinic. *MBM*. 2000- Mar-Apr; 15 (5): 228-33.