

Patients' satisfaction with dental services provided by a university in Hong Kong

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Summary

This study was a consumer evaluation of the dental care services provided by a university dental clinic in Hong Kong. This clinic provides dental care to all university students, and university staff and their dependants. The objectives of this study were: 1) to study the consumers' satisfaction with the dental services; 2) to identify their reasons for not using the dental services; and 3) to compare the opinions of the students with those of the university staff and their spouses. A total of 140 students and 180 staff and their spouses were randomly selected for this study. The response rates were 100% for students and 77% for staff and spouses. Results showed that both groups of respondents were satisfied with the quality of dental services provided by the university dental clinic. However, they were not satisfied with the long waiting time for an appointment. Students who had not attended the university dental clinic commonly stated that they were busy and had no time for a dental visit. On the other hand, many staff and their spouses did not seek care from the university dental clinic because they thought that the fees were high. Although the overall Dental Satisfaction Index (DSI) scores for the students (64.5) and staff and their spouses (65.1) were similar, there were differences in the aspects of the services which the two groups were satisfied or dissatisfied with. Thus if the university dental clinic wants to implement changes so as to improve consumer satisfaction and utilization, a careful analysis of the specific opinions of its various consumer groups is required.

Background

The University of Hong Kong is the oldest university in Hong Kong with a history of more than 100 years. However, an on-campus dental clinic was not available until 1980. Since then the clinic has expanded with the growth of the university, and is at present the largest dental care center among the seven universities in Hong Kong. In 1995, the dental clinic moved to a new premises where all dental equipment was newly bought so as to improve the quality of care. There are five full-time and one part-time dental surgeons, three dental hygienists and ten supporting staff to serve both the full-time and part-time students (undergraduate and postgraduate), and the university staff and their dependants. The number of staff and dependants was 11,300 and that of students was 14,100 in June 1996. The dentist to client ratio was around 1 to 4,000. In 1995/96, about 64% of dental treatment time were used on treating students¹.

The dental service is run by the university through a management board consisting of university administrators, University Health Service staff, and representatives from staff and students. It aims at prevention of dental diseases and provision of comprehensive general dental care for its patients. The cost of the dental service is heavily subsidised by the university. Patients pay according to the length of treatment time irrespective of the type of treatment. Undergraduate students and junior staff (e.g. unskilled workers) and their dependants pay the lowest scheduled fee, senior staff (e.g. teaching staff and administrators) and their dependants pay the highest dental charge, while postgraduate students and staff of intermediate rank (e.g. technicians and secretaries) pay at the middle level of the fee scale. In addition, patients need to pay all the laboratory charges of the dental work involved. The dental appointments are always fully booked and the usual waiting time to get an appointment for a check-up is between three to eight weeks. However, patients with acute problems can make an emergency appointment and they are seen on the same day.

Although the university aims at providing a good dental service for its members and spends a considerable amount of money and human resources on this, little information on patients' feedback and satisfaction was available to properly evaluate the service.

Patients' satisfaction with previous dental care is important because it will influence their service utilization pattern^{2,3}. It has been shown that patients who were more satisfied with

dental care had better compliance, fewer broken appointments and less pain and anxiety⁴. It is also increasingly accepted that patients' satisfaction should be one of the elements used in assessing quality of care. A major reason for careful monitoring of consumer satisfaction is the recognition of the complex relationship between patients' views of the health care system and their health and illness behaviour. Dentist-patient interactions during a dental consultation, including cognitive and emotional aspects, has been demonstrated to affect patients' compliance with clinical advice and follow-up visits⁵.

Due to the importance of these rationales for obtaining patient feedback on dental services, a consumer evaluation survey was undertaken by the University of Hong Kong. The objectives of the study were firstly to study patients' satisfaction with the dental care service provided by the University Health Service; secondly to identify reasons for not using the dental service; and thirdly to compare the student's satisfaction with the university dental care and reasons for not using the services with those of the staff and their dependants.

Materials and Methods

Information from the study individuals was obtained through the use of a self-administered questionnaire. The design of the questionnaire was based on the 19-item Dental Satisfaction Questionnaire (DSQ) developed by Davis and Ware⁶, and it was modified to use personal referent. The questionnaire contained a list of statements about various aspects of dental care and the participants were asked to indicate their degree of agreement with the statements on a 5-point Likert scale (strongly agree; agree; not sure; disagree; strongly disagree). The items were mainly categorized under five dimensions which included access, availability/convenience, cost, pain and quality (Table 1). Access refers to the physical and financial process of arranging for and getting to dental care. Availability/convenience refers to whether the necessary providers and services exist in the area, and to the convenience of location and working hours. Quality is defined as how good the care is, both in terms of technical and interpersonal aspects of the care process. Pain management refers to whether the dentist handles well the pain associated with dental treatment and how its management affects attitudes toward seeking dental care. There were two questions on the continuity of and general satisfaction with dental care (Item no.12 and 23).

The questions set were randomly arranged and asked in either positive or negative way to minimize inertial response given by the respondents (Table 1). The answers to the negatively approached questions were reversed by recoding during analysis so that the direction of all responses were the same. Since the original DSQ was designed only to evaluate patients' satisfaction with dentist's performance, the questionnaire used in this study was expanded by adding questions on patients' satisfaction with the performance of other dental team members, namely receptionists, dental hygienists and dental surgery assistants. The questions added were: 'I was treated courteously and professionally by the receptionist/ dental hygienist/ dental surgery assistant.' The modified DSQ was translated into Chinese, and a bilingual questionnaire was pilot tested on 30 patients who attended the university dental clinic. The patient were asked if they understood the questions and they were encouraged to make comments on the clarity of each question. It was noted from the pilot study that the question in the original DSQ asking whether the clinic is well-equipped and comfortable or not was not clear to some patients. Hence, it was split into two questions in the modified questionnaire, one on whether the waiting area is comfortable or not and the other on whether the patient thought the clinic was modern. Most people could understand the other questions and the questionnaire did not need any further amendments other than a few minor changes in Chinese wording.

The survey was conducted in October 1996. The study population was divided into two groups, students on the one hand and university staff and their dependants on the other. A total of 140 students were selected by a random cluster sampling procedure described below. Seven degree courses were selected randomly by means of a random number table from the complete list of courses published by the university. For each selected course, the investigator went to the lecture room where the students were having their lessons to randomly invite twenty students to fill in a questionnaire. To ensure a high response rate, the questionnaires were distributed to the students in the lecture rooms during a break or at the end of a lecture. The students were asked to complete the questionnaires on the spot and to return them to the investigator before they left. Courses for first year students were excluded from the sampling and so only students who had been studying in the university for more than a year were asked to complete the questionnaire.

Two samples of 90 staff each were selected systemically from the university staff list. Questionnaires were sent to the staff members in the first sample and to the spouse of the staff

in the second sample. Staff working in the university dental clinic and their spouses were excluded from the sampling so as to avoid biased answers. Questionnaires were sent to the selected individuals together with an explanatory letter and a return envelope in October 1996. In mid November, a reminder was sent to encourage them to return the questionnaire.

The data collected were entered into computer and analyzed with the software SPSS. Prorated mean, the mean score expressed as a percentage of the highest possible score, of the five dimensions of satisfaction (access, cost, availability/convenience, pain and quality) were computed and the Dental Satisfaction Index (DSI) was constructed⁶. The DSI included all items from the five dimensions as well as those measuring general satisfaction and continuity of dental care. The original score of each item ranged from one to five and these scores were converted according to the direction of the wordings in the statements so that after conversion a higher score indicates greater satisfaction. The DSI is the sum of the item scores. Mean scores and prorated means were also computed for each dimension of the DSI. Two-sample t-test was performed to compare the differences in mean scores between the students and the staff and their spouses. Chi-square test was used to evaluate the differences in distribution of the reasons for not using the dental service between the two groups. The level of statistical significance was set at 5%.

Results

All of the 140 questionnaires distributed to the students were properly answered and it was found that 88 students (63%) had used the university dental service. Among the 180 questionnaires sent to university staff and their spouses, four blank ones were returned with a note saying that the individual was not in Hong Kong. These were excluded from the calculation of response rate. A total of 136 completed questionnaires were returned and the response rate was 77%. Among these respondents, 87 (64%) had used the university dental service.

The mean scores and standard deviations of the scores of the 23 dental satisfaction items asked in the questionnaires are shown in Table 2. The mean scores ranged between 1.6 (item 13) and 4.2 (item 1). The students rated 18 out of the 23 items above the scale mid-point. The

five items with a mean score below the scale mid-point were adequacy of dentists, hard to get an appointment right away, dentist's explanations, receptionist performance and general satisfaction. Data from the staff and their spouses showed four items with a mean score below the scale mid-point. There were statistically significant differences in the mean scores of six items between the students and the staff and their spouses. These were: comfort of the waiting area, treatment fee, continuity to see the same dentist, dentist's explanation, modern dental clinic and receptionists' performance. Table 3 showed the descriptive statistics of the five dimensions of dental satisfaction plus continuity of and general satisfaction with the university dental service. The dimension on quality was split into interpersonal and technical aspects of the care process. There was no statistically significant difference in any item between the students and the staff. The DSI scores for the students and staff were 64.5 (\pm 6.8) and 65.1 (\pm 9.0) respectively.

The reasons given by the respondents who had never used the university dental service were listed in Table 4. The main reason given by both groups was the long waiting time for an appointment. The students' second and third most commonly cited reasons were busy/no time and no perceived dental problems. Only one out of the 51 nonuser students complained of high treatment fee. In contrast to the students, the second most common reason given by the staff and their spouses for not using the university dental services was high fee. The next two commonly cited reasons were that they had joined another dental care scheme and they had their own regular dentist. There was a statistically significant difference between the two groups on the reasons of no time and high fee.

Discussions

Measures of patient satisfaction with dental care may provide useful information to those who want to understand or to predict patient behaviour, and to those who want to evaluate the dental care providers and services. This study employed a self-administered questionnaire that required less than five minutes to complete. It has been shown to be an efficient and effective tool for collecting this information. Item and factor analyses have been previously carried out⁷⁻⁹ and their results support the construction and separate scoring of five scales (access, availability/convenience, cost, pain and quality) which represent the major sources of

satisfaction and dissatisfaction with dental care providers and services. This study modified the original DSQ by adding some items on the performance of other dental team members. This is because the original questionnaire does not evaluate dental ancillary staff who play an important role in dental care and they can affect patient satisfaction. Moreover, these additional items increase the weight of interpersonal aspect of quality, which is under-represented in the original 19-item DSQ.

This study achieved a perfect response rate from the students. This might be because of the co-operativeness of the teachers who announced this study to their students and encouraged them to participate at the beginning to the lecture. Moreover, they allowed the questionnaires to be distributed, completed and collected on the spot at a break of the lecture or before students left at the end of a lecture. The direct contact and invitation of students by the investigator also encouraged response. As there was no direct contact with staff and their spouses, the response rate was conceivably lower. The number of selected individuals who were on leave was unknown. However, a 77% response rate was considered more than satisfactory in surveys using mailed questionnaire^{10, 11}. Since the present study aimed to find out the major problems of the dental services and the major differences between the two groups of consumers, a sample size of about 140 respondents in each group was considered to be adequate. From a statistical point of view, a sample size of more than 100 is quite large and precision of the results will improve only slightly if a larger sample size. The validity of the results depends more on the randomness of the sampling procedures and the sample response rate¹². To obtain adequate consumer feedback in a reasonable time for improving the university dental service, a larger sample size may not be warranted. Rather, regular surveys of this kind should be conducted so as to monitor the service and to evaluate the effects of efforts put to improve the service.

The dental service utilization rate of the student respondents in this study was found to be higher than that reported in a study conducted in 1995¹³. The higher percentage was probably due to the exclusion of first year students in this study. The utilization rate of the staff and their spouses was in agreement with a previous unpublished estimation of the utilization rate.

The results of this study show that the students and staff in general were satisfied with the dental care services provided by the University. The DSI scores of the respondents in this study were similar to those obtained in patient satisfaction studies conducted in the U.S.A.^{6,9}

However, respondents might have the same DSI score and yet have very different sources of satisfaction and dissatisfaction. If one just use the respondents' overall DSI score to assess a dental service, then it will be an incomplete interpretation of the data. It is necessary to look into the individual scales of satisfaction. Unlike findings in many satisfaction studies^{9,10,11} this study did not find a low mean score on treatment cost. This is probably because the dental service was highly subsidised by the university, and so patients were not dissatisfied with the cost. Although both groups of respondents in this study had a low score on general satisfaction, there was doubt on its validity as this aspect was only measured by a single negatively approached statement in the questionnaire. Both groups scored low in two items, hard to get appointment right away and not enough dentists in the clinic. Although the University Health Service had implemented measures to shorten the waiting time to within six weeks, it was not possible to further shorten the waiting time without having to change the scope of the service or to increase staff. The latter was unlikely to occur due to financial constraints.

There were six items in the questionnaire in which satisfaction scores of the staff and their spouses differed significantly from those of the students. Firstly, the students were more satisfied with the comfort of the waiting room and the modern equipment in the clinic than the staff. This may be because most of these student respondents were treated in the new clinic after 1995 while some staff who have been working for a number of years might have completed their dental treatment in the old clinic and had not been to the new clinic which is more comfortable and better equipped. Secondly, the students were less satisfied with the continuity of care. They probably had difficulties in finding a time in between their lessons to visit the university dental clinic at a time when the dentist they chose was available. On the other hand, staff and their spouses were likely to stay with the same dentist and they would take time off according to the appointment offered. Thirdly, the difference in mean score on receptionist performance may indicate that the receptionists behaved differently in dealing with the two groups. The clinic staff should be informed of this and they should try to be courteous to all patients. Fourthly, the finding that the staff were less satisfied with treatment cost is understandable because they paid double or triple the amount paid by the students according to the university policy. Lastly, it seems that staff and their spouses got more information about their treatment and cost from the dentists. This may be because they were more likely to require complex treatments and thus the dentists had to explain more about the treatment and the cost. On the other hand, most students only needed simple treatments which the dentists thought no explanations were necessary. Results of this study showed that this belief of the

dentists was not justified. They should be informed of this finding and try to improve their communication with the students.

It was concluded that both the students and the staff and their dependants were in general satisfied with the quality of dental care provided by the university. Although the overall Dental Satisfaction Index (DSI) scores for the students and staff and their spouses were similar, there were differences in the aspects of the services which the two group were satisfied or dissatisfied with. Thus if the university dental clinic wants to implement changes so as to improve consumer satisfaction and utilization, a careful analysis of the specific opinions of its various consumer groups is required. The Dental Satisfaction Questionnaire was found to be a simple and useful tool in obtaining consumer feedback on a dental service and regular surveys on consumer satisfaction using this tool will help to monitor the service and to evaluate efforts put in for improvement.

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