

ORIGINAL ARTICLE

A STUDY ON THE CLIENTS' CHARTER IN THE TELUK WANJAH DENTAL CLINIC, KEDAH

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ABSTRACT

The objective of this study was to evaluate compliance to the clients' charter in a dental clinic and factors that may affect the updating of the charter. Our clients' charter states that registration time is within 10 minutes and waiting-room time before being seen by the dentist is within 30 minutes. Convenience sampling was carried out over two weeks. Only patients above 12 years treated by dental officers were included. Data recorded included registration and waiting-room time, treatment time, punctuality of patients and workload of officers. There were a total of 532 patients (407 walk-in/outpatients, 125 appointments). Results show that the mean waiting-room time for all patients was not compliant to the clients' charter (42.7 ± 23.8 min for walk-in; 44.9 ± 32.7 min for appointments). Only 33% were seen within 30 min whilst about 23% waited for more than 60 minutes. The mean registration time (17.9 ± 12.8 min) was non-compliant everyday except on Thursdays where there were very few patients. Waiting time for elderly patients was not statistically significant from the younger patients. About 36% of appointment patients were seen within 30 minutes; although half of them were late. Extractions, dentures and examination and diagnosis (E&D) took the shortest time with about 88%, 91% and 98% completed within 30 minutes respectively. There was variable individual speed and number of patients managed by different operators, although the majority was first-year dental officers. Factors that may contribute to waiting time included number of patients per day, operator and punctuality of patients.

Key words: clients' charter, dental clinic, registration time, waiting-room time

INTRODUCTION

A 'Clients' Charter' is an important official document granting rights to clients or defining the form of an institution in provision of services. Under the Ministry of Health Malaysia, 'Clients Charter' is one of the 17 Quality Initiatives (QI) implemented in the Quality Assurance Programme (QAP)^{1,2}. All main dental health facilities have a 'Clients' charter' to profess their service responsibilities and commitments to their clients and it includes a section which in turn states certain responsibilities of the clients in order to obtain a minimum standard of satisfaction.

Before 2003, the waiting-room time at the Teluk Wanjah Dental clinic in Alor Star was arbitrarily fixed at 30 minutes for both registration and receiving treatment in the 'Clients' charter'. The 'waiting-room' time' in our setting was defined as the 'time interval between arrival of the patient at the clinic and before being seen by the dentist for treatment/ consultation'. A survey on 'quality service' was carried out in early 2003 with 160 self-administered questionnaires to patients in conjunction with the national 'Counter Service' competition. The findings revealed that 85% of patients complained of very long waiting time before being seen by the dental officer. They suggested that the number of dental officers on duty should be increased to reduce the waiting time.

Following this survey, a study was carried out in May 2003 to record the registration and waiting-room time. It was found that the average time for registration in outpatients (walk-in) was 10.8 minutes and treatment commencement was 15.8 minutes. However, this was a small sample of 62 patients recorded over three days. The registration time was 8.2 minutes and waiting room time was much longer (40.5 minutes) for patients given appointments. This was another small sample of 33 patients in two days. Further investigation revealed that all patients were given morning appointments either at 8.30 or 9.30 only. The reasons given by the service providers then was that the majority of patients were not keeping to their staggered appointments; some came very late and some very early, which resulted in a long waiting time for both groups and problems in patient management. Subsequently, the clients' charter was changed to 10 minutes for registration and 30 minutes for treatment commencement.

As these surveys comprised small samples over a very short duration, the findings may not be valid and an accurate interpretation cannot be made. Hence, the present study was undertaken in a larger sample over a longer period of time in both outpatients and appointments to give more accurate and detailed information. We hope that this information will help oral health care providers and managers to identify any problem areas, rectify any

weakness in the system and install a more accurate and realistic 'clients' charter'. This will also help to provide information on any modification necessary for MS ISO 9000 certification. Therefore, the objectives of this study were:

1. To determine waiting time for registration and treatment commencement
2. To determine treatment time for various procedures
3. To assess workload of staff in the clinic
4. To evaluate possible factors contributing to long waiting-room time

METHODOLOGY

Sample

This was a convenience sampling of patients where data was recorded in a special format everyday over a period of two weeks. Patients aged 12 years and above were treated by dental officers while those below 12 years were treated by a dental nurse during outpatient days. We wanted to compare management and treatment carried out by dental officers; hence only patients above 12 years were included in the study. Treatment carried out by nurses and officers is not similar. All dental officers who carried out treatment in the main surgery were included.

Outpatient (walk-in) and Appointment Days

The Teluk Wanjah dental clinic in Alor Star has a schedule of three and a half days for treatment of outpatients (walk-in patients) and two and a half days for appointment patients (scheduled appointment time) per week. Saturdays, Sundays, Tuesdays (full days) and Thursdays (morning only) were outpatient days while Mondays (full day), Wednesday (full day) and Thursday afternoons were appointment days. There were three dental officers (DO) on duty during outpatient days. Generally, two or three dental surgery assistants were manning the registration counter and two attendants were responsible for finding treatment cards. Patients are given a 'queue' number at registration and called according to the queue number. Priority is given to senior citizens (>55 years) and children (<12 years) where there is a separate registration counter.

Data collection

Dental surgery assistants recorded data at the reception counter and in the surgery. In appointment cases, it was also noted whether patients were early or late for their appointments. Main treatment procedures were broadly classified under extractions, examination & diagnosis (E&D), fillings, denture procedures, scaling, reviews, filling & scaling, scaling & others. For each treatment procedure, the actual time taken to complete the procedure was recorded from the time the patient is called into the surgery to the time he/she leaves the surgery.

To ensure accuracy and standardization in data collection, all dental officers and dental surgery assistants participating in this study were given a brief training

period. The clocks used in the waiting hall and inside the dental surgery were reset to the same time.

All forms issued were numbered and collected at the end of the study. Incomplete forms or with unusable information were excluded.

Definition of terms:

- Registration time : Time interval between placement of identity card registration card on the counter and completion of registration
- Waiting-room time : Time interval between placement of identity card/registration card on the counter and being called into the surgery for treatment consultation by dentist
- Total Treatment time : Time interval between start of treatment/examination and patient leaving the surgery after completion of treatment
- Outpatient : a walk-in patient without appointment (May be a new or repeat patient)
- Appointment patient : a repeat patient given an appointment time for treatment

Statistical Analysis

Analysis was done in Statistical Package for Social Science (SPSS) version 10.0. Descriptive analysis and cross-tabulations were carried out. Mean and standard deviation (S.D.) were calculated. One-way analysis of variance (ANOVA) was used to test significant difference in registration / waiting-room time between senior citizens (>55 years) and those below 55 years, and registration/ waiting-room time on different days. Statistical significance was at $p < 0.05$.

RESULTS

The study was carried out for two weeks. There were a total of 542 forms filled and returned but ten were incomplete and therefore excluded from the analysis. Four first-year dental officers carried out the majority of the clinical work during the two-week study. Three other senior officers did some sporadic work in the main surgery. Hence, the results reflected largely the speed and efficiency of first-year dental officers. There were 407 outpatients and 125 appointment patients.

Registration time

i. In Different age groups (Table 1)

The mean registration and waiting-room time for all patients was 17.9 ± 12.8 min and 43.2 ± 26.2 min respectively. The mean registration and waiting-room time for senior citizens was not statistically significant from the younger age groups. In all walk-in patients, the mean registration time was 19.6 ± 13.2 min and waiting-room time was 42.7 ± 23.8 min., whilst the mean registration time was 12.2 ± 9.5 min and waiting-room time was

Table 1. Age, gender and mean registration / waiting-room time

Age Group (years)	N	Gender		Mean Registration Time (S.D.) minutes	Mean Waiting room Time (S.D.) minutes
		Male	Female		
13-17	51	26	25	20.55 (17.50)	42.82 (23.76)
18-30	128	58	70	18.41 (12.48)	43.32 (26.55)
31-55	248	84	164	17.29 (11.57)	43.30 (25.84)
> 55	105	58	47	17.30 (13.28)	43.02 (27.86)
Total	532	226	306	17.87 (12.80)	43.20 (26.16)

44.9±32.7 min for patients with appointment. For senior citizens the mean registration time for walk-in treatment was 18.2±14 min. and appointment was 15.0±11.2 min. For the rest of the patients, mean registration time for outpatients was 19.9±13 min and appointment was 11.3±8.8 min.

ii. On Different days (Table 2)

The mean registration time was longer during outpatient days (16.7 to 22.3 min) compared with appointment days (4.6 to 10.3 min). Registration time for outpatients ranged from a minimum of 2 min to a maximum of 92 min, while appointment cases were shorter with a range of 1 to 30 min. There is statistical significance in registration time within and between days (p<0.00).

i. On different days (Table 2,3)

There is statistical significance in waiting time within and between days (p<0.00). There was less waiting time (<30 min) for outpatients on Sundays (46.0%), followed by Tuesdays (21.4%) and Saturdays (18.4%). Sundays were best managed, with about 68.8% of outpatients waiting less than 45 min. 50% of patients with appointments were waiting less than 45 min on Mondays and Wednesdays. Patients who attended on Thursdays had the least waiting time (19.9 ± 12.4 min) with about 71.4% being treated within 30 min. This may be due to the small number of patients on this day. There were a substantial number of patients who were waiting for more than an hour before being seen on both outpatient (18.8-26.2%) and appointment (41.7-42.9%) days. Waiting time ranged

Waiting-room time

Table 2. Mean Registration and Waiting-room time on different days

Day	N	Registration time (min)				Waiting-room time(min)			
		Mean	S.D.	Max	Min	Mean	S.D.	Max	Min
Sunday	128	16.72	11.55	90	2	37.55	26.58	121	1
Monday	49	8.49	6.44	30	2	49.76	33.33	130	5
Tuesday	191	20.83	13.52	92	3	45.82	25.17	129	11
Wednesday	36	10.33	6.34	27	1	47.89	36.50	180	6
Thursday	14	4.57	2.85	13	1	19.93	12.40	40	5
Saturday	114	22.26	12.97	70	2	43.73	17.71	90	10
Total	532	17.87	12.80	92	1	43.20	26.16	180	1

Days in 'bold' are full outpatient days. The rest are appointment days.

Table 3. Waiting-room time on different days

Waiting room time (min)	Number of patients (%)						N
	Sunday	Monday	Tuesday	Wednesday	Thursday	Saturday	
<30	60 (46.9)	11 (22.4)	41 (21.5)	10 (27.8)	10 (71.4)	21 (18.4)	153 (28.8)
31-45	28 (21.9)	14 (28.6)	68 (35.6)	8 (22.2)	4 (28.6)	26 (22.8)	148 (27.8)
46-60	16 (12.5)	3 (6.1)	32 (16.8)	3 (8.3)	0	40 (35.1)	94 (17.7)
>60	24 (18.8)	21 (42.9)	50 (26.2)	15 (41.7)	0	27 (23.7)	137 (25.7)
Total	128 (24.1)	49 (9.2)	191 (35.9)	36 (6.8)	14(2.6)	114 (21.4)	532 (100)

Days in 'bold' are full outpatient days. The rest are appointment days.

from 1 to 129 min for some outpatients and from 5 to 180 min for appointment cases.

ii. For Different treatment (Table 4,5)
Most senior citizens came for extractions and dentures.

77.9% of those aged between 18 to 55 years came for E&D and extractions (Table 4). E&D took less time with 56.3% of outpatients seen within 30 min. But for about 19.2% of patients who came for extractions, 29.3% for E&D, 42% for dentures and 21% for fillings, they waited for more than an hour (Table 5).

Table 4. Type of treatment in different age groups

Age Group (years)	Number of patients (%)								N
	Xtn	E&D	Filling	Denture	Scaling	Rev	F&S	S&M	
13-17	12 (5.5)	27 (14.4)	6 (13.9)	2 (2.9)	0	3 (50.0)	0	1 (100)	51(9.6)
18-30	36 (16.4)	68 (36.2)	15 (34.9)	3 (4.3)	2 (50.0)	3 (50.0)	1 (50.0)	0	128 (24.1)
31-55	121 (55.3)	68 (36.2)	17 (39.5)	39 (56.5)	2 (50.0)	0	1 (50.0)	0	248 (46.6)
> 55	50 (27.8)	25 (13.3)	5 (11.6)	25 (36.2)	0	0	0	0	105 (19.7)
Total	219 (41.2)	188 (35.3)	43 (8.1)	69 (13.0)	4 (0.8)	6 (1.1)	2 (0.4)	1 (0.2)	532 (100)

Xtn = Extraction
E&D = Examination and diagnosis
Rev = Review/ follow-up
F&S = Filling and scaling
S&M = Scaling and miscellaneous

Table 5. Mean Waiting-room time for different dental procedures

Waiting room time (min)	Number of patients (%)								N
	Xtn	E&D	Filling	Denture	Scaling	Rev	F&S	S&M	
<30	61 (27.8)	52 (27.6)	19 (44.2)	13 (18.8)	2 (50.0)	3 (50.0)	2 (100)	1 (100)	153 (28.8)
31-45	68 (31.1)	48 (25.5)	9 (20.9)	21 (30.4)	1 (25.0)	1 (16.7)	0	0	148 (27.8)
46-60	48 (21.9)	33 (17.5)	6 (14.0)	6 (8.7)	1 (25.0)	0	0	0	94 (17.7)
>60	42 (19.2)	55 (29.3)	9 (20.9)	29 (42.0)	0	2 (33.3)	0	0	137 (25.8)
Total	219 (41.2)	188 (25.3)	43 (8.1)	69 (13.0)	4 (0.8)	6 (1.1)	2	1	532 (100)

Treatment procedures
Xtn = Extraction
E&D = Examination and diagnosis
Rev = Review/ follow-up
F&S = Filling and scaling
S&M = Scaling and miscellaneous

Table 6. Waiting-room time for patients treated by individual Dental Officers (DO)

Waiting room time (min)	Number of patients seen by each Dental Officer (%)							N
	DO 1	DO 2	DO 3	DO 4	DO 5	DO 6	DO 7	
< 30	70 (38.5)	35 (40.2)	25 (16.3)	19 (18.6)	1 (100)	1 (25.0)	2 (66.7)	153 (28.8)
31-45	54 (17.0)	21 (24.1)	38 (24.8)	33 (32.4)	0	1 (25.0)	1 (33.3)	148 (27.8)
46-60	33 (18.1)	17 (19.5)	28 (18.3)	16 (15.7)	0	0	0	94 (17.7)
>60	25 (13.7)	14 (16.1)	62 (40.5)	34 (33.3)	0	2 (50.0)	0	137 (25.7)
Total	182 (24.2)	87 (16.4)	153 (28.8)	102 (19.2)	1 (0.2)	4 (0.7)	3 (0.6)	532 (100)

'DO 1-4' are first-Year Dental Officers
'DO 5-7' are senior Dental Officers

iii. With Different Dental Officers (Table 6)

Four first-year dental officers (DO 1 to 4) carried out the majority of the work during the study. The number of patients managed by and the speed of individual operators were very variable. About 41.1 to 55.5% of patients waited less than 45 min. for dental officers treating more than 150 patients within the two weeks, while more patients were seen within 45 min. (51 to 64.3%) for those officers treating only 90-100 patients. Although DO 1 had the heaviest workload, he had the least number of patients waiting more than 60 min (13.7%) compared with other dental officers (16.1 - 40.5%).

Punctuality in appointment patients (Table 7, 8)

About 41.4% of senior citizens were punctual for their appointments (early < 30 min) while 35.7% were late. 52.8% of the younger age groups were late for their appointments with the least punctual (72.7%) in the 13-17 age group. In general, 48.7% of all patients were late for their appointments (Table 7). About 50% of patients

were late for their filling and denture appointments (Table 8).

Compliance to Clients' Charter (Table 9, 10)

About 73.5% of patients were ± 30 min early or late for their appointments. About 40% of those who were a little early (<30 min) were seen within 30 min. For those who were very early (>30 min), 75% were seen within an hour and 25% were seen much earlier than their appointment time (Table 9). 73.7% of patients who were very late (>30 min) were seen within an hour with 42% being seen within 30 min. Overall, about 36% of patients were seen within 30 min regardless of their being early or late for their appointments and only 29% had to wait for more than an hour. Table 10 shows that 39% of senior citizens were being seen according to the clients' charter (within 30 min) as compared to about 31.5% of other age groups. More (30.5%) of the elderly were waiting for more than an hour as compared to only 21.1% of the other age groups.

Table 7. Punctuality at appointments in different age groups

Age Group (years)	Number of patients (%)				N
	Early <30min	Early >30min	Late <30min	Late >30min	
13-17	3 (6.2)	0	6 (15.8)	2 (10.5)	11 (9.4)
18-30	11 (22.9)	3 (25.0)	5 (13.2)	4 (21.1)	23 (19.7)
31-55	21 (43.8)	4 (33.3)	18 (47.4)	12 (63.0)	55 (47.0)
> 55	13 (27.1)	5 (41.7)	9 (23.7)	1 (5.3)	28 (23.9)
Total	48 (41.0)	12 (10.3)	38 (32.5)	19 (16.2)	117 (100)

Table 8. Punctuality at appointments for different procedures

Punctuality at appointments	Number of patients (%)						N
	Filling	Denture	Scaling	Review	Filling & scaling	Scaling & others	
Early <30min	15 (37.5)	25 (39.1)	3 (75.0)	2 (33.3)	2 (100)	1 (100)	48 (41.0)
Early >30min	5 (12.5)	7 (10.9)	0	0	0	0	12 (10.3)
Late <30min	14 (35.0)	20 (31.3)	1 (25.0)	3 (50.0)	0	0	38 (32.5)
Late >30min	6 (15.0)	12 (18.8)	0	1 (16.7)	0	0	19 (16.2)
Total	40 (34.2)	64 (54.7)	4 (3.4)	6 (5.1)	2 (1.7)	1 (0.8)	117 (100)

Table 9. Waiting time and punctuality at appointments

Waiting-room time at appointments (min)	Number of patients (%)				N
	Early <30min	Early >30min	Late <30min	Late >30min	
<10	2 (4.2)	0	2 (5.3)	1 (5.3)	5 (4.3)
11-30	17 (35.4)	3 (25.0)	10 (26.3)	7 (36.8)	37 (31.6)
31-60	14 (29.2)	6 (50.0)	15 (39.5)	6 (31.6)	41 (35.0)
>60	15 (31.2)	3 (25.0)	11 (28.9)	5 (26.3)	34 (29.1)
Total	48 (41.0)	12 (10.3)	38 (32.5)	19 (16.2)	117 (100)

*Clients' charter states waiting-room time is within 30 min.

Table 10. Compliance to waiting-room time in different age groups

Age Group (years)	No.(%) Compliant with Clients' Charter *		No.(%) Non-compliant with Clients' Charter		N
	<10 min	11-30 min	31-60 min	>60 min	
13-17	4 (25.0)	11 (6.9)	24 (10.3)	12 (9.8)	51 (9.6)
18-30	4 (25.0)	44 (27.7)	49 (20.9)	31 (25.4)	128 (24.1)
31-55	5 (31.3)	66 (41.5)	129 (55.1)	47 (38.5)	247 (46.5)
> 55	3 (18.7)	38 (23.9)	32 (13.7)	32 (26.2)	105 (19.8)
Total	16 (3.0)	159 (29.9)	234 (44.1)	122 (23.0)	531 (100)

*Clients' charter states waiting-room time is within 30 min.

Workload of Dental Officers (Table 11, 12, 13)

i. Workload on different working days

Of the outpatient days, Tuesdays were the busiest followed by Sundays and Saturdays (Table 11). Thursdays had the least number of patients. Taking into account only full outpatient days, DO 1 saw the most outpatients (40.3%), followed by DO 3 (25.1%), DO 4 (22.6%) and DO2 (16.7%). Thus on the average, these four dental officers

treated about 65.5 patients/person/ week (51 outpatients; 16 appointments).

ii. Workload for different treatment procedures

About 41.2% and 46.2% of patients came for extractions and E&D respectively (Table 12). Other treatment included about 13% for dentures, 8% for fillings and less than 1% for scaling. There was variable workload for

Table 11. Workload of Dental Officers (DO) on different days

DAY	Number of patients seen by each Dental Officer (%)							N
	DO 1	DO 2	DO 3	DO 4	DO 5	DO 6	DO 7	
Sunday	66 (36.3)	24 (27.6)	2 (1.3)	36 (35.3)	0	0	0	128 (24.1)
Monday	3 (1.6)	5 (5.7)	31 (20.3)	7 (6.9)	0	0	3 (100)	49 (9.2)
Tuesday	44 (24.2)	18 (20.7)	77 (50.3)	52 (51.0)	0	0	0	191 (35.9)
Wednesday	11 (6.0)	9 (10.3)	15 (9.8)	1 (1.0)	0	0	0	36 (6.8)
Thursday	4 (2.2)	3 (3.4)	5 (3.3)	2 (2.0)	0	0	0	14 (2.6)
Saturday	54 (29.7)	28 (32.2)	23 (15.0)	4 (3.9)	1 (100)	4 (100)	0	114 (21.4)
Total	182 (34.2)	87 (16.4)	153 (28.7)	102 (19.2)	1 (0.2)	4 (0.7)	3 (0.6)	532 (100)

'DO 1-4' are First-Year Dental Officers

'DO 5-7' are senior Dental Officers

Table 12. Workload of Dental Officers (DO) according to treatment procedures

Treatment	Number of patients seen by each Dental Officer (%)							N
	DO 1	DO 2	DO 3	DO 4	DO 5	DO 6	DO 7	
1.Extraction	93 (51.1)	23 (26.4)	53 (34.6)	50 (49.0)	0	0	0	219 (41.2)
2.E&D	62 (34.1)	38 (43.7)	47 (30.7)	36 (35.3)	0	2 (50.0)	3 (100)	188 (35.3)
3.Fillings	10 (5.5)	10 (11.5)	18 (11.8)	5 (4.9)	0	0	0	43 (8.1)
4.Denture	13 (7.1)	12 (13.8)	33 (21.6)	11 (10.8)	0	0	0	69 (13.0)
5.Scaling	0	2 (2.3)	1 (0.6)	0	0	1 (25.0)	0	4 (0.8)
6.Review	3 (1.6)	2 (2.3)	0	0	1 (100)	0	0	6 (1.1)
7.Filling & scaling	1 (0.5)	0	1 (0.6)	0	0	0	0	2 (0.4)
8.Scaling & others	0	0	0	0	0	1 (25.0)	0	1 (0.2)
Total	182 (34.2)	87 (16.4)	153 (28.7)	102 (19.2)	1 (0.2)	4 (0.7)	3 (0.6)	532 (100)

'DO 1-5' are First Year Dental Officers

'DO 6, 7' are senior Dental Officers

Table 13. Treatment time for completion of different procedures

Treatment time (min)	Number of patients (%)								N
	Xtn	E&D	Filling	Dent	S&P	Review	F&S	S&R	
<15	139 (63.5)	180 (95.7)	81 (8.6)	48 (69.5)	2 (50.0)	0	0	0	377 (70.9)
16-30	53 (24.2)	4 (2.1)	14 (32.5)	15 (21.7)	2 (50.0)	0	0	1 (100)	89 (16.7)
31-45	14 (6.4)	2 (1.1)	13 (30.2)	3 (4.3)	0	233.3)	0	0	34 (6.4)
46-60	5 (2.3)	1 (0.5)	4 (9.3)	1 (1.4)	0	0	1 (50.0)	0	12 (2.2)
>60	8 (3.6)	1 (0.5)	4 (9.3)	2 (4.7)	0	4 (66.7)	1 (50.0)	0	20 (3.8)
Total	219 (41.2)	188 (35.3)	43 (8.1)	69 (13.0)	4 (0.8)	6 (1.1)	2 (0.4)	1 (0.2)	532 (100)

Treatment Procedures

Xtn = Extraction

E&D = Examination & diagnosis

Dent = Denture

S&P = Scaling & prophylaxis

F&S = Filling & scaling

S&R = Scaling and review

individual operators. DO 1 did the most E&D and extractions (38.1%), followed by DO 3 (24.6%), DO 4 (21.1%) and DO 2 (15.0%). The bulk of other treatment procedures carried out in descending order were by DO 3 (42.1%), DO 1(21.4%), DO 2 (20.6%) and DO 4 (12.7%).

iii. Treatment time for different procedures

About 63.5% of extractions required less than 15 min, with 87.7% completed within 30 min. (Table 13). E&D took the shortest time with 95.7% completed within 15 min. About 81.4% of fillings and 96.8% of dentures were completed within 45 min. whilst scaling was completed within 30 min.

DISCUSSION

There is a dearth of published studies on clients' charter in local dental clinics for comparison although some clinics carry out small surveys on client satisfaction from time to time. Jamaiah *et al.* (2003)⁵ showed that 6.3% of their paediatric patients were registered after waiting for more than 15 min. while the present study showed a mean registration time of 19.6 ± 13.2 min for walk-in patients and 12.2 ± 9.53 min. for appointment patients. About 21% of their patients waited for more than 30 min before being called for treatment compared with 67% in our study. All their patients were seen within one hour after registration compared with 77% in our study. But their sample size of 504 patients over a period of about 9 weeks meant that the number of patients seen per day was much smaller than the present study. It is unclear the factors which affected the large range in registration time in the present study. Some of the reasons cited by the staff included difficulties with tracing patient records, problems with new registrations and patients not around when called.

There was a higher number of appointment patients waiting more than an hour than walk-in patients except for Thursdays when there were very few patients. This may be explained partly by the lack of punctuality of patients, whether coming too early or too late, for their appointments and the variable management of these patients by the operators. Jamaiah *et al* (2003)⁵ similarly cited late turn-up for appointments, new cases attending without scheduled appointments, patients were not around when called, uncooperative patients and unavoidable emergency circumstances as some of the reasons for the long waiting time of patients in their clinic. Our findings showed that half of the patients were early and the other half late for their appointments. Thus those who were very early were waiting longer unnecessarily. But for those who were late for their appointments, about 35% were still seen within 30 min, 36.8% seen within 30 to 45 min, and only 28.1% had to wait for more than an hour. It was surprising that about 31% of those who were punctual or less than 30 min early still had to wait for more than an hour. Obviously it would be difficult to adhere to the clients' charter if patients were not punctual for their appointments but it is unclear the reasons for the delay in treating patients who were punctual. There is no protocol in the clinic for managing punctuality at appointments, thus individual management style could be a contributing factor. Perhaps clinic staff should educate patients on punctuality to avoid unnecessary waiting or disruption of scheduled appointments.

Working speed varied among the first-year dental officers with some performing faster at E&D and extractions than others. On the average each officer treated about 65 patients per week. The national average workload of each Dental officer was 97.5 patients per week in 2001³ and 83.7% per week in 2002⁴. The average workload in Kedah was 105.1 patients per week in 2001³ and 99.2 patients per week in 2002⁴. The national average of number of

extractions done was 61.5 per week in 2001 and 49.8 per week in 2002. In Kedah, the average number of extractions was 62.3 per week in 2001 and 61.9 per week. In the present study, the average number of extractions per officer was only 27.4. Thus, their workload was not exceptionally heavy when compared with officers within the state and nationally. Perhaps inexperience in patient management may be a factor, as this study was largely reflective of the performance of first-year dental officers.

CONCLUSION

Mean registration and waiting-room time on all days, except Thursdays, was not compliant to the clients' charter. Only 33% were seen within 30 min according to the charter and there was a large range of registration time and waiting time for treatment. Extractions, dentures and E&D took the shortest time with about 88%, 91% and 98% completed within 30 min respectively. Only about 41% of patients were punctual for their appointments. The others were either very early or late. There was variable individual speed and management of patients by the first-year dental officers. Factors that may contribute to waiting time include number of patients per day, operator and punctuality of patients at appointments.

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REFERENCES

1. Oral Health Division, Ministry of Health Malaysia. Oral healthcare in Malaysia. 2001. Page 36-40.
2. Oral Health Division, Ministry of Health Malaysia. Report June 2004. Organizational Direction Oral Health Division.
3. Ministry of Health Malaysia. Annual report 2001. Health Management Information System (Dental Sub system). Page 67-75
4. Ministry of Health Malaysia. Annual report 2002. Health Management Information System (Oral Health Sub-system). Page 67-76
5. Jamaiah MS, Suriani S, Noraini NNY, Bahruddin S, Norizan A. Study on waiting time at the paediatric dental clinic. *Kuala Lumpur Hospital J Quality Improvement* 2003; 7(1):19-24