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Satisfaction with the oral health services. A qualitative study among Non-Commissioned Officers in the Malaysian Armed Forces

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Introduction Patient satisfaction is critical for the growth and prosperity of any oral health service or practice. The success of any oral health service can be assessed by an evaluation of the degree of satisfaction/dissatisfaction of its patients. ***Objective*** The aim of this study is to assess satisfaction/dissatisfaction with the oral health services among Non-Commissioned Officers (NCOs) in the Malaysian Armed Forces (MAF). ***Method*** A qualitative study using the Nominal Group Technique was undertaken. Eighty subjects from the Rasah Camp, Seremban were randomly selected from four lists, namely privates, male and female corporals and sergeants and were grouped into 10 discussion groups of eight participants each. Of the 10 groups, four groups comprised male corporals, three groups of privates, two groups of sergeants and one group of female corporals. Two separate discussion sessions were conducted to elicit factors/items causing dissatisfaction and satisfaction expressed by the participants. Every participant then scored all the factors perceived as important by members of the group. The score ranged from 0–9 i.e., the least to the most important. Scores were weighted, and the weighted score of every participant for each item was added. The ratings of the factors were determined by comparing the sum of the weighted scores. ***Results*** The six most important factors/items rated in the satisfaction discussion were modern equipment (9.07), friendly dentist (8.27), pleasant surgery (8.23), good quality treatment (7.93), friendly staff (7.18) and pain alleviation (6.07). These factors were further regrouped into three broad categories i.e. (1) Clinic set-up, (2) Patient-personnel interaction (PPI) and (3) Technical competency (TC). In the dissatisfaction discussion six factors/items were rated i.e. long waiting time (10.39), sequence of treatment not followed (7.18), non-availability of dentist (7.16), unfriendly staff (7.05), poor quality treatment (6.80) and restricted time for treatment (5.98). The three most important categories in the dissatisfaction discussion were (1) Administrative efficiency, (2) PPI and (3) TC. ***Conclusion*** A conceptual model was developed to explain the factors affecting patients' satisfaction/dissatisfaction with the oral health services. It is recommended that a questionnaire survey be undertaken to validate and reflect the entire population of the MAF. Remedial measures highlighted in the areas of dissatisfaction should be addressed accordingly based on the quantitative study.

Key words: conceptual model, patient satisfaction/dissatisfaction, qualitative study

Introduction

Since the 1970s, expression of patient satisfaction have been recognized as important components in the assessment of the quality of health care (Lebow, 1974; Locker and Dunt, 1978). Measurement of patient satisfaction with dental care may provide useful information to those attempting to understand or predict patient behaviour and to those evaluating dental providers, services and facilities (Taylor and Cronn, 1994). Patient satisfaction is an important component of the evaluation of the quality of health care and could facilitate further regular visits and patient compliance. This in turn would generate continuity of care and better therapeutic outcome for the patients. Hence, patient satisfaction is critical for the growth and prosperity of any dental service or practice (Wunder, 1992).

Several investigations have developed various measures of patients' satisfaction. Most recognize that patient satisfaction is multidimensional and includes factors such as availability, accessibility, costs, communication, technical competence and patient-personnel interaction (Davies and Ware, 1981). Studies have shown that whilst patients are generally satisfied with overall health care, further probing on specific aspects of health care will reveal certain areas of dissatisfaction (Kress, 1987; Murray *et al*., 1997).

Thus far, two different approaches have been used to assess patient satisfaction; the quantitative and qualitative approach. Over the last 35 years quantitative studies form the bulk of research on consumer satisfaction. Currently, qualitative research has gained recognition as a unique tool in the evaluation of health services research which promotes effective dialogue between participants utilizing them. Views of patients are greatly taken into consideration to provide a holistic view (Gallagher *et al*., 1993). In fact, patients' concerns should be gathered as an essential part of evaluating the effectiveness of care. Qualitative research reveals how conditions of health and health care affects lives of people as interpreted from their viewpoints and sheds light on important problems which are not known to carers. Such findings are currently limited.

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The Malaysian Armed Forces (MAF) Dental Services are tasked to provide and maintain oral health to members of the Ministry of Defence and their dependants. Dental health is considered as an integral part of general health and it is without doubt that improved dental health status among soldiers assists in the fighting strength of the units (Keeble and Rugg Gunn, 1983; Allen and Smith, 1992; Hussin, 1992). Despite the availability of free comprehensive dental services, several studies have indicated that the utilization by the MAF personnel is mainly confined to symptomatic visits only (Indrasanan, 1989; Faki, 1989; Borhan, 1995; Halina, 1995; Didar, 1996).

Several studies have been conducted on the MAF personnel to determine prevalence of orofacial pain and discomfort (Wan Hussain, 1996), and their needs and demands for dental care (Didar, 1996) as well as the effectiveness of the Active Dental Support (ADS) Programme (Halina, 1995). All these studies have utilized the quantitative approach based on normative assessment. Only one study was based on a qualitative approach to determine patient preference for dentist communication skills in the MAF which is only one aspect which influences patient satisfaction (Zulkifli, 1997). Thus, the purpose of this study was to assess patients' satisfaction and dissatisfaction with the dental services of the MAF.

Materials and method

There are several methods of conducting qualitative research. The consensus method (Jones and Hunter, 1995) is to determine the extent to which experts and lay people agree on a given issue. The disadvantages commonly found with decision making in groups and communities where individuals or groups representing vested interest are avoided with the consensus method. Within the consensus method several other techniques such as brainstorming, Delphi process, focus group discussion and the nominal group technique (NGT) had been employed. In this study the NGT was adopted. The NGT combines qualitative and quantitative data collection in a group setting and avoids problems of group dynamics associated with other groups employing the consensus method. Idea generation and problem solving are combined in a structured group process which encourages and enhances participation of all group members (Gallagher *et al*., 1993).

The First Brigade Rasah Camp, Seremban was the site of the study as there was an armed forces dental clinic with a dental officer stationed at the clinic. The sample was selected from NCOs in various units serving the camp. The NCOs are soldiers with the rank of sergeants and below. Sample size calculation and stratification is not crucial in a qualitative study as it is only an exploration of the patient's satisfaction/dissatisfaction with the oral health services. A convenient sample size of 80 participants was randomly selected to allow 10 discussion groups, each consisting of eight participants to be assembled.

From each of the participating units in the camp, a list was collected of all male and female service personnel with the rank of private, corporal and sergeant. An additional criteria included for the selection was that the last dental visit by each personnel must not be longer than two years preceding the study. Collectively each list from the units formed the sampling frame. From the sampling frame, eight participants or a multiplication of eight numbers of participants were randomly selected to make up 10 discussion groups of eight participants each. Of the 10 discussion groups, three groups had male private personnel, one group had only female corporals, four groups had male corporals and two groups had male sergeants. The homogeneity within each group with respect to rank and gender would avoid dominance of discussion and facilitate generation of ideas. Approval to conduct the study was obtained from the Director of MAF Oral Health Services, Commanding Officer and Officer-in-Charge of all the participating units in the camp.

A discussion group was conducted every morning over a period of two weeks. The research team comprised of the principal investigator (PR) and a staff nurse who was the recorder. Notes of each meeting were compiled after every discussion. In addition to writing down the participants' responses, a cassette recorder was also used to produce voice taping of each discussion. This was done to assist in ensuring completeness of the notes which is important for transcribing.

The conduct of the NGT discussion was done according to the NGT stepwise procedure as shown in Table 1. The first stage is the welcoming statement which stressed the importance of the task and participants contribution. The issue addressed for both satisfaction and dissatisfaction is shown in Table 2 (Worksheet A or B). After the pre-test it was decided that the 'Dissatisfaction Problem Statement' be discussed first. This was undertaken to avoid contradictory statements by the participants in the two separate sessions.

The participants were given a half hour break before addressing the statement regarding satisfaction. The NGT stepwise procedure was repeated as in the earlier session. Each subject contributed a factor leading to patient satisfaction with the oral health services which he or she perceived as the most important. After further clarification, similar opinions from two different participants in the same session were considered as a single common response and grouped under one category. Every participant then scored all the factors perceived as important by members of the group. The score ranged from 0–9 i.e., the least to the most important. Scores were weighted, and the weighted score of every participant for each item was added. The rating of the factors were determined by comparing the sum of the weighted scores.

Transcribing was done manually to reduce each participant's response into summarized keywords or key phrases. The items and words mentioned were verified from the tape recordings made during every discussion session. Table 3 showed examples of transcribing some of the participants' responses.

All 80 participants were considered as one large group and all the scores of every individual were compiled after the completion of the 10 discussion groups. The weighted score of each item was obtained using the SPSS statistical programme and the calculation is shown in Table 4. The resulting "weights" showed the relative importance a participant gave to each item.

Table 1. Conduct of NGT discussion.

NGT Stepwise procedure	*Activities*
Facilitator introduces the topic of discussion	Welcoming statement which stressed the importance of the task and each participant's contribution. Participants introduced themselves. The facilitator then read out the topic of discussion.
Silent generation of ideas in writing	Participants spent 5 minutes writing down their responses in relation to the topic of discussion on Worksheet A or B. The group remained silent and discussion was not permitted.
'Round Robin' feedback of ideas	Facilitator went round the table and asked each participant in turn to contribute the most important of their responses, Each idea was numbered and written in the words of the participants (keywords/key phrases) on a board visible to all participants. Discussion was still not permitted.
Serial discussion of ideas	Each of the ideas listed on the board was discussed in turn. The objective of this discussion was to clarify, elaborate and defend each item.
Round to rate responses	On their own, each participant then rated the importance of each item on a Likert scale of 0–9 with 0 as 'least important' and 9 as 'most important' on Worksheet C.

Table 2. Nominal group technique.

Worksheet A or B	*Worksheet C*
Participant No.:	Participant No.:
What existing factors of our dental services are you satisfied or dissatisfied with?	**Instruction**: List all the items written on the board and give a score to every item. Scores range from 0-9; 0 as 'least important' and 9 as 'most important'.
Factors: (1–10)	0——————9
1.	Least important Most important
2.	
3	**FACTORS** **SCORE**
4.	1.
5.	2.
6.	3.
7.	4.
8.	5.
9.	6.
10.	7.
Of the items I have listed, in my opinion, the most important factor contributing to satisfaction or dissatisfaction is_____	8.

Table 3. Examples of transcribing.

Notetaker's record	*Transcribing using keyword/phrase*	*Translate*
Dentist able to alleviate pain	Alleviate pain	Technical competency
Good and adequate medication given	Good treatment	Technical competency
Modern and sophisticated equipment	Modern equipment	Clinic set up
Conducive and pleasant surgery and neat reception area	Pleasant surgery and reception area	Clinic set up
Didn't have to wait long for treatment	Short waiting time	Administrative efficiency

Table 4. Derivation of weighted score

Score of one participant	*Item 1*	*Item 2*	*Item 3*	*Sum of score*
Raw score	6	4	2	6+4+2=12
Weighted score	6/12	4/12	2/12	

Results

Of the 80 randomly selected subjects, 40 were from the "corporals" group, 24 from the "privates" group and 16 from the "sergeants" group. The sample within the corporal list was further stratified according to gender. There were eight females in this group. The profiles of the 80 subjects are summarized in Table 5. Corporals made up half the sample. The subjects in the various ranks and gender reflect the rank and gender composition of subjects in the participating units. The subjects who participated in the discussion group had ages ranging from 18–38 years old. All the subjects were Malays.

A total of 17 items were elicited from the 80 subjects as to what made them satisfied with the oral health services. The 17 factors/items were further interpreted

Table 5. Distribution of subjects by rank and gender

Profile of subjects n=80	*Number of subjects*	*%*
Rank		
Private	24	30
Corporal	40	50
Sergeant	16	20
Gender		
Male	72	90
Female	8	10

Table 6. Ratings of factors affecting satisfaction for all subjects.

Rating (weighted scores)	*Keywords or key phrases of items*	*Explanation by subjects*	*Category*
1 (9.07)	Modern equipment	Latest up to date and sophisticated equipment	Clinic set up
2 (8.27)	Friendly dentist	Friendly dentist, spoke politely and communicated with patients	Patient-personnel interaction
3 (8.23)	Pleasant surgery	Atmosphere in surgery clean, tidy and conducive for treatment	Clinic set up
4 (7.93)	Good quality treatment	Treatment was gentle, painless and good	Technical competency
5 (7.18)	Friendly staff	Counter and surgical staff friendly, helpful and approachable	Patient-personnel interaction
6 (6.07)	Pain alleviation	Treatment procedures, alleviates pain	Technical competency

Table 7. Ratings of factors affecting dissatisfaction for all subjects.

Rating (weighted scores)	*Keywords or key phrases of items*	*Explanation by subjects*	*Category*
1 (10.39)	Long waiting time	Had to wait a long time for treatment	Administrative efficiency
2 (7.18)	Sequence of treatment not followed	Didn't treat on a first come first service basis. Officers given treatment first	Administrative efficiency
3 (7.16)	Availability	Dentist not present when patient sought treatment	Administrative efficiency
4 (7.05)	Unfriendly staff	Counter and surgical staff uncooperative and not helpful	Patient-personnel interaction
5 (6.80)	Poor treatment	Poor quality of treatment	Technical competency
6 (5.98)	Accessibility	Limited time to seek treatment	Administrative efficiency

and sorted into four major categories. These categories include technical competency, administrative efficiency, clinic set up and patient-personnel interaction.

The technical competency category comprises factors/items such as good, gentle treatment, adequate medication, pain alleviation and satisfaction with treatment given. Among the factors/items which were cited in the administrative efficiency category were short waiting time, treated equally irrespective of rank, appointments fulfilled and access to clinic. The category of clinic set up included factors such as good equipment, air-conditioned surgery, pleasant waiting room and conducive external environment. Staff and dentist interpersonal competency with patients were grouped in the patient-personnel interaction category.

Table 6 presents the top six factors/items affecting satisfaction for all subjects in order of importance according to the weighted scores. Modern equipment (clinic set-up) was cited as most important followed by friendly dentist (patient-personnel interaction) and conducive and pleasant surgery (clinic set-up). The other factors fall into the technical competency category namely good quality treatment and pain alleviation.

A total of 15 factors/items were elicited from the 80 subjects as to what made them dissatisfied with the oral health services. The 15 factors were further interpreted and sorted into three major categories. These categories include administrative efficiency, patient-personnel interaction and technical competency.

Table 7 depicts the factors/items affecting dissatisfaction among all subjects. Long waiting time was the most important item cited for dissatisfaction. Unequal treatment among officers and other ranks were frequently mentioned regarding the sequence of treatment since on many occasions, officers were treated first although the other ranks arrived earlier for treatment. The third most important factor was non availability of the dentist followed by staff being unfriendly and restricted time for routine treatment.

Discussion

Factors affecting satisfaction

In the findings of this study regarding patient satisfaction, 'clinic set-up' was rated as the most important category

among all ranks. Patients currently have become more conscious and aware of the facilities available at the dental clinics. Since the sample was taken from NCOs who had attended the clinic within two years preceding this study, their attitude, perception and knowledge of the facilities available could play a major role in their assessment. As such, many of these NCOs gauge the conducive atmosphere of the surgery and the clinic surroundings as important factors to reduce patient anxiety. This is supported by client satisfaction studies done in Hong Kong (Schwarz and Wong, 1997) and Malaysia (Dental Services Division, 1996) where a high proportion of patients reported being satisfied with physical facilities of clinics.

Besides clinic set-up, patient-personnel interaction as exemplified by friendly dentist and staff with good communication skills, would lead to patient satisfaction. Emotional support, empathy, respect and being understanding on the part of the dentist and staff goes a long way to serve this function (Gazda *et al*.,1975; Locker,1989; Zulkifli, 1997). Moreover, as a dental team, the dentist and staff must be able to communicate with patients and show concern that their patients' problems are important and that they will listen and make genuine efforts to understand their feelings and points of view (Ingersoll, 1982).

Technical competency was the other broad category which was commonly and highly rated by all groups. They perceived that good quality service to patients can be measured in terms of good medication to alleviate pain as well as gentle and painless treatment procedures. The effect of pain during dental procedures has been emphasized in dentistry for many years and is one of the major causes of the avoidance of dental situations (Friedson and Feldman, 1958). Furthermore, Zulkifli (1997) cited that dentists must not be rough with treatment procedures to avoid traumatic experiences for patients.

Factors affecting dissatisfaction

There are several kinds of barriers standing between patient needs and effective demand for care. These may be factors producing dissatisfaction among patients who seek dental treatment. It is true that the public are usually more satisfied with the services, but some amount of discontentment and dissatisfaction does exist when patients attend clinics (Kress, 1987).

Administrative efficiency (AE) was rated as the first of the three most important catgories for patient dissatisfaction (Table 7). AE refers to how patients are received and the services offered at the clinics. The major problem cited frequently was non-availability of dentists. In the Armed Forces, the dentists roles are varied as he/she has to attend to non-clinical matters namely meetings, seminars, official functions and parades within his or her administrative unit/camp. Sometimes they have to provide relief for dentists in clinics in other camps who are on long leave and are not available. The soldiers thus are deprived of the services and go home dissatisfied and may not avail themselves at the clinic the next time around.

The other frequent complaint was the long waiting time before being called into the surgery for treatment. The NCOs are usually made to wait longer as officers are given priority although the NCOs had come earlier. A possible explanation could be that in the Malaysian Army, it is a common practice for the dentists to accord this kind of privileges to the officers of higher rank as they assume higher responsibility in the camp. This finding is similar to dentist treating the general population, as they tend to give priority and attention to the higher social class patients (Hall *et al*.,1988).

The other factor of significance mentioned by all groups was accessibility i.e. restricted time to seek treatment. Accessibility with regard to time is a common problem in utilization. Patients are not willing to take time off from work especially for routine check-ups. The fear of being labeled as malingerers are compounded especially in the critical service of the Armed Forces. This finding had also been highlighted by Didar (1996) in his study on needs and demand for dental care among MAF personnel. Similarly, in a survey on client satisfaction, involving the general population, it was noted that patients were generally dissatisfied with the long waiting time and interval between appointments (Dental Services Division, 1996).

The patient-personnel interaction category was rated as the fourth most important category (Table 7). The participants mentioned that the counter staff and surgery staff were uncooperative and not helpful. Patients are normally apprehensive and anxious when they present themselves at the clinic. Counter staff need to be courteous, friendly, polite and approachable when dealing with patients as they are the first line of contact before seeing the dentist.

Quality of treatment offered is determined by the patients. During the discussions, the participants had expressed experiences of rough treatment by the dentist. Further it was mentioned that the dentist worked in a hasty manner and they assumed that the dentist may not have done a good job. Sometimes treatments were not completed in one sitting. Among common factors contributing to patient dissatisfaction were fractured fillings, painful extraction and long healing time after extraction. Inadequate medication was also a contributory factor leading to dissatisfaction. At times, no explanations were given before and after treatment.

The armed forces oral health services can undertake the following remedial measures in order to improve the provision of oral health care. The number of dentists serving the armed forces can be increased by providing more scholarships to prospective candidates at the undergraduate level and by making the service more attractive to new graduates by improving career prospects such as the provision of more scholarships to pursue post graduate training. Provision should also be made for the three year compulsory service to be served in the army so as to attract them to join the service in future. By having more dentists the problem of non availability of dentists can be overcome especially in camps where only one dentist is stationed to serve the whole camp. Prior appointments can be given without having to give preferences according to ranks so that all patients can be given equal status regardless of their ranks.

A closer analysis of the factors causing dissatisfaction indicate that most revolve around the quality of care provided. The quality of care provided can be improved by

adopting the following measures. Periodic surveys should be conducted to assess patient satisfaction. Immediate actions should be taken to resolve any conflicts or dissatisfaction. Hence, courses on interpersonal skills should be conducted to reflect the caring profession they are in. Finally, it is recommended that auditing of the quality of services be instituted to assess the technical competency in order to ensure that quality is maintained in the provision of care.

Based on the factors mentioned above, a conceptual model was formulated to illustrate the factors affecting satisfaction/dissatisfaction in the Malaysian Armed Forces Oral Health Services. The consensus of the discussion group was to address a particular problem and does not mean that solutions have been found. The views of these respondents have been incorporated to provide a holistic view with regard to satisfaction/dissatisfaction with the services. The NGT is a highly versatile exploratory method, supplying a wealth of data on the types, differences that exist, their underlying logic and their relative importance.

In conclusion, it is recommended that a questionnaire be designed based on the proposed model to validate and reflect the entire population of the Armed Forces. Remedial measures should be taken based on these quantitative studies so as to improve the quality of services provided thereby enhancing appropriate utilization of the oral health services by the NCOs.

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