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Original Article

Patient Satisfaction towards Dental Services in the Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Malaysia

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ABSTRACT

Objectives: *This study aimed to determine patients' satisfaction in the quality of dental care provided by the Faculty of Dentistry, UiTM and to identify specific aspects in the service for improvement.* **Methods:** *A cross-sectional study was conducted between June and December 2018 in the faculty's clinics using a validated bilingual Short-Form Patient Satisfaction Questionnaire (PSQ-18) scale.* **Results:** *A total of 384 subjects comprised of 57.9% females and 41.8% males were recruited for this study. 92.2% of the respondent were Malay. Most of the subjects had at least two visits (43.4%) in the past. There were seven subscales studied based on the questionnaires: General Satisfaction; Technical Quality; Interpersonal Manner; Communication; Financial Aspects; Time Spent with Doctor; Accessibility and Convenience. There were 51% of the respondents who were very satisfied with the service provided in general. More specifically, 60.8% and 55.8% of respondents were very satisfied with the technical quality and interpersonal manner of the clinician, respectively. Other subscales of the questionnaires were on the communication between clinicians and patients whereby 56.6% were very satisfied. Remarkably, only 50.8% of respondents were satisfied with the financial aspects, even though the majority of patients were paying at no cost when treated by students. In terms of time*

spent with doctor and accessibility to the clinician, 54.0% and 55.5% of respondents were satisfied, respectively. **Conclusion:** *Generally, patients were satisfied with the dental services provided in the Faculty of Dentistry Universiti Teknologi MARA (UiTM). However, some aspects of service can be further improved.*

Keywords: *Dental Care, Dental Practice Management Services, Patient Satisfaction, Quality of Health Care.*

Abbreviations*: Universiti Teknologi MARA (UiTM), Patient Satisfaction Survey-18 (PSQ-18)*

INTRODUCTION

The Faculty of Dentistry, UiTM started its dental service to the community in Shah Alam in 2008. In 2015, the faculty moved to the Sungai Buloh Campus, which can be classified as an urban area with multiracial communities within the vicinity. The new building and facilities offer a wide range of services, brand new laboratories and pre-clinical facilities with the latest technology equipment, as well as state-of-the-art clinical facilities. The epoch of clinical governance and patient partnership in delivering high-quality oral healthcare, it is necessary that patients' concerns and opinions are dealt with applicably.

The healthcare sector is now transforming rapidly in consonance with demand and new technology development. This colossal growth requires a lot of aspects to be addressed. The contention in this arena includes patient satisfaction as a major factor. Donabedian (1988) suggests that 'patient satisfaction may be considered to be one of the desired outcomes of care, and the information about patient satisfaction should be as indispensable to assessments of quality as to the design and management of health care systems'.

The faculty is striving to adopt a 'patient-centred approach' in the service. Thus, many aspects need to be readdressed and restructured to enable such transformation. Patient satisfaction will be the main parameter to achieve operating goals. Kupfer and Bond (2012) mentioned that 'If the service exceeds expectations, patients may judge the quality of service to be high and the reverse is true if the care is below expectations.

Patient satisfaction is defined as a subjective evaluation of the health service received against client's expectations (Sekandi, Makumbi, Kasangaki et al., 2011). Patient satisfaction is commonly used as a critical indicator in the evaluation of health care service quality (Aharony & Strasser, 1993), as patients could play the contributor, target, and reformer roles in quality assurance (Donabedian, 1992). This has been discussed in many studies involving patient perceptions concerning their medical care published each year. It is principally evaluated over seven health service dimensions: general satisfaction, technical quality, interpersonal aspects, communication, financial aspects, time spent with the doctor, and the ease of contact or availability (Vogus & McClelland, 2016). According to Donabedian (1988), patient satisfaction is included as an outcome measure, along with changes in health, knowledge and behaviour. Donabedian (1988) also includes healthcare structures (conditions) and processes of care (activities), and requires a causal link between the structure, process and outcome.

Even though patients perception in medical care quality is biased, in terms of the marketing principles, they are the "consumers customers" of the healthcare system (Narimah, Shahril Rizwan & Nadhrah, 2006), as well as the exclusive payers, either directly to the private or mostly indirectly through taxes to the public health providers, of the services delivered to them. Consequently, their perceived satisfaction is by far the most important criterion to evaluate the performance of the medical care system (Huang, Lai & Tsai W-C et al., 2004).

Bodenheimer (2005) stated in his article that rising healthcare costs has become a household word and worry for the general public, governments, and employers who purchase health care for their employees. Rising costs for health care services and health insurance premiums represent a growing burden for middle-class families across all age groups. The growth in health care spending is crowding out other important priorities, such as saving for retirement and for children's education. Moreover, ineffective communication between

doctor and patient is one of the major problems in most healthcare providers. Ha & Longnecker (2010) described that there are many barriers to good communication in the doctor-patient relationship, including patient's anxiety and fear, doctor's burden of work, fear of litigation, fear of physical or verbal abuse, and unrealistic patient expectations (Ha & Longnecker, 2010). Effective doctor-patient communication is a central clinical function, and the resultant communication is the heart and art of medicine and a central component in the delivery of healthcare. Finally, there is the problem of long waiting times. Waiting times have been linked to inefficiencies in health care delivery, prolonged patient suffering and dissatisfaction among the public. Waiting times arise as a result of the imbalance in the demand and supply (Viberg, Forsberg & Borowitz et al, 2013).

METHODS AND MATERIALS

Instrument

We have selected the Patient Satisfaction Questionnaire (PSQ-18), originally developed by Marshall and Hays (1994) as our main instrument in this study. PSQ-18 has been validated for use in different settings and languages (Ntabaye, Scheutz & Poulsen (1998); Ghods, Dabaghian & Khadem (2016); Ganasegeran, Perianayagam & Manaf (2015); Holikatti, Kar & Mishra et al., (2012). Each of the domain in the questionnaire is proven to identify a particular area of concern. It consists of eighteen items or questions which measure general satisfaction (2 items), technical quality (4 items), interpersonal manner (2 items), communication (2 items), financial aspects (2 items), time spent with doctors (2 items) and accessibility and convenience (4 items). This questionnaire using a five-point Likert scale ranging from one (strongly agree) to five (strongly disagree).

For validation of the translation, from English to the Malay language, a pilot study was carried out on 20 randomly selected patients to test on the newly modified and adapted questionnaire to study whether the translated instructions and questions are clear and easily understood to avoid doubts in the respondents. Amendments, enhancements and improvements were made according to the feedback collected. The linguistic validation of a questionnaire is not a direct nor medical/scientific translation of the original questionnaire, but the production of a translation, which is conceptually equivalent to the original and culturally acceptable in this study.

Adequacy of samples was based on sample size calculator by Raosoft® Inc. (www.raosoft.com); the minimum recommended sample size is 382 samples with 5% margin of error and 95% of confident level based on current 50 000 patients pool in the Faculty of Dentistry of UiTM, Sg Buloh.

The study sample includes participants of 18 years old and above and patients who had received oral health care provided by the Faculty of Dentistry, UiTM. Exclusion criteria include those who refused to participate, intellectual disability and participant who are unable to converse or read /interpret the study questionnaire.

Apart from the PSQ-18 questionnaire, we have also added some demographics questions such as age group, religion, ethnicity, marital status, gender, year of residency and distance from the clinic.

Statistical Analysis

Quantitative variables were presented as mean ± standard deviation, and qualitative data were presented as number and frequency. Data analysis was performed using mean and standard deviation, T-test, and ANOVA in SPSS Version 23 (SPSS Inc., Chicago, IL) used in Windows 10.

Ethical Considerations

The Research Ethics Committee of the Universiti Teknologi MARA approved this study (REC/169/18). The informed consent process was approved based on the questionnaire is being anonymous and self-administered and contain no identifiers. A *Patient Information Sheet* was attached to the questionnaire to

explain the purpose of the study and to ensure respondent confidentiality. Anyone interested in learning about the result of this study was able to request a copy through the contact address provided in the questionnaire.

RESULTS

The data were entered into the Microsoft Excel spreadsheet (2016) and processed with Statistical Package for the Social Sciences software version 23 (SPSS Inc., Chicago, IL) used in Windows 10. Percentages, means and standard deviation were calculated for qualitative and quantitative data. T-test and ANOVA were performed to statistically analyse qualitative data. A p-value of 0.05 was considered.

Sociodemographic Characteristics of Study Respondents

The study included 57.9% female and 41.8% male based on 384 respondents. This demographic data (Table 1) revealed that most of the respondents were in 18-25 years age group (39.7%), followed by the 26-35 age group (16.6%). Most of the respondents were Malay (92.2%) who correspond with religion status (Islam, 94.3%). Interestingly, married and single marital status respondents shared the same percentage (48.6%). This could that be most of the patients were students who also correspond to the most significant age group.

Table 1: Sociodemographic Characteristics of Respondents (N=384)

Characteristics	N	Percentage (%)
Age		
18-25	153	39.7
26-35	64	16.6
36-45	51	13.2
46-55	44	11.4
56-65	48	12.5
66 and above	24	6.2
Gender		
Male	161	41.8
female	223	57.9
Religion		
Islam	363	94.3
Hindu	3	0.8
Buddha	12	3.1
Christian	5	1.3
Other	1	0.3

Ethnic		
Malay	355	92.2
Chinese	16	4.2
Indian	4	1.0
Others	9	2.4
Years of Residence in Present resident (years)		
1-5	105	27.3
6-9	72	18.7
>10	206	53.5
Current Marital status		
Single	187	48.6
Married	187	48.6
Divorced	3	0.8
Widowed	7	1.8
Family Size		
(no. of persons)		
1-3	51	13.2
4-6	187	48.6
7-10	113	29.4
>11	31	8.1
Visit Detail		
(No. of visits)		
2-4	167	43.4
5-7	141	36.6
>8	69	17.9
Type of Treatment Receive		
Periodontal Scaling	74	19.2

Endodontic Therapy	14	3.6
Operative Dentistry	34	8.8
Oral Examination	25	6.5
Multiple	237	61.6
Distance To Nearest Health Facility With Dental Services (km)		
1-10	239	62.1
11-19	100	26.0
>20	44	11.4

The type of treatment received by the patients is dominated by multiple treatments with more than half (61.6%) compared to single-treatment only. Most of the respondents were from moderate family size of 4-10 persons (78.0%) per family. There were 62.1% of the respondents who lived within 10 km radius of the dental centre. However, 11.4% of the respondents were beyond 20 km of distance from the centre. This could be due to our comprehensive care services which cover almost all dental services including specialist treatments.

Patient's Satisfaction for each domain.

Table 2 exhibits patient satisfaction score towards Dental Services in Fthe aculty of Dentistry, Universiti Teknologi MARA (UiTM). The mean (±SD) of patient satisfaction score was the highest in terms of behavioural factors, particularly 'Interpersonal Manner' (4.57 ± 0.51), followed by 'Communication' between clinician and patients (4.47 ± 0.49). The mean (±SD) of patient satisfaction score was the lowest in terms of service orientation, particularly 'Time Spent with Doctor' during consultations (4.0 ± 0.68) and 'Accessibility and Convenience' (4.01±0.66). The mean (±SD) of general satisfaction towards healthcare service acquired by patients scored average (4.36 ± 0.64).

Table 2: Results based on Mean and Standard Deviation of each domain/subscale

Scale	Questions	Scores mean(+-SD)
General Satisfaction (GS)	3, 17	4.36(0.64)
Technical Quality (TQ)	2, 4, 6, 14	4.20(0.52)
Interpersonal Manner (IM)	10, 11	4.57(0.51)
Communication (C)	1, 13	4.47(0.49)
Financial Aspects (FA)	5, 7	4.27(0.68)
Time Spent with Doctor (TD)	12, 15	4.0(0.68)
Accessibility and Convenience (AC)	8, 9, 16, 18	4.01(0.66)

Sociodemographic variables and patient satisfaction

Table 3 exhibits sociodemographic variables and patient satisfaction score towards Dental Services in Faculty of Dentistry, Universiti Teknologi MARA (UiTM). Table 3 shows that age does not significantly affect patient satisfaction within any of the subscale. The highest mean score is from the age group 18-25 years old which is 4.80 with a standard deviation of 0.5 towards 'Interpersonal Manner', whereas the lowest comes from the age group of 18-25 years old towards 'Time Spent with Doctor' with a mean score 3.89 and a standard deviation of 0.7.

Table 3: Result of Mean Score and Different Domain/Subscale of PSQ 18

Variables	*n*	GS	TQ	IM	C	FA	TD	AC
Age								
18-25	153	4.37(0.7)	4.27(0.5)	4.80(0.5)	4.49(0.5)	4.38(0.6)	3.89(0.7)	3.99(0.7)
26-35	64	4.46(0.5)	4.22(0.6)	4.55(0.6)	4.52(0.5)	4.30(0.7)	4.15(0.7)	4.01(0.6)
36-45	51	4.30(0.7)	4.12(0.5)	4.66(0.5)	4.49(0.5)	4.14(0.8)	4.07(0.8)	3.90(0.7)
46-55	44	4.31(0.7)	4.25(0.5)	4.53(0.5)	4.40(0.4)	4.26(0.7)	4.00(0.6)	4.13(0.5)
56-65	48	4.32(0.6)	4.05(0.5)	4.49(0.5)	4.35(0.4)	4.13(0.6)	4.00(0.7)	4.05(0.6)
66 and above	24	4.33(0.7)	4.07(0.6)	4.52(0.6)	4.58(0.4)	4.08(0.7)	4.10(0.7)	4.04(0.7)
Gender								
Male	161	4.29(0.7)	4.14(0.5)	4.54(0.5)	4.41(0.5)	4.13(0.7)	3.97(0.7)	4.07(0.6)
Female	223	4.41(0.6)	***4.25(0.5)***	4.60(0.5)	***4.52(0.5)***	***4.38(0.6***)	4.02(0.7)	3.97(0.7)
Current Marital Status								
Single	187	4.39(0.7)	***4.28(0.5)***	4.59(0.6)	4.52(0.5)	4.35(0.7)	3.94(0.7)	4.00(0.7)
Married	187	4.32(0.6)	***4.13(0.5)***	4.55(0.5)	4.42(0.5)	4.22(0.7)	4.04(0.7)	4.03(0.6)
Divorced	3	4.62(0.5)	4.06(0.4)	4.75(0.3)	4.63(0.5)	4.00(1.1)	4.50(0.4)	3.63(0.7)
Widowed	7	4.43(0.6)	4.07(0.7)	4.57(0.5)	4.50(0.8)	3.86(1.1)	4.29(0.7)	4.11(0.8)
Family Size								
1-3	51	4.34(0.6)	4.09(0.6)	4.61(0.5)	4.38(0.5)	4.10(0.8)	3.93(0.6)	3.90(0.7)
4-6	187	***4.28(0.7)***	4.20(0.5)	4.52(0.6)	4.48(0.5)	4,28(0.7)	4.00(0.7)	4.00(0.7)
7-10	113	4.40(0.6)	4.22(0.5)	4.61(0.4)	4.49(0.5)	4.29(0.6)	4.01(0.7)	4.06(0.6)
>11	31	***4.69(0.5)***	4.32(0.5)	4.68(0.4)	4.54(0.4)	4.45(0.6)	4.05(0.7)	4.17(0.6)
Visit Details								
(No of visits)	167	4.35(0.6)	4.20(0.5)	4.57(0.5)	4.48(0.5)	4.28(0.7)	4.28(0.7)	4.00(0.7)
2-4	141	4.41(0.6)	4.21(0.5)	4.55(0.5)	4.53(0.5)	4.30(0.6)	4.30(0.6)	4.05(0.6)
5-7	69	4.30(0.7)	4.18(0.5)	4.62(0.5)	4.51(0.5)	4.20(0.7)	4.20(0.8)	4.00(0.7)
>8								

GS: General Satisfaction, TQ: Technical Quality, IM: Interpersonal Manner, C: Communication, FA: Financial Aspects, TD: Time Spent with Doctor AC: Accessibility and Convenience; Bold font indicates statistical significance.

Comparing the genders, subscale scores of 'Technical Qualities', 'Communication' and 'Financial Aspects' were significantly more in female patients than male patients. The highest mean score comes from female towards 'Interpersonal Manner' (4.60 ± 0.5) and the lowest from male towards 'Time Spent with Doctor' and female towards 'Accessibility and Convenience' with mean score 3.97.

Single and married patients had significantly difference scores on 'Technical Qualities'. The highest mean score is 4.75 ± 0.3 from divorced marital status towards 'Interpersonal Manners' and the lowest is 3.63 ± 0.7 towards 'Accessibility and Convenience' by the divorced group.

Patients who have family size of 4-6 have significantly different scores compared to those with more than 11 family members for 'General Satisfaction'. The highest mean score came from patients with more than 11 family members at 4.69 ± 0.5 and the lowest 3.90 ± 0.7 from those with 1-3 family members.

There was no significant difference in the mean scores on the frequency of visits. The highest is 4.62 ± 0.5 from patients with more than 8 visits to our clinic.

DISCUSSION

Our sociodemographic data show that the patients were mainly Malay (92.2%) and female (57.9%). This shows that females possess more treatment-seeking behaviour compared to males. Based on Department of Statistics Malaysia(2017), the majority of the community in our vicinity is Malay (49.9%) which corresponds to the result of the study with Malay attended the clinic the most. Most of the respondents were from the younger age group of 18-25 years old. Our findings are similar to Ibrahim, Ng & Husein (2017) whereby 46% of their respondents came from the 18-25 years age group. The majority were less than 30 years old (n= 141, 41.5%). This finding is perhaps in concordance with the high number of student population from various institutions in this area. Perhaps, there was also demand for orthodontic treatment as a current trend and there is an increased awareness of dental health among teenagers and young adults.

From this study, it is also revealed that more than half of the respondents had resided in their current residence for more than 10 years. This study also found that patients living near our facility attended our clinic the most. Interestingly, 11.4% of the respondents live more than 20 km from our clinic. This is due to the wide range of services provided in our clinic and the good reputations of the services.

Our strengths based on our patient satisfaction are 'Interpersonal Manner' (4.57±051) and 'Communication' (4.47±0.49). Based on the questionnaire, the clinicians or students provide services in a very friendly and courteous manner. There are many factors which can contribute to a good relationship between patients and clinician, one of which includes the communication skills of the clinicians. A study by Abioye Kuteyi, Bello & Olaleye et al., (2010) found that doctors' communication skills and information provision contributed positively to patients' satisfaction level (Abioye Kuteyi, Bello & Olaleye et al., 2010). They also found that good interpersonal and communication skills are important in terms of gaining patients' confidence and can also improve patients' adherence to treatment (Abioye Kuteyi, Bello & Olaleye et al., 2010). In our study, most of the respondents agreed that they obtained sufficient information about their health from doctors, due to proper training given to the students. The students observed their communication skill and professionalism in their practical sessions which contributes to a high satisfactory score in the communication domain. In a study by Hassali, Alrasheedy & Ab Razak et al (2014) found similar results for communication skills in the public healthcare sector.

On the other hand, the lowest satisfaction is in the domain of 'Time Spent with Doctor' (4.0±0.68) and 'Accessibility and Convenience' (4.01±0.66). Consultation time was also considered one of the main factors that could influence patient satisfaction level (Raja Lexshimi, Zaleha and Shamsul et al., 2009). In this study, most respondents were satisfied with consultation time, however, it was the lowest among others. This may be due to students having requirements to finish their consultations in a short period of time, and thus they were in a hurry to finish them.

Based on our study, 'Accessibility and Convenience' domain is one of the lowest in terms of satisfaction score. One of the questions in this domain/subscale also addressed the waiting time for appointment after being seen by primary care service (requiring specialist or student appointment). The low score dictates that the

waiting time is quite long due to the huge number of patients on the waiting list. A study by Anderson, Camacho & Balkrishnan (2007) found that patients can accept their long waiting time as long as they feel that they have enough time with their physician (Anderson, Camacho & Balkrishnan, 2007). However, the authors warned that the combination of short consultation time and long waiting time is toxic in terms of patient satisfaction and this must be avoided by the healthcare providers in particular and by the healthcare system in general.

With reference to the age categories, this study shows that all age categories were satisfied with the service provided in the clinic with no significant difference. This shows that the service provided in the clinic is suitable for all age groups. Hasyimah, Ismail & Jamil et al (2014) stated that the older age group has a tendency to express their dissatisfaction towards services provided in comparison with the younger age group. They also stated that older people were more sensitive and have a tendency to evaluate with critical thinking (Hasyimah, Ismail & Jamil et al., 2014). Our study found otherwise; however, they were using a different instrument, SERVQUAL. It was found that the older respondents were more satisfied as compared to the younger respondents. In spite of that, this study shows that age has no significant difference with the patient satisfaction towards the services provided.

Female generally shows higher satisfactory score compare to male, whereas a study by Hasyimah, Ismail & Jamil et al (2014) showed that male have higher satisfaction than females. This study shows that there are significant differences in the domain of 'Technical Qualities', 'Communication' and 'Financial Aspects'. This is supported by Gopalkrishna and Mummalaneni (1993) in their study which they identified women as being more satisfied than men, attributing greater exposure to dental services among women, a likely reason to moderate their expectations, which in turn, are more likely to be met (Gopalkrishna and Mummalaneni, 1993). Patients' gender is not significantly associated with patient satisfaction as stated by Aragon & Gessel (2003). Ezat, Aizuddin, & Mohd Dom et al. (2010) also stated women are deemed to be fussier and more sensitive to informal body gestures or communications that they perceive as negative, thus, causing dissatisfaction.

Greater patient satisfaction was found to be significantly associated with being married as stated by Hall and Dornan (1990) in his study. In our study, there is a significant value between single and married in 'Technical Qualities' subscale; generally, single patients are more satisfied than married patients in contrast to Hall and Dornan (1990) statement.

As for family size, there is a significant difference in the general satisfaction between family members of 4 to 6 and family members more than 11. Family members more than 11 also shows higher satisfaction score compared to other family sizes which may be due to increased responsibilities. This is supported by Noh, Kim, & Park et al.(2017) which stated that the number of family members and education level significantly affected stress level only among females.

Finally, based on statistical analysis, the number of visits does not have any significant difference between the number of visits with any of the subscales. This proves that patients were satisfied with any treatment being done in a short period of time. Patients were also willing to visit more than 8 times to receive treatment and yet still give a high satisfaction score.

Based on the result, the subscales that need to be improved are 'Time Spent with 'Doctor' and 'Accessibility and Convenience'. These aspects are evitable. We could suggest to the faculty to manage patients in a more efficient manner such as setting limitations to new patient intake and provide more manpower to reduce the waiting time. We also could suggest an improvement to the recall systems.

The limitations of this study are the lack of data to compare the satisfaction between services provided by the undergraduate students, postgraduates students and specialists. We also did not include paediatric patient's parent or caregiver in our study. Thus, we do not have any data regarding our services to the children (paediatric services).

CONCLUSION

In conclusion, patients were generally satisfied with the dental services provided in the Faculty of Dentistry Universiti Teknologi MARA (UiTM). However, some aspects of service need to be improved, especially the waiting time for appointments. Due to the high demand for the services, the faculty experiences a high number of patients daily who are seeking dental treatments.

DECLARATION OF FUNDING AND CONFLICT OF INTEREST

This study did not receive any funding. The authors declare that there is no conflict of interest.

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