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Current Practice and Opinions of Surgical Patients and Medical Care Providers in the Day Case Unit at Salmaniya Medical Complex in Kingdom of Bahrain

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Abstract

Objective: The aim of this thesis is to provide a base- line data on which recommendations can be developed to improve the current practice and utilization of Day Case Unit (DCU) at Salmaniya Medical Complex (SMC), Bahrain. The objectives include: describing the current practices and services and exploring the factors contributing to patient's and doctors' satisfaction including their views on improvement of the health services of the unit.

Study method: A descriptive cross-sectional study. Two structured questionnaires were developed. A total of 255 subject covering doctors, nurses and patients participated in answering the questionnaires. The data were collected in June 2006. The analysis was performed using SPSS version 13. The analysis included descriptive and advanced inferential statistics.

Results: 79% of doctors and 93% of the patients were satisfied with the decisions to conduct the surgical procedure in the DCU. The overall satisfaction average was 73.7%. Patients average was the highest at 83.2%, while doctors was the lowest at only 66.7% and nurses satisfaction averaged to 71.3%. The lowest average variables were: the time of operation (patients), patients to doctors ratio (doctors & nurses) and the DCU environment in general (nurses). In patient's age (40 years or above; highest satisfaction), monthly income (BD 1,200 or more) and marital status (married) were found to have a positive effect on satisfaction. A negative effect was found with education level (illiterate; lowest satisfaction)

and frequency of visits to DCU (visited twice or more). No significant statistical difference was found to support any effect on satisfaction by gender, how patient was brought to DCU, experience and frequency of utilization.

Conclusion: The level of satisfaction currently can be improved by 26.3% in the specific satisfaction variables; the study highlighted the relationship between some influential variables on the satisfaction variables. Therefore, these relationships should be considered while developing future plans of improvement of the utilization of DCU.

Recommendations: The study suggests potential areas for improvement of utilization, including: physical expansion of DCU, updating existing instructions, reduce the waiting period for appointment, reducing the time of operation, improving the number of patients allocated to doctors, align staff to patients ratio with the international standards, and systematic review and evaluation of DCU satisfaction levels.

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List of Abbreviations

SMC: Salmaniya Medical Complex

DCU: Day Case Unit

DCS: Day Case Surgery

LPP: Limited Private Practice

GA: General Anesthesia

LA: Local Anesthesia

CHAPTER ONE

INTRODUCTION

1 Introduction

In Bahrain, the Ministry of Health is the main Government organization that is responsible for the provision of comprehensive health services for both the individual and the community. Salmaniya Medical Complex (SMC) is the largest governmental Secondary and Tertiary care Hospital in Bahrain. The number of beds in SMC was 865 beds (Health statistic. 2005) SMC a multi specialty Secondary and Tertiary Care Health Facility which provides Emergency Outpatient and Inpatient Care to all Citizens and Residents of Bahrain. SMC has extensive outpatient services. Specialties include medicine, surgery, orthopedics, plastic surgery/burns, paediatrics, obstetrics/gynecology, ear, nose and throat surgery, ophthalmology, oral surgery and intensive care as well as day cases unit (DCU).

Day-case surgery has become an important component in the provision of surgical care in most countries (Ahmed, M., Zafar, A., Griffin, S., Ahmed, S., Orakzai, N., & Fayyaz, F. 2003) of the world, including Western countries, Asia and the Middle East.

There is no nationally agreed definition of day-case surgery. However, the National Health Data Dictionary defines a same-day patient as one 'who is admitted and separates on the same day' (National Health Dictionary.1997). Day surgery is a planned non-resident investigation or operation that involves some form of anesthesia and requires special recovery facilities (Otte, D.1996)

Outpatients and accident and emergency department patients are excluded from this definition of day surgery (Ahmed,M. etal. 2003).

In Bahrain at SMC, DCU was officially opened and started operating in December, 1978. It caters to Day case elective minor surgeries with a total bed capacity of 18 beds divided into 3 general cubicles of 5 beds to each cubicle, 1 cubicle for female patients, 1 cubicle for male and 1 for pediatric cases. It has 2 single rooms, 1 room (of 1 bed), and another with 2 beds used for isolation or psychiatric and police cases, or otherwise to be utilized for general cases.

The ward is open daily , from 6:30 am to 10:00 pm , operating in two shifts; the schedules of which are 6:30-2:30 pm (morning shift)and 2:00-10:00pm (evening shift).The morning shift SAT-WED is mainly for elective day surgery procedures, General Surgery (Pediatrics & Adult), Gynecology , Orthopedics , Urology , ENT, Plastic, Vascular and Dental Surgery cases .

In the afternoon or evening shift, it caters to 3 categories of patients which are the following:

- 1- Medical cases booked from medical clinic for patients who receive intravenous treatment of injections, e.g. Remicade (for arthritis, skin and gastroenterology cases) and for IV Injection of Methyl-Prednisolone (for neuro and endocrinology cases).
- 2- Emergency cases from Accident and Emergency such as abscess, fractures, cut wounds that can be discharged after surgery, other cases that need observation for few hours and can be discharged later.

3- Limited private practice cases (LPP) from 1:00PM onwards, DCU also cater to LPP from SMC and private clinics outside SMC for minor surgery. The staffing and health care provided for such cases are arranged by the main operation theater as LPP hours and patients are discharged before 10:00pm.

From 1978 till 2000, the booking was done manually in DCU, but since year 2000, a central booking system via the appointment desk is done through the computer. Each consultant has scheduled operating days; the patients are seen in the clinics where the doctor advises surgery, the procedure is explained to the patient and consent form and a request form for surgery is filled up and signed by the surgeon and the patient. Blood investigation, ECG, radiological investigations are then requested and done before the surgery.

The patient is then advised to take an appointment from the main appointment desk where the date of surgery is given along with a printed computerized paper stating the date of the operation and the name of the consultant.

After obtaining the appointment date, the patient is instructed to go to DCU to give the paper (consent and appointment for surgery form) to the staff and then the patient is given written and verbal instructions on the preparation before the surgery.

The patient reports to DCU on the day of surgery at 7:00 am, the anesthetist will see and examine whether the patient is fit for general anesthesia (GA) or not, and advised pre-medication accordingly. If

the patient is not fit for GA he/she will be referred back to the clinic for further investigation and assessment, while all patients for local anesthesia are accepted.

There are three parties involved in the DCU operations. They are:

- Medical care providers including:
 - doctors
 - and nurse
- Patients

The doctors decide on performing the operation at the DCU. Nurses are the facilitators of this process and they are the direct care provider. The third party is the patients who are subject to the surgery and benefits from the services.

One of the observations of the current situation is that sometimes conflicts and disagreements between doctors and nurses occur. This is a result of the lack of information on the policies and procedures applied from doctors' side.

On average, the admission number of patients to DCU was in 2005 to be 28. The total number of staff in the morning shift is four while the remaining staff will be second shift or on leave.

CHAPTER TWO

LITREATURE REVIEW

2 Literature Review

In a recent retrospective study (2007) conducted at Ibn Al Nafees private hospital in Bahrain, 300 patients as day case and short stay surgery in urology over a period of 3 years from 2003 to 2006 had undergone various minor, intermediate and a few with major operations or procedures. The study concluded that day case and short stay are feasible and cost effective. It has also been revealed that these procedures are easy to apply in a planned private setting as well as in major hospitals especially with a view to ease bed shortage and expensive medical services (Durazi, M.H., Al-Bareeq, R., & Osman, M. 2007). A survey conducted in New Zealand (1990) on 211 DCU patients showed that the level of patient's satisfaction was high and increased with age. 47% of adult patients rated their experience as excellent, 74% reported no personal disadvantage of day surgery. The most common advantages were minimal disruption to their lifestyle and that of their family, and avoidance of an overnight stay (Read, D.1990). A study in UK (1992) on 150 patients following day case cataract surgery showed that 87% of the patients would choose day surgery again (Davies, B., & Tyers, A.G.1992). A survey of patient's satisfaction following day surgery and an assessment of the level of contact between patients and community services was done in a Newport, UK (1994). Total of 953 patients were provided with a self-completion questionnaire after day surgery, Overall satisfaction following day surgery was very high. (Ghosh,S.,& Sallam,S.1994). A study conducted on patient satisfaction and outcome in Scotland day surgery during the year (1999), 5069 patients were selected from 13 hospitals in six health

board areas in Scotland. The patients were asked to complete a questionnaire to evaluate their satisfaction with care in a range of specific procedures. An overall of 85% suggested that the satisfaction with day case surgery (DCS) was high (Bain, J., Kelly, H., Snadden, D., & Staines, H. 1999)

A study in the Department of Surgery, Centre Alexis France (2000) aimed to evaluate patient information provided; the management of post-operative symptoms and post-operative care, and patient satisfaction with ambulatory breast surgery over 1-year period. The study found that the mean overall satisfaction score was 8.97 on a scale of 1-10. Post-operative information provided by the surgeon before discharge from the hospital was 8.90 while information provided by the nurse was 9.33. The result suggested that ambulatory surgery for breast cancer patients is safe and popular with patients. However, post-operative pain presented a problem (Marchal, F., Dravet, F., Classe, J.M., Campion, L., Francois, T., Labbe, D., Robard, S., Theare, J.L. & Pioud. 2005)

A Study in St Mary's Hospital, London, UK (2002) was conducted to evaluate the safety, efficacy and acceptability to patients of day-case septorhinoplasty. The result showed that the great majority of patients were satisfied with the day-case setting (satisfaction score 81%). This preliminary study showed that day surgery septorhinoplasty was acceptable to the patient and was associated with a very low re-admission rate (Georgalas, C., Paun, S., Zainal, A., Nimesh, N.P. & Mochloulis, G. 2002). A study in Spain (2003) was conducted to find out the level of quality perceived in surgical

treatment in a program of day surgery. It was found that general satisfaction of the patients treated in the day-surgery program was high, 9.1 (range 0-10) 89% patients would recommend this type of treatment to their parents or friends and 84 % would repeat the same experience in the surgery unit (Duran, G. A., Durantez, D. F., Robles, M.J., Lopez., Becerra, A., Mazuez, M. & Ferreras, D.I. 2003).

A prospective study was carried in UK (2004) to assess the feasibility of performing true day-case laparoscopic surgery in a district general hospital. 357 patients admitted for laparoscopic cholecystectomy over a 24-month period were selected; all patients were contacted by telephone on the day after discharge. The result shows that Eighty-two (92.1%) of 89 patients were either satisfied or very satisfied with the day-case procedure. (Leeder, P.C., Matthews, T., Krzeminska, K. & Dehn, T.C.B. 2004).

A study about patients' satisfaction in DCU was conducted in New South Wales public hospital (Australia), in (1991) on 150 patients. The result showed that the day case surgery (DCS) was generally accepted by all respondents, 79% would recommend day surgery to others and 94% would recommend the day case surgery unit that they used. The study findings suggested that patients find DCS a satisfactory, convenient and safe alternative to in-patient care (O'Connor, S.J., Gibberd, R.W. & West, P. 1991).

A study in Denmark (1996) was carried out on a selected group of 199 patients, hospitalized as day surgery patients in order to evaluate day surgery from the consumer's point of view. The result showed that 71% of the patients found day surgery acceptable and

a good alternative to conventional hospitalization 160 patients were discharged as planned, 77% of them with no serious complications, provided that patients are carefully selected. The researches found day surgery a highly satisfactory method of management which is safe and efficient (Nielsen, T.R., Nilsen, B.V. & Jorgensen, p.b. 1996).

A Telephone survey of day-surgery eye patients was carried out in Harold Wood Hospital, England in (1997). The objective of this research study was to evaluate the nursing care processes and patient's satisfaction with the new day-surgery services. 45 adult day-surgery eye patients were selected at random to take part in a telephone survey. The research result found that the majority of the patients were satisfied with the day-surgery services. The main problems experienced by patients were long waiting times to see the doctor during pre-operation assessment, unsatisfactory journeys to and from the theatre, and difficulty in remembering verbal advice. Twenty-eight (73%) of the day-surgery patients would prefer day-surgery again for a similar operation, but 10 (26%) would prefer a longer stay in hospital (Law, M.L. 1997).

Balatt A and Chen S (2003) from Australia studied the introduction of Day-only laparoscopic cholecystectomy in a regional teaching hospital the authors found that 24 (78%) were satisfied with their length of stay but not always with the quality of care they received during the day-stay (Blatt A, Chen, S. 2003).

In (2003) a study conducted by the audit department at Ayub teaching hospital, Abbottabad (Pakistan) on patients' satisfaction

after adult DCS, 122 patients were asked about their satisfaction with DCS and some other questions related to the DCU area. The result showed that 40% of patients were satisfied while 60% were not satisfied with DCS. The study found that a large number of patients were satisfied with some areas of DCU, but overall satisfaction was poor (Ahmed, M. et al. 2003).

A study carried out in Finland (1991) on 100 patients at DCU found the satisfaction before surgery was positive in 74%, as compared to 6% of the patients. Based on their experiences from surgery, patients' satisfaction improved by 59%, (Harju, E. 1991). Outcomes were measured for 6000 consecutive procedures after day-care surgery in a major teaching hospital day surgery unit in Australia (1993). It was found that 99% were satisfied with the day surgery service. The study suggested that Day surgery can provide satisfactory outcome, with low complication rates, high patient acceptance and low community support requirements after patient's discharge (Osborne, G.A. & Rudkin, G.E. 1993).

A survey on patient satisfaction after day case surgery was conducted by Wong LS, Kaukuntla H.K. in (1999) at UK. 189 patients were recruited into the study; the research result found that most of the patients believed the information given to them before surgery was adequate and the standard of care in the day unit was high (Wong LS, Kaukuntla, H.K., Lam, F.T., & Fraser I.A. 1999).

In London, (1992) a study was conducted on 240 consultants to examine general surgeons' views of day surgery with particular

reference to a day case inguinal hernia repair, 44 per cent held positive attitudes towards this form of treatment and 45 per cent were not interested, with attitudes varying according to age and region. Major constraints perceived by those with positive attitudes were the lack of facilities at a hospital level and problems of community services. Negative attitudes were associated with concerns about post-operative complications and pain, and assumptions about patients' preferences (Morgan, M., Beech, Roynolds, A., Swan, A.V. & Devlin, H.B. 1992).

In Manchester (1993) a study on patients' views on oral day surgery was conducted. A total sample of 200 patients who had undergone care in a 3 months period was chosen. A total of 80% of patients rated their overall experience of oral day surgery as excellent or good (Greenwood, M. 1993).

In (1991), a survey was undertaken jointly by medical and nursing administration at Sir Charles Gairdner hospital in Perth, Western Australia. The objective of the study was to verify difficulties in doctor-nurse communication as perceived by doctors and nurses. Questionnaire responses revealed some impediments in the flow of communication. Both nurses and doctors perceived fewer frequencies of difficulties in communicating with members of their own professional group than with members of the other group. Nurses with university preparation and other special clinical qualifications perceived significantly fewer communication problems with doctors than nurses with a lower level of education. Interns perceived greater frequency in difficulty communicating with nurses than did more highly qualified doctors, and female doctors who were

not interns claimed fewer problems than their male counterparts did. Moreover, more highly qualified male doctors who had a previous occupation acknowledged fewer doctor-nurse communication problems (Mackay, R.C., Matsuno, K. & Muligan, J. 1991).

The increase in the utilization Day Surgeries in the U.S.A., U.K., Australia and other western countries demonstrated many advantages and has resulted in a change of thinking, where day surgery is considered the norm rather than inpatient surgery when elective surgery is planned.

Eight years ago, the duration of hospital stay in Canberra was reduced resulting in an expansion in day case surgery which currently accounts for 50% of elective operations (Department of Health and Aged. 1999) performed as day cases.

3 Importance of the Research Subject

In all service-providing organizations, it is vital to measure client perceptions and opinions along with satisfaction as a major key performance indicator of patient and medical care provider.

In SMC, patient opinion and satisfaction is an essential key performance indicator. Measuring this satisfaction will help in improving the quality of current service.

As a result of measuring the satisfaction and improving the quality of the services, the vision of the Ministry of Health will be accomplished.

The vision is that: *The Ministry of Health works in partnership with stakeholders to improve the health of the population of Bahrain and ensure that everyone has access to a high quality, responsive health service throughout their lifetime (Bahrain Health Strategy 2004).*

In addition, this research is considered to be the first attempt of its kind to provide insight into the DCU services, satisfaction and area that need improvement in Bahrain.

4 Problem Statement

There is no prior effort to estimate the level of satisfaction in DCU. Also, frequent complaints from DCU users are expressed verbally to the DCU supervisors. In addition, DCU supervisor observes during daily duty hours at SMC that, the current utilization of DCU might be perceived to be less than optimal in terms of capacity, types of admission, booking system, process and procedure and patients satisfaction. Therefore, there is a need to evaluate and assess the current situation in terms of effectiveness of the unit, and to determine the potential areas for improvements.

4.1 Research Questions

- ❖ What is the current utilization level of DCU services?
- ❖ What are the perceptions and opinion of the patient's about the DCU in term of its patient oriented goals?
- ❖ What are the opinions of the staff doctors/nurses about the utilization and possible change that can be made to improve the utilization of DCU?
- ❖ What possible change can be considered in order to improve the current utilization of DCU?
- ❖ Which factors affect patients, doctors, and nursing staff's satisfaction?

4.2 Objectives

1. To describe and assess the current situation of DCU in SMC through the opinions and perception of doctors, nursing staff and patients with a view to determine the potential areas for improvement.
2. To describe the current satisfaction level of DCU patients and health care providers in SMC.
3. To identify the factors that contributes to patients and health care providers' satisfaction in DCU, SMC.
4. To explore patients and health care providers' opinion on possible area for improvement to the DCU.

4.3 Aim

To establish a baseline data on the utilization of the DCU at SMC this could help in developing a future policy for optimum utilization of DCU.

4.4 Hypotheses

The current utilization of the DCU is not optimal and staff doctors and nurses' opinions will suggest that there is room for improvement.

CHAPTER THREE

METHODOLOGY

5 Methodology

5.1 Definition of Day Case Unit

For the purpose of this study, the definition of National Health Data Dictionary was used to define DCU, where a same-day patient as one 'who is admitted and separates on the same day' (National Health Dictionary.1997). Day surgery is a planned non-resident investigation or operation that involves some form of anesthesia and requires special recovery facilities (Otta, D.1996). Outpatients and accident and emergency department patients are excluded from this definition of day surgery (Ahmed,M. etal. 2003).

5.2 Setting

Day case unit on the first floor at SMC was chosen for the implementation of this study.

5.3 Research Design

The study is a descriptive cross-sectional study. The patients in DCU at SMC are divided into four groups:

1. **Pediatric DCU:** Located on the third the level pediatrics wards cover only children with sickle cell disease and other blood disease patients who attend only for blood and plasma transfusion.

2. **Endoscopies DCU:** located on the third level and under the main operation theater. It covers patients for Gastro-scope and colonoscopy under sedation only.
3. **Eye DCU:** Located on the six the level. It covers patients with eye surgeries (recently opened, around four months ago therefore, no data is available yet).
4. **Main DCU:** This is located on the first floor of SMC hospital and covers all types of surgeries including patients under general anesthesia for Gasteroscopy and colonoscopy but excludes eye *surgeries*.

Pediatric DCU is not relevant to this study since it provides medical care therefore its services are different. In comparison, SMC DCU is a surgical care. Eye DCU was opened in 2006 and the Ministry produces statistics after at least one year. Therefore, there was no data available. In addition, Day Case Endoscopies (DCE) in 2004 received 1537 patients (Health statistic. 2004).

In this study, the DCU located on the first level of SMC was chosen because it covers all types of surgeries and has not been studied before. It includes the highest number of patients (Table 1).

Table 1: Monthly number of patients who attended DCU located on the first level by department - 2004.

2004 Statistic	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	%
General Surgery	90	81	97	96	91	89	125	102	106	98	85	91	1,151	21.7
Plastic	25	19	22	18	18	34	36	32	25	28	22	16	295	5.6
Orthop- edics	101	94	121	117	130	152	141	138	126	118	99	109	1,446	27.3
Urology	63	49	79	69	88	91	96	93	77	76	66	81	928	17.5
Pediatric	67	55	55	59	60	66	46	62	54	65	43	44	676	12.8
Neuro Vascular	4	6	8	5	1	3	6	3	6	8	2	6	58	1.1
Dental	32	28	40	32	41	42	47	61	37	38	28	37	463	8.7
ENT	5	8	5	5	2	9	17	23	15	17	12	4	122	2.3
Gynae	18	13	15	20	18	25	8	6	5	6	4	17	155	2.9
Total	405	353	442	421	449	511	522	520	451	454	361	405	5,294	100.0
%	7.7	6.7	8.3	8.0	8.5	9.7	9.9	9.8	8.5	8.6	6.8	7.7		

5.4 Study Population

5.4.1 Inclusion Criteria

- a. All patients admitted to DCU, regardless of their nationality (Bahraini or non Bahraini).
- b. Male and Female patients.
- c. Adults (age 18 and older) since adults are legally responsible for their decision.
- d. All patients undergoing general and local anesthesia including sedation and iv-block.

5.4.2 Exclusion Criteria

- a. Deaf, dumb or psychiatric patients because of difficulty in communication.
- b. Patients who developed any complication, which required admission post operatively. They tend to suffer pain and will be under pain killer medication effect. Therefore, there are not willing to participate or express their opinion freely and comfortably. In addition, usually they do not return to DCU after the surgery. Instead they are directly admitted from recovery room.
- c. All patients admitted to DCU during afternoon (Accidents & Emergency, medical or LPP). The focus was on admitted patients who have attended by a level of choice. However, only afternoon patients are referred to.
- d. Subject under the age of 18 years is not included such patients, they are not direct users of DCU services and they are unlikely to understand the questions clearly.

5.5 Sampling

Sample size: A - (patient): According to the advice of the statistician at AGU, the technique of sampling most appropriate to the research subject is convenience sample which is a non-probability sample in comparison to the other random sampling techniques. It consists of patients attending the unit based on the inclusion criteria mentioned above.

Sample size: B - (doctors/nurses): All the doctors /nurses who are using DCU, 31 doctors and 8 nurses respectively who are working at DCU excluding those on leave.

5.6 Data Collection

The data was collected through questionnaires (Appendix 1+2) after obtaining written permission from Salmaniya Medical Complex administration. The patients' consent was taken verbally and the auditors were witnesses. The questionnaire was filled under anonymity, i.e. the respondents were not known.

The respondents did not receive any monetary rewards or direct benefits for their participation in the study. Also, there were no harmful effects and participant had the full freedom and right to withdraw at any time without risk. This was maintained to minimize the bias. The questionnaire could be procured from the auditors and the participant after confirming his/her participation willingness to participate was provided a copy to be filled on a face-to-face basis. All documents were collected from the auditors by the researcher and kept in a private locker.

Patient data was collected through a direct interview to ensure the understanding of the question of the structured questionnaire.

The data from the medical care provider was collected through self administration as all of them were well educated and reasonably familiar with the medical terms used.

The two questionnaires consisted of three parts and they are as follows:

1. Demographic data.
2. Patient or medical care provider's opinion on the current situation.
3. Patients and medical provider recommendations. This last question covers the recommendations to improve the level of patient's satisfaction.

Patient satisfaction variables were as follows:

- Medical Care: It covers the workplace status, treatment, services and care received by the patient from the DCU nurses and doctors, such as: cleanliness of the place, explanation of the procedures, administration of medicine at suitable time and the response to call.
- The appointment time: It concerns with the general impression about the appointment in terms of the manner and the period.
- The unit: It deals with the aspects related to the physical environment and the noise, temperature, privacy, entertainment, care of companions and the waiting time.
- Leaving the unit and going home: the general impression about administration procedure and instruction given whilst leaving the unit.

- General impression about quality of care given in the unit.

Medical care provider satisfaction variable were as follows:

- Communication between doctors and nurses.
- Appointment system: The aspects of the appointment systems addressed were: time, booking system, process and procedure and the period.
- Allocation of patient number assigned to doctors.
- Instructions given to the patients: It has covered the instructions given pre and post operative, as well as, any other specific instructions.
- Follow up appointment.
- DCU: This variable covers the physical aspects including: place/location, size, accessibility, bed capacity and staff to patient ratio.
- Time and opportunity to discuss patients/client problem with other nurse. This was a question to nurse only.

The prior mentioned variables were designed in order to verify the objective of evaluating and assessing the current situation which will lead to determine the areas that require improvement.

The study subjects were asked to provide their opinion on the current practices at DCU. These responses reflect their evaluation and opinion on a scale of 5 levels of satisfaction. Another type of question was direct in finding and reporting the subjects' opinion and evaluation of the satisfaction by a closed ended question. Both cover the satisfaction and provide the base of further analysis.

5.7 Timing of the Study

The study was carried out during the month of June, 2006 because there is no special occasions or holidays during that month (Table 2).

Table 2: Number of patients who attended DCU in June – 2002 to 2005

Year	June
2002	541
2003	423
2004	511
2005	432
2006	464

5.8 Reliability and Validity of Questionnaire:

The internal reliability of the scale questions was assessed by computing Alpha Cronbach measurement. Usually, any value of Alpha Cronbach more than 70% is accepted as reliable measure (SPSS technical report, "How to get more value from your survey data". 2003). Alpha Cronbach values for this study were 96%, 88% and 72% for patients, doctors and nurses respectively. Therefore, the questionnaire is accepted as reliable.

To ensure the content validity, the questionnaire was developed in English and thereafter translated into Arabic. A workshop was conducted for SMC auditing committee to ensure accuracy of data collection.

Face validity was ensured by reviewing all questions in the questionnaire and their relevance to the research objectives.

5.9 Pilot Study

The pilot study was conducted on 20 patients, the purpose of which is to test the instrument itself and make necessary changes. The demographic aspect of the questionnaire was modified to be more representative of the subject's status. The female subjects when asked about their income and if they are not working, the husband's income was reported.

In addition, the researcher added an open question to find out recommendations for improvement suggested by the subjects.

CHAPTER FOUR

RESULTS

5.10 Data Analysis

The statistical package SPSS version 13 was used in analyzing the sample data.

The data was entered in SPSS for the three questionnaires distributed among: doctors, nurses and patients.

The three main stages in the analysis are:

- Descriptive
- Grouping and averaging
- Inferential

In the first stage, the results produced are a description of the sample. This includes describing the sample using percentages and central tendency and dispersion measurements.

Then the data was prepared for drawing conclusions. In the second stage, the data was grouped by computing the average to produce factors of satisfaction.

The third stage of the analysis draws conclusions and inferences about the sample. It generalizes the conclusions on the population under study based on the results of the statistical techniques.

6 Results

6.1 Response Rate & Sample Characteristics

The total sample was 255 subjects. Patient respondents were 220, while the doctor respondents were 28 and nursing respondents were 7. Therefore, the response rate was 87% and 70%, for doctors and nurses respectively.

The total population of patients who attended DCU in June 2006 was 464 (taken from the statistics obtained from 2006). The convenience sample of patients would represent 54% as a response rate; however, this is not precise since the sample exclusion criterion excludes a portion of patients. Table 1 showed that the pediatric patients represent 13% (66 out of 511). So, the response rate after excluding the pediatric patients would reach 60%. The exclusion criteria excluded other categories such as deaf patients since there is no available data to exclude them, the percentage would be higher.

Doctors' response rate was calculated by dividing the number of doctor respondents by a total of 31 doctors. Similarly, nurses' response rate was calculated in comparison to a total of 8 nurses.

The sample distribution based on type of respondents, according to gender and age is shown in Table 3. The calculation was adjusted for missing responses. Nine subjects refused to reveal their age, therefore, their age group was not identified in Table3.

Two different questionnaires were employed: one for patients sample and the other one targeted both doctors and nurses samples. The majority of the respondents (86%) were patients and the remaining 14% were doctors and nurses (doctors were 27 and nurses 7). Most (61%) of the respondents included in the study studied were males.

Patients and medical care providers indicated age in three age categories: 20 to 30, 31 to 40 and above 40 years, as shown in Table 3.

The distribution of age of the total sample was as follows: 61% were aged between 20 to 40 years and 39% were 40 years or older.

Table 3: Distributions of samples by gender and age

Variables		Type of respondent							
		Doctors		Nurses		Patients		Total	
		No.	%	No.	%	No.	%	No.	%
Gender	Male	21	77.8%	0	.0%	133	61.0%	154	61.4%
	Female	6	22.2%	7	100.0%	85	39.0%	97	38.6%
	Total	27	100.0%	7	100.0%	218	100.0%	251	100.0%
Age groups	20-30	1	3.7%	1	14.3%	71	33.5%	73	29.7%
	31-40	8	29.6%	3	42.9%	66	31.1%	77	31.3%
	Above 40	18	66.7%	3	42.9%	75	35.4%	96	39.0%
	Total	27*	100.0%	7	100.0%	212**	100.0%	246	100.0%

* Missing values of 1 doctor did not provide his age, ** 8 patients (did not agree to provide their age)

In the following sections, the distribution of gender and age groups by each respondent category is presented.

6.2 Socio-demographic Characteristics

6.2.1 Socio-demographic Characteristics for Patients

All variables in the patients' questionnaire were analyzed.

In this section, the distribution of patients through several socio-demographic variables has been included. They are categorized as follows: gender, age, nationality, marital status, number of children, education level, monthly salary, source of patients coming to DCU and pattern of attending.

Table 3 shows that most of the patients were males (61%) and female represented only 39%.

Table 4 shows the distribution of patients according to several socio-demographic variables.

Table 4: Distribution of Patients by socio-demographic variables

Variables		Frequency	Percent
Nationality	Bahraini	203	92.3
	Non-Bahraini	17	7.7
	Total	220	100.0
Marital status	Single	64	29.1
	Married	144	65.5
	Divorced	8	3.6
	Widow	4	1.8
	Total	220	100.0
Having or not having children	Yes	139	70.6
	No	58	29.4
	Total ¹	197	100.0
Education level	Illiterate	9	4.2
	Know how to read & write	6	2.8
	Primary level	3	1.4
	Preparatory level	26	12.1
	Secondary level	72	32.5
	Post secondary diploma	31	14.4
	University level	59	27.4
	Postgraduate studies	9	4.2
	Total ²	215	100.0
Salary group (BD)	100-<300	58	29.1
	300-<600	82	41.2
	600-<900	39	19.6
	900-<1200	11	5.5
	More than 1200	9	4.5
	Total ³	199	100.0
Source of patients coming to DCU	General clinic (morning)	87	40.1
	Private clinic (evening)	60	27.6
	A/E	29	13.4
	Health center	41	18.9
	Total ⁴	217	100.0
First Visit to DCU	Yes	161	73.2
	No	59	26.8
	Total	220	100.0

No response: 1= 23 patients; 2= 5 patients; 3= 21 patients; 4= 3 patients

The questionnaire requested patients to indicate their year of birth. This variable was used to calculate the average age of the patients. The results show that the mean patient age was 36.7 years and the standard deviation (SD) was 11.19. Therefore, the patients were middle aged.

Table 4 shows that 92% of the patients were Bahrainis. Also, the table indicates that 66% of patients were married, while the remaining 35% were unmarried.

Almost two thirds (71%) of the patients had at least one child, while one third (29.4%) did not have any.

In addition, the table show that 63.2% of patients have has an education qualification lower than the university education, while university or above represented 32%, however 4% were illiterate.

Further, the table shows that 60.2% of patients have a monthly income between BD 100 to less than BD 600, while almost one quarter (25.1%) of them received a monthly salary between BD 600 to less than 1200, and only 5% are from the income group of those who earn more than BD 1200.

The table shows that almost 40% of the patients come from general clinic, 28% from private clinic, 13% from accident and emergency and the remaining 19% come from various health centers. Also, the table shows that 73% of the patients are attending DCU for the first time, at DCU whereas 27% had visited the unit before.

6.2.2 Socio-demographic Characteristics for Doctors

All variables in the doctor's questionnaire were analyzed. In this section, the socio-demographic variables results are shown, as follows.

Table 3 shows that more than 66.7% of the doctors aged above 40 years, 33.3 % aged between 20 to 40 years.

Table 5 shows that the doctors sample consists of 27 Bahraini consultants in total, 21 (77.8%) of them were male and 6 (22.2%) were female.

Table 5: Distribution of doctors by nationality

Variable		Frequency	Percent
Nationality	Bahraini	21	77.8
	Non-Bahraini	6	22.2
	Total	27	100

Table 6 shows that the majority (75%) of doctors had more than 15 years of experience. This reflects that they are at the level of consultants. 14.3% of them accumulate 11 to 14 years experience, followed by 7.1% with 6 to 10 years and 3.6% with less than 5 years of experience.

Table 6: Distribution of doctors by experience

	Frequency	Percent
0 -5	1	3.6
6 - 10	2	7.1
11 - 14	4	14.3
More than 15 years	21	75.0
Total	28	100.0

Table 7 shows that the majority (82%) of doctors utilizes the DCU (on a written schedule) twice a week and the remaining 19% scheduled it only once a week.

Table 7: How often do you utilize the DCU?

		Frequency	Percent	Valid Percent
Valid	Once a week	5	17.9	18.5
	Twice a week	22	78.6	81.5
	Total	27	96.4	100.0
Missing		1	3.6	
Total		28	100.0	

6.2.3 Socio-demographic Characteristics for Nurses

In this section, the distribution of socio-demographic variables for nurses is presented.

Table 3 indicates that the sample consists of seven nurses and all were female. Also, the table shows that slightly more than half of the nurses (57.2%) are aged between 20 to 40 years and 43 % of them were older than 40 years.

Table 8 shows that more than half (57.1%) of the nurses had more than 15 years of experience at DCU. The remaining had an experience of 6 to 10 or between and 11 to less than 15 years, which represents 28.6% and 14.3%, respectively.

Table 8: Distribution of nurses by experience

Variable		Frequency	Percent
Experience (years)	6-10	2	28.6
	11-<15	1	14.3
	More than 15 years	4	57.1
	Total	7	100

6.2.4 General Level of Satisfaction on Decision to Perform the Operation in the DCU

223 out of 245 were from doctors and patients sample were satisfied with regard to the doctors' decision to perform the operation in the DCU. Therefore, the majority (91%) were satisfied with the doctor's decision to perform the operation in the unit, while only 9% were dissatisfied. Table 9 reveals that patients represented the highest percentage (91%) doctors themselves represented only (82%) nurses' questionnaire did not include this question since they are not part of the operation. They are in the middle of the process; the main parts being the doctor who is the health care provider and the patient receive of the care. Doctors and patients are the provider and user of the operation and nurses are the facilitators. If they were to be included asked, it would just be a repetition.

Table 9: Percentage of satisfaction among doctors and patients

Satisfied person		No.	Total	%
Doctors	Are you satisfied with your decision of performing the operation in the Unit?	22	27	81.5
Patients	Are you satisfied with doctor's decision of performing the operation in the Unit?	201	220	91

Nurses' opinion was observed in other satisfaction variables as shown in the sections that follow.

In the sections that follow, the results on the various opinion questions are presented.

6.2.5 Patients' Satisfaction Results

Appendix 3 includes three tables that show the results of patients, doctors and nurses' response to all satisfaction variables, for the five levels ranging from 'very poor', 'poor', 'good', 'very good' and 'excellent'.

These five levels were combined to represent two levels only. The three happy or satisfied groups represented one level, in comparison to the two unhappy or unsatisfied levels, which represented the second level. These results are shown in the following pages.

Table 10 describes the distribution of patients' satisfaction based on several satisfaction categories for the five response levels: very poor, poor, good, very good and excellent.

The table indicates the number of patients in each level and the corresponding percentage.

Table 10: Patients' satisfaction variable with average of combined levels

Patients Satisfaction Variable	Very poor and poor		Good, very good and excellent	
	No.	%	No.	%
Medical care				
Cleanliness	84	9.1	136.0	90.9
The sign posting to the specific areas	111	21.4	109.0	78.6
Officials hospitable reception ¹	68	7.8	150.0	92.2
Explanation of the procedures and declaring the next steps of medication with information given to you continually ²	73	14.2	146.0	85.8
Taking personal care of your case ²	64	10.5	155.0	89.5
Giving medicine at suitable time ³	62	11.7	143.0	88.3
Sisters response to calls ²	67	6.4	152.0	93.6
The way you are prepared to bear the operation pain ⁴	86	18	131.0	82
The effectiveness of sedatives ³	74	7.3	131.0	92.7
The care level in general ⁴	78	8.3	139.0	91.7
<i>Average</i>		11.5		88.5
The time of operation				
General impression about the appointments ¹	137	32.6	81.0	67.4
The way you take the appointment	131	28.2	89.0	71.8
The period given to you before the time of your operation ¹	135	40.8	83.0	59.2
<i>Average</i>		33.9		66.1
The unit				
The period you wait from the time of your arrival till you are called by sisters ⁴	100	19.8	117.0	80.2
The waiting area in general ¹	132	23.4	86.0	76.6
The signposting	106	20	114.0	80
The means of entertainment ⁵	126	31.3	88.0	68.7
The privacy level ⁶	107	19.4	109.0	80.6
The noise level ⁷	118	27.4	94.0	72.6
Temperature control ⁵	97	15.4	117.0	84.6
Period of waiting before operation ²	140	31.1	79.0	68.9
The room shape (the bed) ²	138	26.5	81.0	73.5
Taking care of companions ⁹	93	16.7	117.0	83.3
Officials' hospitality and cheerfulness ²	73	11.4	146.0	88.6
<i>Average</i>		22.0		78.0
Leaving the unit and going home				
Help in preparing for departure ⁶	84	11.6	132.0	88.4
Instructions for future care ⁷	75	11.8	137.0	88.2
Did you receive the prescription which you will take home before the departure time? ¹⁰	49	7.7	160.0	92.3
Were you given the instructions for taking the follow-up appointment with your doctor? ⁹	51	7.1	159.0	92.9
Were you given enough information during your departure? ¹¹	66	9.5	145.0	90.5
Your general impression about the administrative procedure while leaving the hospital ¹²	77	9.4	136.0	90.6
<i>Average</i>		9.5		90.5
Your general evaluation about the quality of the medical care given in the Day Cay Unit¹	72	7.3	146	92.7

1: no response of 2 patients; 2: 1 patient; 3: 15 patients; 4: 3 patients; 5: 6 patients; 6: 4 patients; 7: 8 patients; 9: 10 patients; 10: 11 patients; 11: 9 patients; 12: 7 patients

Medical Care

There were 10 criteria included in this section. When 'good', 'very good' and 'excellent' levels are combined together, the statement percentages ranged from 78.6 % to 93.6% (refer to Table 10). On the other hand, when the remaining levels of 'very poor' and 'poor' were combined, the percentages ranged from 6.4% to 21.4% as shown in Table 10. The lowest satisfaction percentage was attributed to the criteria of signposting to the specific areas; whereas, the highest rated satisfaction level was 'sister's response to call'. The average percentage for the 10 categories was 11.5% and 88.5% for the combined group of unhappy and happy patients, respectively. This implies that, on average, more patients are happy with medical care they received

The Time of Operation

In this section, there were three categories evaluated by patients. When combining the two satisfaction levels of 'very poor and 'poor', the percentages ranged from 28.2% to 40.8% (refer to Table 10). While the combined percentages of the other three levels show that the range is from 59.2% to 71.8%, as shown in table 10. The lowest level of satisfaction was recorded for the criteria 'the period given to you before the time of operation'; while the highest rated statement was 'their impression about the appointment'. In addition, the average was 33.9% and 66.1% for combined group of unhappy and happy patient, respectively. This implies that patients tend to express high level of satisfaction toward the time of operation.

The Unit

There were 11 categories evaluated in this part of the questionnaire. Table 10 shows that when combining the three satisfaction levels of 'good', 'very good' and 'excellent' together, the results showed that the range was from 68.7% and 88.6%, as shown in table 10. However, the remaining unsatisfied levels when combined show that the percentages fall in the range between 11.4% and 31.3%. The category that rate the lowest level of satisfaction was 'the means of entertainment', while the highest was 'official hospitality and cheerfulness'. In addition, the average was 22% and 78% for unhappy and happy patient, respectively. This implies that the patients, on average, were happier with the unit's physical environment, waiting time and official hospitality.

Leaving the Unit and Going Home

There were 6 statements that patients evaluated concerning leaving the unit and going home. The dissatisfaction levels when combined together showed that the percentages ranged from 7.1% to 11.8%, while the satisfied groups combined together showed that the range was from 88.2% to 92.9% (Table 10).

The criteria that rate the lowest level of satisfaction was 'instruction for future care', while the highest rated statement was the one pertaining to follow up the instruction for appointment with the doctor'. In addition, the average was between 9.5% and 90.5% for unhappy and happy patients, respectively. This implies that patients tend to be happier with the instructions and information received before departure.

General Evaluation of the Quality of Medical Care at DCU

Table 10 results reveal that around one-third of patients (33%) evaluated the quality of medical care at the DCU as 'very poor' or 'poor'. The remaining 67% of patients indicated that they rated it as 'good', 'very good' or 'excellent'. This implies that patients are happier with the current quality of medical care.

6.2.6 Doctor's Satisfaction Results

Table 11 indicates doctors' responses to the opinion statements in the questionnaire to evaluate DCU services in percentage terms after combining the unhappy response categories as one group and the happy response categories as another group.

Table 11: Doctors' satisfaction variables with average of combined levels

Doctor Satisfaction variables	Very poor and poor		Good, very good and excellent	
	No.	%	No.	%
Communication between doctors and nurses	4	14.3	24	85.7
Appointment System				
a. Time ¹	7	25.9	20	74.1
b. Booking system	13	46.4	15	53.6
c. Process or procedure	8	30.8	18	69.2
d. The period given to the patient before the time of the operation ¹	10	37.0	17	63.0
Average		35.0		65.0
Allocated number of patients assigned per doctor	16	57.1	12	42.9
Instructions given to the patient				
a. Pre-operative	6	21.4	22	78.6
b. Post-operative	9	32.1	19	67.9
c. Specific instruction	9	32.1	19	67.9
Average		28.5		71.5
Follow up appointment²	3	11.5	23	88.5
The DCU in general				
a. Place	8	28.6	20	71.4
b. Size	21	75.0	7	25.0
c. Accessibility	9	32.1	19	67.9
d. Bed capacity	22	78.6	6	21.4
e. Staff: patient ratio ¹	14	51.9	13	48.1
Average		53.2		46.8

1: no response of only one doctor; 2: no response of 2 doctors

Communication Between Doctors and Nurses

Table 11 results show that 14.3% doctors ranked the level of communication as either 'very poor' or 'poor'. Whereas 85.7% rated

it high as either 'good', 'very good' or 'excellent'. This implies that doctors were, on average, more satisfied with regard to communication with nurses.

Appointment System

There were four aspects covered in the doctors' questionnaire to evaluate the appointment system. Table 11 shows that the range for dissatisfied groups was from 25.9% to 46.4%, while it was from 53.6% to 74.1% for those who were pleased with the existing system of appointments. The lowest satisfied statement was 'booking system'; while the highest level of satisfaction was recorded in the criteria of process and procedure category. The average for both categories was 35% to 65%, which implies that, on average, doctors were satisfied with regard to the appointment system.

Allocated Number of Patients Assigned Per Doctor

Table 11 showed the results that only 42.9% of the surveyed doctors indicated that the allocation of number of patients to doctors was 'good', 'very good' or 'excellent'. However, 57.1% evaluated it as 'poor' or 'very poor'. This implies that doctors were dissatisfied with the current assignment level of patients to each doctor.

Instructions Given to the Patient

There were three different aspects included in doctors' questionnaire that looked into the instructions given to the patient. Table 11 shows that the range of dissatisfaction among the groups was from 21.4% to 32.1%, and the satisfaction levels ranged from 67.9% to 78.6%.

The lowest recorded satisfied criteria were 'post-operative instruction' and 'specific instruction'. While, the highest level of satisfaction was recorded for 'pre-operative instruction'. The average, from Table 11, for unhappy and happy combined groups was 28.5% and 71.5%, respectively. This implies that, on average, doctors' satisfaction level was high toward the current instructions given to the patient by DCU staff nurses.

Follow up Appointment

Table 11 indicates that the combined group as satisfied doctor was at a high of 88.5%, where as the percentage of dissatisfied doctors was only 11.5%.

This implies that doctors, on average, tend to be satisfied with the current follow up appointment.

The DCU in General

There were five different aspects that evaluated the DCU in general in the doctors' questionnaire. Table 11 shows that for only combined dissatisfied groups, the range was from 28.6% to 78.6%, whilst the range for satisfied groups was from 21.4% to 71.4%. The criteria that recorded the lowest level of satisfaction was 'bed capacity', while the highest satisfaction was attributed to 'place'. In addition, the average ranged between 53.2% and 46.8% for dissatisfied and satisfied groups, respectively. This implies that a remarkable percentage of doctors were dissatisfied with regard to the DCU in general.

6.2.7 Nurses Satisfaction Results

Table 12 records the mean and standard deviation of nurse's satisfaction variables.

Table 12: Nurses satisfaction variables with average of combined levels

Nurses Satisfaction Variable	Very poor and poor		Good, very good and excellent	
	No.	%	No.	%
Communication between doctors and nurses	1	14.3	6	85.7
Appointment System				
a. Time	4	57.1	3	42.9
b. Booking system	3	42.9	4	57.1
c. Process or procedure	1	14.3	6	85.7
d. The period given to the patient before the time of the operation	3	42.9	4	57.1
<i>Average</i>		39.3		60.7
Allocated number of patients assigned per doctors	4	57.1	3	42.9
Instructions given to the patient				
a. Pre-operative	1	14.3	6	85.7
b. Post-operative	1	14.3	6	85.7
c. Specific instruction	2	28.6	5	71.4
<i>Average</i>		19.1		80.9
Follow up appointment¹	0	0	6	100
The DCU in general				
a. Place	0	0	7	100
b. Size	6	85.7	1	14.3
c. Accessibility	3	42.9	4	57.1
d. Bed capacity	6	85.7	1	14.3
e. Staff: patient ratio	5	71.4	2	28.6
<i>Average</i>		57.14		42.9
Time and opportunity to discuss patient/ client problem with other nurses (nurses only)	1	14.3	6	85.7

1: no response of 1 nurse

Communication Between Doctors and Nurses

Table 12 shows that nurses evaluated the communication between doctors amounted to 85.7% for the satisfied levels, whilst only 14.3% of them indicated that it was 'poor'. This implies that nurses, on average, were satisfied with the current level communication between doctors.

Appointment System

The nurse's questionnaire evaluated the appointment system on four aspects. Results in Table 12 show that among the combined dissatisfied groups the range of dissatisfaction was from 14.3% to 57.1%, process and procedure and booking system, respectively. Whilst among those highly dissatisfied groups the average was between 42.9% and 85.7%. These percentages were accorded to booking time and process and procedure and booking time given to patients prior to the operation.

Allocated Number of Patients Assigned Per Doctor

Table 12 results indicated that the combined dissatisfied groups amount to 57.1%, whereas the satisfied groups total together to 42.9%. This implies that nurses were dissatisfied, on average, with the number of patients allocated to each doctor.

Instructions Given to the Patient

Nurse's questionnaire included three different aspects that evaluated the instructions given to the patient. Table 12 showed that the combined dissatisfied groups ranged from 14.3% to 28.6%, these percentage were accorded to the variables of pre and post operative and to specific instructions given the patients; respectively. Whilst the satisfied groups range was from 71.4% to 85.7%. These figures related to specific instruction and pre and post operatives respectively.

Follow up Appointment

Table 12 reveals that all nurses were satisfied with the follow up appointment.

The DCU in General

Nurses' questionnaire evaluated the DCU in general in five categories. Table 12 shows that the range was from 0% to 85.7% among dissatisfied groups and it ranged between 14.3% and 100% among the satisfied groups. The criteria of beds and room capacity accounted for the least satisfaction, while the highest satisfaction was recorded for the place. The average was 57.1% and 42.9% for dissatisfied and satisfied groups, respectively. This implies that nurses, on average, were dissatisfied with the DCU in general.

The above findings describe the current situation of the DCU services based on the means of the patients and health care provider's opinion and judgment. The findings were presented for each respondent category individually.

In the next section, the average results of the variable are summarized and thereafter the differences are highlighted.

6.3 Current Satisfaction Level for Patients and Health Care Providers

In this section, the summary of the current satisfaction on the various factors discussed in the previous section is presented and the overall satisfaction is computed, for the purpose of comparison.

Table 13: Average patients satisfaction level by variable

Satisfaction variable	Average Satisfaction (%)
Medical Care	88.5
The time of operation	66.1
The unit	78.0
Leaving the unit and going home	90.5
General evaluation of the quality of medical care given at DCU	92.7
<i>Overall</i>	83.2

Table 13 above shows the average satisfaction level for each factor according to patients' response. The overall patients' satisfaction was computed to be 83.2%. The highest satisfaction variables concern the quality of medical care at the DCU, while the lowest level of satisfaction in patients' opinion was the time of operation. The time of operation is determined currently by the main appointment desk at SMC, which is controlled and managed by Medical Records department and it is physically located outside the DCU.

Table 14: Average doctors' satisfaction level by variable

Satisfaction variable	Average Satisfaction (%)
Communication between nurses and doctors	85.7
Appointment system	65.0
Allocated number of patients assigned to doctors	42.9
Instruction given to the patient	71.5
Follow up appointment	88.5
The Day Case in general	46.8
<i>Overall</i>	66.7

Table 14 shows that the overall doctor's satisfaction was computed to be 66.7%. The lowest satisfaction variables were patient to doctor ratio and the DCU in general, which had an average of 42.9% and 46.8%, respectively. Doctors, on average, expressed a low satisfaction level regarding the current number of patients assigned to each doctor. This is due to the very low number of patients assigned to each doctor which is 2 to 3 patients per a doctor, daily (as per the current booking system). Also, doctors express a low satisfaction level toward the DCU in general which reflects their demand and emphasize on improving the size, bed capacity and staff to patients ratio, which are the components in this factor. They are sensitive to the overall evaluation which is influenced by any factor.

Table 15: Average nurses' satisfaction level by factor

Satisfaction variable	Average Satisfaction (%)
Communication between nurses and doctors	85.7
Appointment system	60.7
Allocated number of patients assigned to doctors	42.9
Instruction given to the patient	80.9
Follow up appointment	100
The Day Case in general	42.9
Time and opportunity to discuss patient/client problem with other nurse	85.7
<i>Overall</i>	<i>71.3</i>

Table 15 shows that the overall nurses' satisfaction was computed to be 71.3%. All nurses are fully satisfied with the follow up appointment. The factors showing least satisfaction were patients to doctors' ratio and the day case unit in general, which had an average of only 42.9%. These findings were identical to those analyzed in the doctors' result.

The above results reveal that the satisfaction of DCU services was as follows:

- Patients had the highest overall satisfaction at 83.2%.
- Nurses had the second highest overall satisfaction at 71.3%.
- Doctors had the least overall satisfaction at 66.7%.

Therefore, the sample overall satisfaction was computed to be 73.7%.

Also, the results show that all factors, when viewed by all three respondents, indicated areas of improvements or dissatisfaction, in

order to reach to higher satisfaction or optimal satisfaction level of 100%. Therefore, the degree of improvement varies from one factor to another as follows:

- 33.3% from doctors show overall satisfaction.
- 28.7% from nurses indicate overall satisfaction.
- 16.8% from patients reveal overall satisfaction.

Therefore, the overall improvement potential was computed to be 26.3%.

In addition, the above results provide the basis of setting priorities for improvement actions. The top priority and immediate attention should target the lowest satisfaction levels, i.e. the patients to doctor ratio.

More suggestion and potential areas of improvement as addressed by the patients are presented in the next section.

6.4 Patients' Views on Potential Improvements to The Function of DCU

The questionnaire of the study included an open ended question on the comments to improve the function of DCU.

Patients' responses revealed that the highest recommended points were:

- Late appointment (26 responses) /220
- Waiting time before going to theatre (22 responses) /220
- Small number of beds available (14 responses) /220
- Improve the care of the nurses (12 responses) /220
- Small room (12 responses) /220
- Type and volume of entertainment (9 responses) /220

From the doctors/nurses point of view, the following were the areas that recorded the highest need for improvement.

- Bed capacity (9 responses) /35
- More space (7 responses) /35
- Pre and post operative nursing care (6 responses) /35
- DCU should work 24 hours (4 responses) /35
- Increase staffing (4 responses) /35
- Separate operation theater for the DCU (2 responses) /35
- Appointments should be taken at DCU (2 responses) /35
- Communication must be improved between doctors and nurses (2 responses) /35

The above mentioned comments and recommendations by the sample respondents agree with the previously discussed areas of improvement which were indicated based on the findings and results of the study.

Recommendations of patients and doctors/nurses are almost the same. Doctors/nurses recommendations are more specific as expected since they are evaluating internally. Their recommendations are more detailed and precise.

Patients' recommendation points were all toward improving the service provided to them directly. However, the recommendations of doctors/nurses focus more on the way to improve the service (indirect).

In order to find out any significant influence that affects the satisfaction factors, the following section addresses the results of relevant techniques used in the survey.

7 Influential Variables on Satisfaction Variables

7.1 Patients

In order to identify the variables influencing patients' variables, the t test was applied.

Table 16 shows that gender, nationality, having children and the kind of residence had no significant effect on patient's satisfaction variables, according to t test results.

Table 16: Average of no significant effect variables on patients' satisfaction variables – t test results

Patients satisfaction variable	Effect variable	N	Mean	Std. Deviation	p-value
	Gender				
Medical Care	Male	133	3.83	0.87	0.597
	Female	85	3.77	0.87	
The time of operation	Male	133	3.21	1.17	0.079
	Female	85	2.93	1.11	
The unit	Male	133	3.41	0.85	0.639
	Female	85	3.35	0.87	
Leaving the unit and going home	Male	129	3.87	0.9	0.907
	Female	85	3.85	0.89	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Male	132	3.96	0.96	0.351
	Female	84	3.83	1.03	
	Nationality				
Medical Care	Bahraini	203	3.82	0.86	0.322
	Non-Bahraini	17	3.61	0.89	
The time of operation	Bahraini	203	3.1	1.17	0.899
	Non-Bahraini	17	3.14	0.96	
The unit	Bahraini	203	3.37	0.86	0.294
	Non-Bahraini	17	3.6	0.82	
Leaving the unit and going home	Bahraini	199	3.87	0.9	0.988
	Non-Bahraini	17	3.86	0.87	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Bahraini	202	3.9	1.01	0.193
	Non-Bahraini	16	4.13	0.62	
	Have you got any children?				
Medical Care	Yes	139	3.84	0.9	0.722
	No	58	3.79	0.84	
The time of operation	Yes	139	3.16	1.18	0.194
	No	58	2.93	1.12	
The unit	Yes	139	3.42	0.89	0.713
	No	58	3.37	0.82	
Leaving the unit and going home	Yes	138	3.94	0.86	0.272
	No	55	3.78	1.04	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Yes	137	3.98	0.98	0.395
	No	58	3.84	1.04	

Table 16: Continued...

Patients satisfaction variable	Effect variable	N	Mean	Std. Deviation	p value
	Kind of Residence				
Medical Care	Possession	151	3.82	0.85	0.916
	Rent	57	3.8	0.92	
The time of operation	Possession	151	3.16	1.18	0.444
	Rent	57	3.02	1.13	
The unit	Possession	151	3.35	0.9	0.281
	Rent	57	3.5	0.81	
Leaving the unit and going home	Possession	147	3.85	0.87	0.517
	Rent	57	3.94	0.94	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Possession	149	3.87	1.01	0.294
	Rent	57	4.04	0.94	

Table 17 shows the variables which were found to have significant effect on the patient's satisfaction based on t test results. On average, those patients who visited the unit for the first time were significantly more satisfied than those who visited twice or more times.

Table 17: Average of significant effect variable on patients' satisfaction variables – t test results

	Is this your first visit as a patient in this unit?				
Medical Care	Yes	161	3.74	0.88	0.046*
	No	59	4	0.79	
The time of operation	Yes	161	2.94	1.13	0.000**
	No	59	3.56	1.11	
The unit	Yes	161	3.32	0.86	0.040*
	No	59	3.58	0.85	
Leaving the unit and going home	Yes	158	3.76	0.91	0.004**
	No	58	4.15	0.78	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Yes	159	3.85	1.01	0.117
	No	59	4.08	.90	

*significant at 5%, ** significant at 1%

Other potentially effective variables were assessed by applying ANOVA technique.

Analysis of Variance (ANOVA) test is used to verify that the means of two or more than two groups are significantly different. Thus, such a statistical technique helps to determine the variables affecting certain outcomes.

Age (after grouped), marital status, education level (after regrouping), type of residence, monthly income and the source of coming were assessed using ANOVA.

Tables 18 and 19 show ANOVA results for the no significant effect variables of both marital status and source on the patient's visit to the unit.

Table 18: Average patients variables by marital status – ANOVA results

Patients satisfaction variables	Marital status	N	Mean	Std. Deviation	p-value
Medical Care	Single	64	3.71	0.80	0.457
	Married	144	3.85	0.88	
	Divorced	8	3.64	1.19	
	Widow	4	4.28	0.59	
	Total	220	3.81	0.87	
The appointment time	Single	64	3.07	1.04	0.132
	Married	144	3.17	1.18	
	Divorced	8	2.19	1.15	
	Widow	4	3.25	1.37	
	Total	220	3.10	1.15	
The unit	Single	64	3.29	0.78	0.34
	Married	144	3.43	0.90	
	Divorced	8	3.11	0.73	
	Widow	4	3.89	0.83	
	Total	220	3.39	0.86	
Leaving the unit and going home	Single	62	3.71	0.90	0.356
	Married	142	3.91	0.89	
	Divorced	8	3.99	0.89	
	Widow	4	4.29	0.95	
	Total	216	3.87	0.90	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Single	64	3.83	0.94	0.839
	Married	142	3.95	1.00	
	Divorced	8	4.00	1.07	
	Widow	4	3.75	1.50	
	Total	218	3.91	0.99	

Table 19: Average patients variables based on source of coming to the unit – ANOVA results

Patients satisfaction variables	Source of coming to the unit	N	Mean	Std. Deviation	p-value
Medical Care	General clinic (morning)	87	3.82	0.86	0.179
	Private clinic (evening)	60	3.74	0.89	
	A/E	29	3.64	0.91	
	Health center	41	4.06	0.76	
	Total	217	3.82	0.86	
The appointment time	General clinic (morning)	87	3.21	1.08	0.062
	Private clinic (evening)	60	3.25	1.09	
	A/E	29	3.14	1.1	
	Health center	41	2.68	1.33	
	Total	217	3.11	1.15	
The unit	General clinic (morning)	87	3.37	0.88	0.714
	Private clinic (evening)	60	3.34	0.89	
	A/E	29	3.38	0.67	
	Health center	41	3.53	0.88	
	Total	217	3.4	0.86	
Leaving the unit and going home	General clinic (morning)	84	3.8	0.94	0.324
	Private clinic (evening)	59	3.84	0.84	
	A/E	29	3.84	0.86	
	Health center	41	4.11	0.86	
	Total	213	3.88	0.89	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	General clinic (morning)	86	3.85	0.95	0.352
	Private clinic (evening)	60	3.8	1.09	
	A/E	29	4.1	0.82	
	Health center	41	4.07	1.03	
	Total	216	3.91	0.99	

Table 20, 21 and 22 show the significant effect variables. Age groups, education level and monthly salary were found to have significant effect on patients' satisfaction variables.

Table 20 shows that the mean age groups were significantly different in all variables except "the appointment time". The satisfaction in all significant variables improves as patients get older. The significance level was on two levels 5% and 1%.

Table 20: Average patients variables by age groups – ANOVA results

Variables	Age group (years)	N	Mean	Std. Deviation	p-value
Medical Care	20-30	71	3.64	0.76	0.011*
	31-40	66	3.69	0.92	
	Above 40	75	4.03	0.86	
	Total	212	3.8	0.86	
The appointment time	20-30	71	3	1.03	0.078
	31-40	66	2.93	1.27	
	Above 40	75	3.34	1.15	
	Total	212	3.1	1.16	
The unit	20-30	71	3.16	0.77	0.007**
	31-40	66	3.32	0.84	
	Above 40	75	3.6	0.88	
	Total	212	3.37	0.85	
Leaving the unit and going home	20-30	69	3.65	0.85	0.014*
	31-40	65	3.81	0.89	
	Above 40	74	4.07	0.87	
	Total	208	3.85	0.89	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	20-30	71	3.65	0.96	0.003**
	31-40	65	3.88	0.94	
	Above 40	74	4.19	0.97	
	Total	210	3.91	0.98	

* statistically significant at 5%; ** statistically significant at 1%

Table 21 indicates the mean values of education levels of the patients' variables. Education levels affected the mean values significantly in two different in two variables: 'The unit' and 'leaving the unit and going home'.

Patients with high level of education were, on average, less satisfied with respect to the unit variable and leaving the unit and going home.

This might be due to the difficulty to satisfy highly educated people. Also, they are highly criticism and evaluate many aspects. In addition, they come with high level of expectation. However, the illiterates will most probably be satisfied even with the minimum level of services provided.

Table 21: Average patients variables by education levels – ANOVA results

Patients satisfaction Variables	Education level	N	Mean	Std. Deviation	p-value
Medical Care	Illiterate	9	4.21	0.79	0.074
	Know how to read and write	6	4.36	0.51	
	School level	132	3.71	0.92	
	University or higher	68	3.9	0.76	
	Total	215	3.81	0.87	
The appointment time	Illiterate	9	3.15	1.42	0.717
	Know how to read and write	6	3.61	1.12	
	School level	132	3.06	1.17	
	University or higher	68	3.1	1.1	
	Total	215	3.09	1.16	
The unit	Illiterate	9	4.28	0.88	0.004**
	Know how to read and write	6	3.92	0.87	
	School level	132	3.3	0.83	
	University or higher	68	3.39	0.86	
	Total	215	3.39	0.87	
Leaving the unit and going home	Illiterate	9	4.46	0.63	0.046*
	Know how to read and write	6	4.53	0.82	
	School level	129	3.8	0.94	
	University or higher	67	3.89	0.82	
	Total	211	3.88	0.9	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Illiterate	9	4.22	1.09	0.224
	Know how to read and write	6	4.33	0.82	
	School level	131	3.82	1.01	
	University or higher	67	4.04	0.93	
	Total	213	3.92	0.99	

* statistically significant at 5%; ** statistically significant at 1%

Table 22 shows that the type of residence had a significant effect on two satisfaction variables, which are: leaving the unit and going home and the general evaluation of medical care quality. The results showed that those patients living in villas were significantly more satisfied than those who living in either houses or flats.

Table 22: Average patients variables by type of residence – ANOVA results

Patients satisfaction variables	Type of residence	N	Mean	Std. Deviation	p-value
Medical Care	Villa	70	3.97	0.71	0.157
	House	97	3.73	0.87	
	Flat	52	3.72	1.02	
	Total	219	3.81	0.87	
The appointment time	Villa	70	3.24	1.04	0.448
	House	97	3.09	1.19	
	Flat	52	2.97	1.22	
	Total	219	3.11	1.15	
The unit	Villa	70	3.56	0.72	0.091
	House	97	3.26	0.92	
	Flat	52	3.42	0.89	
	Total	219	3.39	0.86	
Leaving the unit and going home	Villa	69	4.05	0.67	0.024*
	House	94	3.69	0.97	
	Flat	52	3.97	0.97	
	Total	215	3.87	0.89	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	Villa	70	4.17	0.93	0.003**
	House	95	3.66	0.96	
	Flat	52	4	1.01	
	Total	217	3.91	0.99	

* Statistically significant at 5%; ** statistically significant at 1%

Table 23 reveals the mean values of salary groups for all patients' variables. Only 'the appointment time' was found to be affected significantly, at 5%. As monthly income increases, the satisfaction level with appointment time becomes higher.

Table 23: Average patients variables by monthly salary (BD) – ANOVA results

Variables	Salary month (BD) per	N	Mean	Std. Deviation	p-value
Medical Care	100-300	58	3.96	0.78	0.269
	300-600	82	3.8	0.82	
	600-900	39	3.75	0.91	
	900-1200	11	4.3	0.53	
	More than 1200	9	3.77	1.02	
	Total	199	3.86	0.83	
The appointment time	100-300	58	3.09	1.16	0.039*
	300-600	82	3.05	1.15	
	600-900	39	2.93	1.19	
	900-1200	11	3.67	1.05	
	More than 1200	9	4.07	0.7	
	Total	199	3.12	1.16	
The unit	100-300	58	3.61	0.76	0.065
	300-600	82	3.32	0.8	
	600-900	39	3.2	0.97	
	900-1200	11	3.77	0.75	
	More than 1200	9	3.46	0.95	
	Total	199	3.41	0.84	
Leaving the unit and going home	100-300	57	4.11	0.74	0.106
	300-600	80	3.78	0.91	
	600-900	39	3.85	0.9	
	900-1200	10	4.28	0.48	
	More than 1200	9	4.09	0.62	
	Total	195	3.93	0.84	
Your general evaluation about the quality of the medical care given in the Day Cay Unit	100-300	57	4.09	0.87	0.159
	300-600	82	3.88	0.92	
	600-900	39	3.85	1.11	
	900-1200	11	4.45	0.82	
	More than 1200	9	3.56	1.24	
	Total	198	3.95	0.97	

* statistically significant at 5%

The last tested variable for its effect on the satisfaction variables was the number of children. For this, the correlation was computed.

The purpose of studying the correlation between two variables is to identify the linear association, if it exists. The correlation may have one of three possibilities: positive, negative or no correlation. The correlation is measured by computing the correlation coefficient, r .

The value of r fall is in the closed interval $[-1, +1]$. The extreme positive correlation is $+1$, while the extreme negative correlation is -1 . Usually, the r will take a value between these two extreme values (Joseph F. & Healey. 1993).

The important question in correlation is: whether or not we will have the same value of r even if we take another sample? In other words, do we have statistical evidence that the value represents the population studied or will it vary with another sample?

The correlation analysis provides testing of correlation based on the p -value. We can decide whether or not the correlation is significant, i.e. it is not due to sampling. The decision rule is: if p -value is less than 0.05, then the correlation is significant. Similarly, if the p -value is less than 0.01, then the correlation is very significant, so the smaller the better in case of level of significance.

Table 24 shows the correlation between the patients' satisfaction variables and the number of children. Age was the only variable that had a significant correlation with most of the patients' variables. All the correlation between age and the variables were positive. The strongest positive correlation was between age and the opinion on quality of medical care, while the lowest was with leaving the unit and going home.

Overall the strength of the correlation between age and the four variables was weak ($r < 0.5$).

Table 24: Pearson correlation analysis between patients' variables and number of children

Variable		Medical Care	The time of operation	The unit	Leaving the unit and going home	Your general evaluation about the quality of the medical care given in the Day Cay Unit
how many children you have	r	0.103	0.064	0.114	0.107	0.062
	p-value	0.242	0.467	0.193	0.224	0.480

7.2 Doctors

The appropriate test was derived to test for any influential variable on doctors' satisfaction variables. The techniques used included t test and ANOVA.

Table 25 shows the t test results for gender and 'frequency of DCU utilization by doctors.

Table 25: Average of no significant effect variables on doctors' satisfaction variables – t test results

Patients satisfaction variable	Effect variable	N	Mean	Std. Deviation	p-value
	Gender				
Communication between doctors and nurses	Male	21	3.19	0.81	0.057
	Female	6	4.00	1.10	
Appointment System	Male	21	2.92	0.91	0.236
	Female	6	3.46	1.11	
Allocated number of patients assigned per doctors	Male	21	2.38	1.02	0.120
	Female	6	3.17	1.17	
Instruction given to the patient	Male	21	3.10	0.90	0.484
	Female	6	3.39	0.85	
Follow up appointment	Male	19	3.37	1.01	0.765
	Female	6	3.50	0.55	
DCU	Male	21	2.52	0.67	0.869
	Female	6	2.57	0.56	
	How often do you utilize the DCU?				
Communication between doctors and nurses	Once a week	5	3.60	1.14	0.700
	Twice a week	22	3.41	0.96	
Appointment System	Once a week	5	3.15	1.18	0.888
	Twice a week	22	3.08	0.90	
Allocated number of patients assigned per doctors	Once a week	5	2.40	1.14	0.730
	Twice a week	22	2.59	1.10	
Instruction given to the patient	Once a week	5	3.53	0.69	0.379
	Twice a week	22	3.15	0.89	
Follow up appointment	Once a week	5	3.60	0.55	0.739
	Twice a week	20	3.45	0.94	
DCU	Once a week	5	2.44	0.71	0.591
	Twice a week	22	2.62	0.66	

Table 25 showed no significant effect on any of the doctors' satisfaction variables by gender or the frequency of utilizing the DCU.

The age effect was tested by ANOVA and the results are shown in table 26 below.

Table 26: Average doctors variables by age groups – ANOVA results

Variable	Age group (years)	N	Mean	Std. Deviation	p-value
Communication between doctors and nurses	20-30	1	4.00	.	0.564
	31-40	8	3.13	0.64	
	Above 40	18	3.50	1.10	
	Total	27	3.41	0.97	
Appointment System	20-30	1	4.25	.	0.470
	31-40	8	3.06	0.88	
	Above 40	18	3.03	0.98	
	Total	27	3.09	0.94	
Allocated number of patients assigned per doctors	20-30	1	4.00	.	0.305
	31-40	8	2.25	0.71	
	Above 40	18	2.61	1.20	
	Total	27	2.56	1.09	
Instruction given to the patient	20-30	1	4.67	.	0.234
	31-40	8	3.08	0.83	
	Above 40	18	3.19	0.86	
	Total	27	3.21	0.87	
Follow up appointment	20-30	1	5.00	.	0.224
	31-40	7	3.43	0.98	
	Above 40	17	3.35	0.86	
	Total	25	3.44	0.92	
DCU	20-30	1	2.60	.	0.463
	31-40	8	2.30	0.60	
	Above 40	18	2.66	0.69	
	Total	27	2.55	0.66	

Table 27 shows that there is no significant effect of age on any of doctors' satisfaction variables.

Table 27: Average doctors variables by Experience in years – ANOVA results

Variable	Experience in years	N	Mean	Std. Deviation	p-value
Communication between doctors and nurses	0-5	1	4.00	.	0.536
	6 -10	2	2.50	0.71	
	11-15	4	3.50	1.29	
	More than 15 years	21	3.48	0.93	
	Total	28	3.43	0.96	
Appointment System	0-5	1	4.25	.	0.596
	6 -10	2	2.88	1.59	
	11-15	4	3.25	1.15	
	More than 15 years	21	2.97	0.89	
	Total	28	3.05	0.95	
Allocated number of patients assigned per doctors	0-5	1	4.00	.	0.334
	6 -10	2	2.00	0.00	
	11-15	4	2.00	1.41	
	More than 15 years	21	2.62	1.02	
	Total	28	2.54	1.07	
Instruction given to the patient	0-5	1	4.67	.	0.265
	6 -10	2	2.83	1.18	
	11-15	4	3.50	0.88	
	More than 15 years	21	3.08	0.83	
	Total	28	3.18	0.87	
Follow up appointment	0-5	1	5.00	.	0.330
	6 -10	2	3.00	1.41	
	11-15	3	3.33	0.58	
	More than 15 years	20	3.40	0.88	
	Total	26	3.42	0.90	
DCU	0-5	1	2.60	.	0.948
	6 -10	2	2.30	0.42	
	11-15	4	2.65	0.66	
	More than 15 years	21	2.57	0.71	
	Total	28	2.57	0.66	

Table 27 showed that there was no significant effect of the experience on any of the satisfaction variables.

7.3 Nurses

Age and experience in years were the potentially influential variables for nurses. Their effect was verified by applying ANOVA, and the results are shown in tables 28 and 29.

Table 28: Average nurses variables by age groups – ANOVA results

Variables	Age group (years)	N	Mean	Std. Deviation	p-value
Communication between doctors and nurses	20-30	1	3.00	.	0.871
	31-40	3	3.00	0.00	
	Above 40	3	3.33	1.15	
	Total	7	3.14	0.69	
Appointment System	20-30	1	2.50	.	0.673
	31-40	3	2.50	0.66	
	Above 40	3	3.08	0.95	
	Total	7	2.75	0.74	
Allocated number of patients assigned per doctors	20-30	1	3.00	.	0.218
	31-40	3	1.67	0.58	
	Above 40	3	3.00	1.00	
	Total	7	2.43	0.98	
Instruction given to the patient	20-30	1	4.33	.	0.904
	31-40	3	3.78	1.58	
	Above 40	3	3.67	0.88	
	Total	7	3.81	1.07	
Follow up appointment	20-30	1	4.00	.	0.818
	31-40	3	3.67	0.58	
	Above 40	2	3.50	0.71	
	Total	6	3.67	0.52	
DCU	20-30	1	2.20	.	0.271
	31-40	3	2.20	0.00	
	Above 40	3	2.87	0.64	
	Total	7	2.49	0.51	
Time and opportunity to discuss patient/ client problem with other nurses	20-30	1	3.00	.	0.953
	31-40	3	2.67	1.53	
	Above 40	2	2.50	0.71	
	Total	6	2.67	1.03	

Table 28 shows that age groups in years had no significant effect on nurse's satisfaction.

Table 29: Average nurses variables by Experience in years – ANOVA results

Variables	Experience in years	N	Mean	Std. Deviation	p-value
Communication between doctors and nurses	0-5	2	3.00	0.00	0.926
	6 -10	1	3.00		
	11-15	4	3.25	0.96	
	More than 15 years	7	3.14	0.69	
	Total	2	2.25	0.71	
Appointment System	0-5	1	2.50		0.499
	6 -10	4	3.06	0.77	
	11-15	7	2.75	0.74	
	More than 15 years	2	1.50	0.71	
	Total	1	3.00		
Allocated number of patients assigned per doctors	0-5	4	2.75	0.96	0.323
	6 -10	7	2.43	0.98	
	11-15	2	4.67	0.47	
	More than 15 years	1	4.33		
	Total	4	3.25	1.10	
Instruction given to the patient	0-5	7	3.81	1.07	0.317
	6 -10	2	4.00	0.00	
	11-15	1	4.00		
	More than 15 years	3	3.33	0.58	
	Total	6	3.67	0.52	
Follow up appointment	0-5	2	2.20	0.00	0.354
	6 -10	1	2.20		
	11-15	4	2.70	0.62	
	More than 15 years	7	2.49	0.51	
	Total	2	3.50	0.71	
DCU	0-5	1	3.00		0.533
	6 -10	3	2.00	1.00	
	11-15	6	2.67	1.03	
	More than 15 years	2	3.00	0.00	
	Total	1	3.00		
Time and opportunity to discuss patient/ client problem with other nurses	0-5	4	3.25	0.96	0.321
	6 -10	7	3.14	0.69	
	11-15	2	2.25	0.71	
	More than 15 years	1	2.50		
	Total	4	3.06	0.77	

Table 29 showed that the experience in years was not a significantly influential variable on any of the nurses' satisfaction variables.

7.3.1 Influential Variables of General Level on Satisfaction of Deciding to Perform the Operation in the DCU

In this section, chi-square test was used to determine any influential variable that has an effect on the categorical satisfaction variable on the decision to perform the operation in the DCU.

Chi-square method is used for examining the relationship between two categorical variables.

It was applied to determine the variables that have an association with satisfaction. The variables included: gender, age groups, experience, and how many times has the patient visited the DCU unit, how the patient was brought, education, salary and type of residence. The results are shown in the below tables, for patients and doctors.

Table 30: Relationship between gender and general satisfaction on the decision to perform the operation at DCU, for patients – chi square results

Gender	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
Male	122	61.3	9	56.3	131	60.9
Female	77	38.7	7	43.8	84	39.1
Total	199	100	16	100	215	100

$$* \chi^2 = 0.159, p\text{-value}=0.791$$

Table 31: Relationship between gender and general satisfaction on the decision to perform the operation at DCU, for doctors – chi square results

the operation at DGB, for doctors' chi square results							
Gender		Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
		Yes		No			
		No.	%	No.	%	No.	%
Male		15	71.4	6	100	21	77.8
Female		6	28.6	0	0	6	22.2
Total		21	100	6	100	27	100

$$* \chi^2 = 2.204, p\text{-value}=0.284$$

Table 32: Relationship between age groups and general satisfaction on the decision to perform the operation at DCU, for patients – chi square results

Age groups (years)	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
20-30	64	33	6	40	70	33.5
31-40	59	30.4	5	33.3	64	30.6
Above 40	71	36.6	4	26.7	75	35.9
Total	194	100	15	100	209	100

* $\chi^2 = 0.626$, p-value=0.731

Table 33: Relationship between age groups and general satisfaction on the decision to perform the operation at DCU, for doctors – chi square results

Age groups (years)	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
20-30	1	4.8	0	0	1	3.7
31-40	6	28.6	2	33.3	8	29.6
Above 40	14	66.7	4	66.7	18	66.7
Total	21	100	6	100	27	100

* $\chi^2 = 0.321$, p-value=0.852

Table 34: Relationship between experience in years and general satisfaction on the decision to perform the operation at DCU – chi square results

Experience (years)	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
0-5	1	4.0	0	0.0	1	3.2
6-10	3	12.0	0	0.0	3	9.7
11-15	3	12.0	1	16.7	4	12.9
More than 15 years	18	72.0	5	83.3	23	74.2
Total	25	100	6	100	31	100

* $\chi^2 = 1.125$, p-value=0.771

Table 35: Relationship between first time admission and general satisfaction on the decision to perform the operation at DCU – chi square results

Is this your first visit as a patient in this unit?	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
Yes	148	73.6	10	62.5	158	72.8
No	53	26.4	6	37.5	59	27.2
Total	201	100	16	100	217	100

* $\chi^2 = 0.928$, p-value=0.383

Table 36: Relationship between how the patient was brought to DCU and general satisfaction on the decision to perform the operation at DCU – chi square results

How you were brought to the unit?		Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
		Yes		No			
		No.	%	No.	%	No.	%
General clinic (morning)	77	38.9	7	43.8	84	39.3	
Private clinic (evening)	56	28.3	4	25	60	28	
A/E	24	12.1	5	31.3	29	13.6	
Health center	41	20.7	0	0	41	19.2	
Total	198	100	16	100	214	100	

* $\chi^2 = 7.456$, p-value=0.059

Table 37: Relationship between education level and general satisfaction on the decision to perform the operation at DCU – chi square results

Education level		Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
		Yes		No			
		No.	%	No.	%	No.	%
Total	Illiterate	8	4.1	1	6.3	9	4.2
	Know how to read and write	5	2.6	1	6.3	6	2.8
	School level	120	61.2	10	62.5	130	61.3
	University or above	63	32.1	4	25	67	31.6
		196	100	16	100	212	100

* $\chi^2 = 1.122$, p-value=0.772

Table 38: Relationship between monthly salary and general satisfaction on the decision to perform the operation at DCU – chi square results

Monthly salary (BD)	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
100-300	53	29.3	4	26.7	57	29.1
300-600	76	42	5	33.3	81	41.3
600-900	34	18.8	4	26.7	38	19.4
900-1200	11	6.1	0	0	11	5.6
More than 1200	7	3.9	2	13.3	9	4.6
Total	181	100	15	100	196	100

* $\chi^2 = 4.342$, p-value=0.362

Table 39: Relationship between type of residence and general satisfaction on the decision to perform the operation at DCU – chi square results

Type of residence		Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
		Yes		No			
		No.	%	No.	%	No.	%
Villa	67	33.5	3	18.8	70	32.4	
House	88	44	6	37.5	94	43.5	
Flat	45	22.5	7	43.8	52	24.1	
Total	200	100	16	100	216	100	

* $\chi^2 = 3.917$, p-value=0.141

Tables 30 to 39 show that none of the variables were found to show any significant relationship with satisfaction except for the two variables of marital status and respondent type since p-value was less than 0.05. Gender, age, experience, the number of visit to the DCU , source of patients coming to DCU, education, monthly salary and type of residence had no relationship with level of satisfaction Therefore, in this aspect we failed to find statistical evidence that support the existence of an association between most of the variables included in the questionnaire of patients and doctors.

However, chi square test results show two significant relationships. Table 40 shows that there is a significant ($\chi^2 = 5.994$, p-value<0.05) relationship between type of the respondent and satisfaction level. The prevalence of satisfied respondents was high among patients.

The 4 x 2 table (Table 41) below shows the relationship between satisfaction and marital status.

The relationship was significant since it rated at a level of 5% ($\chi^2 = 8.63$, p-value<0.05). More prevalence of dissatisfaction observed among single patients contrast to a higher level of satisfaction among married patients.

Table 40: Relationship between general satisfaction on the decision to perform the operation at DCU and being a doctor or patient – chi square results

Respondent Type	Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
	Yes		No			
	No.	%	No.	%	No.	%
Doctors	22	9.9*	6	27.3%*	28	11.4
Patients	201	90.1*	16	72.7*	217	88.6
Total	223	100.0	22	100.0	245	100.0

* $\chi^2 = 5.994$, p-value<0.026

Table 41: Association between marital status and satisfaction on decision to perform the operation in the DCU – chi square results

Marital Status		Are you satisfied with doctor's decision of performing the operation in the Unit?				Total	
		Yes		No			
		No.	%	No.	%	No.	%
Single	55	27.4*	8	50.0*	63	29.0	
Married	136	67.7*	6	37.5*	142	65.4	
Divorced	6	3.0*	2	12.5*	8	3.7	
Widowed	4	2.0*	0	.0*	4	1.8	
Total	201	100.0	16	100.0	217	100.0	

* $\chi^2 = 8.634$, p-value=0.035

In summary, the influential variables which affect the satisfaction level were found to be the following:

- First time visit to DCU or more than once
- Age group
- Education level
- Monthly salary
- Type of residence
- Marital status

These significantly influential variables were found to affect few of the satisfaction variables, but not all of them.

As for the t test results, the influential variable 'first time visiting the unit' affected the satisfaction variables, significantly. Patients who visited the DCU for the first time were found significantly more satisfied than those who visited the unit more than one time. Also, patients living in villas were found significantly more satisfied than those living in houses.

Patients' age group as an influential variable was assessed by ANOVA. The results showed that the older the patients, on average higher the level of satisfaction.

Also, ANOVA results showed that higher the education level the patients have, the lower their level of satisfaction.

ANOVA results show that the higher the monthly income of patients, the greater they are satisfied with the services in the unit.

In addition, chi square results showed a significant relationship between type of respondent (patients and health care provider) and the satisfaction level. Patients have a higher satisfaction rate in comparison to doctors.

Nevertheless, married patients were found significantly more satisfied than single or other similar marital status.

CHAPTER FIVE

DISCUSSION

8 Discussion

8.1 Current DCU Services and Practice

Based on the findings of this study presented in the Results Chapter, the current DCU services were perceived to be high by an overall average of 73.7%, of the sample respondents. The highest average was recorded among patients at 83.2%, while the lowest was among doctors at 66.7% and nurses' average was 71.3%.

The difference in average level of satisfaction between nurses and doctors was only of 4.6%, which indicates a very marginal difference.

8.1.1 Doctors/Nurses

The DCU services and practices studied from the doctors/nurses point of view included:

1. Communication between doctors and nurses
2. Appointment system
3. Allocated number of patients assigned per doctor
4. Instruction given to the patient
5. Follow up appointment
6. DCU in general
7. Time and opportunity to discuss patient/client problem with a nurse

In the next sections, further discussion on the above satisfaction variables is made.

8.1.1.1 Communication Between Doctors and Nurses

The average level of satisfaction shown in the previous chapter indicated that both doctors and nursing staff have the same opinion on evaluating the extent of communication between them which was rated high as 85.7%.

There is no sufficient evidence to prove that doctors have a different opinion than nurses on this point. Therefore, on average, doctors' and nursing staff population evaluate communication between them as high. Therefore, there is probably a scope of 14.3% improvement in this area.

However, some conflict and disagreement in telephonic communication has been observed by the nurse supervisor (researcher), at least once a day. Most of these incidents occur because of doctor's limited knowledge about the policies and procedures, as well as, the daily real practice followed by DCU by nurses. For example, the appointment time allocated to patients result in some disagreement between nurses and doctors. This is because early appointments are imposed by doctors and nurses have to unwillingly accept them. The reason for this is because the current capacity and the appointment allocation must follow the approve system.

The above situation, then, leads to the conclusion that the communication perceived by both doctors and nurses (medical care providers) was not affected by the daily conflicts and disagreements between them; however, they were a result of the existing system

and procedures. This suggests that further improvement on the current awareness of the policies and procedures be enhanced.

The responses to a questionnaire in an Australian study revealed some impediments in the flow of communication. Both nurses and doctors perceived lesser frequency of the difficulties in communicating with members of their respective professional groups than with members of other groups (Macky, R.C. & etal.1991).

The responses of the doctors/nurses comments indicate that only 14% (2 out of 28) demanded improvement in communication. The majority of doctors did not see any need for an improvement in the current level of communication. More specifically, doctors and nurses do not consider it a priority. The result of ignoring this particular problem has created discrepancies in the respondent's evaluation.

In summary, the above discussion indicates that communication between nurses and doctors at DCU was high, on average, as both had evaluated the interpersonal side of it. Nevertheless, they did not interpret the disagreement as being affected due to lack of knowledge on policies and procedures.

8.1.1.2 Appointment System

The appointment system was perceived at an average satisfaction level of 65% by doctors and 60.7% by nurses. This implies a very close opinion, as the difference is very marginal.

The observations on the appointment system indicate that there are long queues for booking, zigzag movements and required an extended duration of time. Also, due to the limitation of bed capacity and time available for appointments, the patient, to some extent, has to wait three months for their operation.

Therefore, the satisfaction level with the appointment system was not high and the improvement scope was found to be 39.3% nurses and 35% among doctors. This recommends improvements be made to the appointment system of DCU, at the earliest possible opportunity, in order to reduce the waiting time until operation.

8.1.1.3 Allocated Number of Patients Assigned per Doctors

Opinion on the patients allocated per doctor was evaluated and found to be at a low satisfaction average of 42.9% among both nurses and doctors. Therefore, on average, both have the same opinion and the scope for enhancement reaches 57.1%.

The observation on the number of patients or beds available to occupy patients and its ratio to number of doctors utilizing DCU shows that, although the number of doctors increased there was no proportion corresponding increase in number of patient beds.

In another finding, the effort to improve the ratio of patients per doctor should address the population increase, especially because SMC is the only public government hospital in Bahrain. The Central Bank of Bahrain Economic Indicators (June 2006) showed that the

population increase between 2004 and 2005 was 2.5% (Economic Indicator CBB. 2006).

Therefore, it is highly recommended that the DCU expand in the long term and with a separate center including an operation theater. This will adjust for the expansion and will provide full control, of the current population situation.

In the short term, the number of patients or beds could be increased by changing patient beds to trolleys. This initiative was conducted by the researcher utilizing the available resources at the optimum level possible. The total number of beds was 18(Health Statistics. 2005) and the additional beds were 10, representing a more than 55% increase. In contrast, the increase of out-patient visits between 2004 and 2005 was 3% (7,654 and 7,460 out-patient visit in 2005 and 2004 respectively) (Health statistics. 2005).

Nevertheless, this initiative does not replace the need for expansion because it is only a modest solution to the problem.

There is a common misconception that all patients even those who need a very simple procedure or operation must be assigned a bed. However, the requirement for a bed does not arise in the case of simple surgeries or operation. DCU patients are very similar to transit passengers at airports. They do not provide transit passengers with accommodation since they usually wait for a short period of time.

Currently, the procedure and the precautions for major and severe operations are identical to very simple ones. As a result, crucial

resources (manpower, time and bed) are being wasted. Therefore, different procedures are needed according to the requirements of the operation.

As a result, there is a crucial need to increase awareness and more illustration and literature targeting the perception discussed above.

8.1.1.4 Instructions Given to the Patient

The average satisfaction on instructions given to patients was 71.2% among doctors and 80.9% in nurses. Accordingly, the improvement is required 19.1% and 28.5%, respectively.

In 2000, a study in France showed that post-operative information provided by the surgeon before discharge from the hospital was rated 8.90 on a scale of 1-10, while information provided by the nurse was rated 9.33 (Marchal, F.etal. 2005). It is observed that the current instruction given to the patients was prepared earlier and not updated since then. The instruction is given orally in spite of the fact that it is meant to be in written form. This is because the patients may not fully understand only by reading.

For the DCU, two areas of improvement might be addressed, as per medical care provider's opinion. The first is related to patients details required, while the second is about the awareness on nursing.

In spite of the instructions being given to patients prior and after their operation, patients fail to understand some of the important details,

such as: local preparation (shaving), fasting time, post operative care and importance of being escorted by an adult.

For postoperative instruction, the patient's relatives lack sufficient awareness on how to nurse the patient. For example, when the patient should start eating and which type of food should be given after conducting general anesthesia, etc.

Based on the above, an update of instructions is required to account for the missing details in both pre and post instructions. Moreover, the instructions should also aim at improving the patients and their relatives' awareness how to nurse after leaving.

8.1.1.5 Follow Up Appointment

The average satisfaction result showed that the opinion on follow up of appointments recorded 100% satisfaction in nurses and 88.5% among doctors. Accordingly, the improvement suggested is only 11.5% from doctor's side.

Follow up appointments are related to an appointment system which was discussed in brief in the Introduction.

The high level of satisfaction on the follow up appointments might be due to the current system employed which ensures that an appointment is fixed always. Even if there was no appointment fixed, patients will be seen as walk-in in the clinic of SMC.

Looking at the results of nurses and doctors, it was found that the two satisfaction variables relating appointment system and follow up appointment were contrary to each other among doctors and nurses. Nurses were fully satisfied (100%) with the follow up appointment and doctors were less satisfied at 88.5%. Whereas for the appointment system variable, the case was quite the reverse opposite as nurses were less satisfied (60.5%) compared to doctors (65%). This difference in the point of view between doctors and nurses could be due to the fact that instruction is only given by the nurses and doctors are not aware of the type of instructions available in the DCU.

Moreover, the comments by nurses and doctors suggested that the appointments should be taken at DCU. This improvement will reduce the time required to issue the appointment and eliminate the unnecessary movements from clinic to DCU.

8.1.1.6 Day Case Unit In General

The results of the level of satisfaction at DCU showed it was evaluated at a low of only 42.9% in nurses' point of view, and 46.8% among doctors. Accordingly, there is large scope for improvement of 57.1% and 53.2%, respectively.

The above finding was supported by the comments of nurses and doctors, as they urged the need to improve bed capacity, space and accessibility.

The low level of satisfaction of day case unit in general, might be influenced by the dissatisfaction on the number of patients allocated to each doctor. This suggest a positive relationship, i.e. as the satisfaction level decreases in the first variable, it will decrease in the second as well, and vice versa.

The average admission number of patients to DCU per month is 28 while the total number of staff was 4 for morning, while it is only 2 staff in the afternoon shift. Therefore, the ratio is 7 patients to 1 nurse, for morning which is the concern of the study.

One study found that patient-to-staffing ratio of 5:1 is cost-effective with lower patient mortality (International Council of Nurses. 2006). Therefore, it might be valid to conclude that the current ratio of 7:1 is more expensive and result in higher mortality risk (International Council of nursing. 2006). Therefore, a conclusion might be reached that DCU services are likely to face the same risk of high mortality in addition to high cost.

The theme of 2006 Nurses Day in the world was "Safe staffing saves life" which emphasizes the importance of this issue, as well. Increasing the staff is going to reduce the costs and lower mortality, therefore the cost-benefit analysis of hiring more staff is in favor of the benefits.

The comments of nurses and doctors recommended more staffing to improve DCU. This supports the above discussion.

8.1.1.7 Time and Opportunity to Discuss Patient/Client Problem With a Nurse (for only Nurses)

The average satisfaction result showed that the opinion on time available to discuss patient/client problem with a nurse was 85.7%. Accordingly, the improvement recommended is only 14.3%.

It is expected that having more time to discuss patient/client problems will increase reciprocal education, and, as a result the patient care will improve.

The next section, addresses the patients' satisfaction variables in detail.

8.1.2 Patients

8.1.2.1 Medical Care

The average satisfaction results show that the patients' opinion on medical care revealed 88.5% of satisfaction. The improvement, therefore, amounts to only 11.5%.

Based on the observation of public in daily newspapers, it can be seen that many complaints are raised by people who express low satisfaction toward medical care at SMC. However, there is no complaint addressing DCU in particular.

The high level of satisfaction might be attributed to the polite and special interpersonal skill which nurses show, as many of the sub-

variables that address medical care were related to the hospitality, personal care and response to call. This suggests a careful consideration to avoid any fluctuation caused by a change in the nursing staff.

A study that covered 13 hospitals in Scotland found that overall satisfaction was high at 85% with the care offered in a range of specific procedure.

Also, a study about patients' satisfaction in day case surgery (DCS) conducted in New South Wales Public Hospital (Australian) showed that patients find DCS a satisfactory, convenient and safe alternative to in-patient care (O'Connor, S.J. 1991).

The above finding indicates that the medical care in DCU was satisfactory; however, future improvement is required to maintain this level of satisfaction since a change in nursing staff might come in to effect in the near future.

8.1.2.2 The Time of Operation

The satisfaction average showed that the patients evaluated the time of operation at 66.1%. This average was the lowest among all other variables addressed under patients' satisfaction, the improvement that needs to be addressed in this area amounts to 33.9%.

The comments by patients suggest an improvement in appointments schedule. This might show that a low satisfaction level in this area was due to setting an appointment after a lengthy wait.

The above discussion, suggests a need for improvement the time of operation to great degree, as it has been evaluated as the lowest satisfactory variable. Also, it has a direct impact on the patients' satisfaction since it affects the waiting time.

8.1.2.3 The Unit

The satisfaction average of the unit among patients was 78%. Accordingly, the improvement required amounts to 22%.

As mentioned in the previous chapter, the unit variable includes 11 sub-variables on which the patients were asked to evaluate and express their satisfaction level.

Patients' comments suggest the need for improving the duration of waiting time before going to theater and the type and volume of entertainment media provided in waiting area.

In addition, there are many incidents in which the patients will have a long wait from 7 am in the morning until the end of the shift at 2:15 pm to find that their appointment or operation has been cancelled or postponed.

This finding is in-line with a study from the UK that showed the dissatisfaction was largely related to waiting time between admission, operation and discharge (Davies, B., & Tyers, AG. 1992).

The above discussion suggests that the unit in general requires improvement that aims at reducing waiting time. Also, for those who are waiting long times providing more types of entertainment which will help to increase their satisfaction.

Also, a study about patient's satisfaction in day case surgery (DCS) conducted in an Australian metropolitan public hospital showed; waiting time was one of major areas of patient dissatisfaction (Allison, W., Milly, A., Loader, & Janine. 2003)

8.1.2.4 Leaving the Unit and Going Home

The evaluation of patients regarding leaving the unit and going home reveal a satisfaction average of 90.5%. Therefore, only 9.5% of improvement is required on this variable.

This satisfaction variable included the evaluation of instruction given for future care. In this regard, patients' satisfaction surveys indicate that many patients felt that information provided prior to surgery was inadequate and failed to meet their needs in term of preparing them for what was to be expected from the operation itself, admission care and discharge (The Joanna Briggs Institute. 2004).

The results showed the lowest satisfaction of this satisfaction variable was instructions for future care, which was 88.2%. However, it is high when compared to satisfaction level on other factors.

Another study in Pakistan found that DCU is a safe option with a very high patient satisfaction rate, and for full utilization they need to have proper guidelines and protocols (Yousif, M.M., Jammal, H. Amin, S. & Hussain M. 2003).

The above discussion indicates that only a minor level of improvement is required for the variable of leaving the unit and going home, as it is less important in comparison to the waiting time as the patient is anxious to reach home, since the operation has ended.

8.1.2.5 General Evaluation of Quality of Medical Care Given at DCU

The satisfaction average for the general evaluation on the quality of medical care given at DCU was high and amounted to 92.7%. Accordingly, the area for improvement is only 7.3%.

A study in Spain was conducted to find out the level of quality perceived in surgical treatment in a program of day surgery found that general satisfaction of the patients treated in the day-surgery program was high, 9.1 (range 0-10) (Duran,A.G. etal. 2003).

Moreover, patients evaluated medical care they had undergone previously with a high satisfaction average of 88.5%, this is in-line

with the high level of satisfaction reworded which evaluating the quality of medical care.

8.2 General Level of Satisfaction of Deciding to Perform the Operation in the DCU

In this section, the general satisfaction in the decision to perform the operation in the DCU from the point of view of doctors and that of patients is discussed. The questionnaire has separated this variable and used a different response scale, which required different analysis technique to be applied.

8.2.1 Doctors

The doctors' survey results showed that 79% were satisfied with their decisions to perform the operations in the DCU at SMC. Therefore, the majority of doctors are happy with the DCU operation. This may reflect that doctors are not faced with a direct communication with patients and their conflicts and arguments. Doctors just have to deal with the result of nurses' work at their convenience most of the time.

The dissatisfaction among doctors may be related to bed capacity limitation and long waiting periods of private clinic patients. The comments received from doctors for the areas of improvement required from their point of view focused on increasing bed capacity, expanding the space and having a 24 hour working shift in DCU.

In the previous sections, it was found that the lowest satisfactory variable from doctors' point of view was in evaluating the allocated number of patients assigned to each doctor and the DCU in general. These two variables evaluated the space, size, accessibility, bed

capacity, staff patient ratio. The satisfaction average was only 42.9% and 46.8%, respectively.

8.2.2 Patients

From the patients' point of view, 93% were satisfied with the doctors' decisions of performing operations at DCU. This is a very high score which reflects a good image of the DCU.

At Royal Berkshire Hospital UK, a study showed that 92.1% of patients were either satisfied or very satisfied with the day-case procedure (leeder, P.C. etal. 2004).

A study in St Mary's Hospital, London, UK, 2002, showed the great majority of patients were satisfied from the day-case setting (satisfaction score 81%) on safety, efficacy and acceptability to patients of day-case septorhinoplasty (Gaeorge, C. etal. 2002).

Another study conducted in Spain, showed that the general satisfaction of the patients treated in the day-surgery program was high (Duran, G. etal. 2003).

In the same Spanish study, 88.8% patients would recommend the day surgery treatment they received to their parents and friends and 84.3% would repeat the same experience in the surgery unit. Therefore, and by examining these two satisfaction indicators, patient satisfaction was high. This result supports the high level of general satisfaction previously mentioned.

The current study did not include the patient's intention to repeat or return to the DCU and it does not ask about their intention to recommend the service of DCU to others.

These are two good indicators of patient's satisfaction. However, the study did not ask the patient to express their intention to come again since at SMC the doctors are the ones who assign whether or not the patient should be treated at DCU or operated directly.

The study did not enquire if the patient would recommend others to visit DCU since SMS is the sole, public, free of charge government hospital. All patients are aware of this fact and will experience the DCU service if required by default.

Patients are more satisfied than doctors. This shows the high quality of care at DCU since the patients are happy that although there are limited resources, the staffs at the DCU are able to perform at a satisfactory level.

Only 7% of the patients surveyed showed dissatisfaction. This might be attributed to individual cases of conflict and argument.

A study conducted in Pakistan showed that only 40% of patients were satisfied while 60% were not satisfied with DCS. However, the study found that a large number of patients were satisfied with some areas of DCU but overall satisfaction was poor (Ahmed, M. et al. 2003). But still this shows that at least patient's satisfaction was high in some areas of the DCU.

In addition, the large percentage of dissatisfied doctors (21%) did not negatively affect patient satisfaction because only (7%) of them were dissatisfied.

The relationship between satisfaction and the type of respondent was assessed by applying chi-square test.

The results of chi-square test show that there is a significant statistical evidence to support that there is a relationship between the opinion on satisfaction and the type of respondent, at a significance level of 5%.

Since $\chi^2 = 5.994$, $p\text{-value} < 0.05$, we are 95% confident that the opinion of satisfaction is related to who the respondent is (a doctor or a patient). The 2×2 chi-square (refer to Table 40) is a special case which tests independence. Therefore, we can conclude that satisfaction depends on who the respondent is.

The next section will elaborate more on the variables that affect satisfaction.

8.3 Factors Affecting Satisfaction

Various factors were hypothesized to affect satisfaction these were tested to arrive at any significant evidence.

Chi-square test was applied to evaluate if there was a significant relationship between satisfaction on the decision to perform the

operation at the DCU and gender, age groups in years, how the patients were brought to the unit, patient education level, frequency of utilization, first time visit or not, marital status and experience.

The chi-square results showed that all the above mentioned hypothesized and tested factors are not related to satisfaction at the 5% significance level. We failed to find any significant evidence to support any relationship.

On the other hand, marital status, showed a significant relationship to satisfaction ($\chi^2 = 8.634$ and $p\text{-value} < 0.05$). Single and divorced patients were found to be more dissatisfied than those in married or widowed categories. A possible explanation is that both single and divorced patients go home alone and they do not have family commitment, whereas married or widowed patients will return to a family member.

A study conducted in 1990 in New Zealand found that the most common advantages were minimal disruption to the patient's lifestyle and that of their family, and avoidance of an overnight stay (Read, D.1990).

Based on t test results, those patients who visited the DCU more than once were on average more satisfied on four opinions than those who visited for the first time these are medical care, the appointment system, leaving the unit and going home. Overall, the unit showed a significant difference between those who visited for the first time and others.

This might be explained by the following. The new visitors are not familiar with the repetitive procedure as they experience it for the first time. It is quite a surprise and a shock to them. They do not have any previous idea about DCU. Therefore, they are less satisfied. However, those who visited DCU more than once are familiar with the procedure and their expectations relate to the real situation.

According to ANOVA results, three factors were found to have effect on the opinion of patients. They were age, education level and salary.

At 5% significance level, the satisfaction toward medical care and leaving the unit and going home were significant, whilst satisfaction towards quality of medical care and the unit was significantly different among age groups, at 1% significance level. The higher the age, the happier the patient was. The same correlation was found in a study conducted in New Zealand in 1990 on 211 DCU patients. It was found that the level of patient's satisfaction was high and increased with age. 47% of adult patients rated their experience as excellent (Read, D.1990). Therefore, adult patients contribute to nearly half of the high level of satisfaction.

Education level was found to significantly affect the opinion of patients leaving the unit and going home and the unit. School level patients were unhappy, whereas the illiterate were the happiest. University educated patients were found to express a level of satisfaction somewhere between the two above mentioned categories.

9 Limitations

Measuring opinion is a difficult task. The tool used to measure it was a questionnaire which is limited to what people express at the time they were approached. The researcher cannot control and ensure that all respondents are recording the actual opinion without any bias.

Another limitation of the study was the scarcity of references available and in specific studies done in regions with the same culture. The researcher faced a great level of difficulty finding relevant studies on the subject.

A lack of data on the DCU performance and satisfaction was one of the biggest limitations. The researcher did not find any records on this.

Also, further studies under a more relaxed time frame could allow a group discussion to conduct a qualitative study to evaluate the satisfaction of DCU. Due to time limitation, the researcher has adopted the above mentioned quantitative approach, where the patients represented the main targeted group and both doctors and nurses were supplementary to the study.

Another limitation is that all health care providers included in the sample are working in the unit. The study did not approach other doctors and nurses working in other departments. Such subjects may have different opinions to those expressed by the interviewed health workers.

CHAPTER SIX

CONCLUSION AND RECOMMONDATIONS

10 Conclusions

The general satisfaction level of doctors' decision to perform the operation at the DCU as perceived by patients and doctors was high (93% and 79%, respectively).

Evaluation of the overall satisfaction average of all factors showed that the current level is 74%. Therefore, there remains 26% room for improvement of around 26%.

The lowest satisfaction recorded was for:

- the time of operation with an average satisfaction of only 66% as evaluated by patients.
- the allocated number of patients per doctor of only 43% as evaluated by doctors.
- the allocated number of patients to each doctor and the day case in general of only 43% as evaluated by nurses.

Age, monthly salary income and marital status were found to have a significant effect on the satisfaction factors. Whereas, negative effects were found to be education level and patient's first visit to the DCU. Therefore, future improvement plans to the services at the units should consider these factors.

The significant effect between these variables suggests that the focus should be on the most unsatisfied groups which are the young, single and low income patients. Therefore, the future plans should assign high priority for these groups.

Similarly, high priority should be accorded to those who are less educated or to those who are visiting the DCU for the first time.

11 Recommendations

Based on the findings of this study, the discussion has suggested several areas for improvement on the DCU related issues. These suggestions may form a general policy which, if implemented, may update and enhance the current situation. Therefore, it is recommended to consider the following aspect, as part of a new general policy for increasing the utilization and satisfaction of DCU services at Salmaniya Medical Complex, Bahrain:

- Expand the DCU physically in number of beds and capacity, as well as have a separate theatre; functionally to include an appointment system within DCU and increase manpower size.
- Align the staff to patients' ratio with the international standards, so as to reduce the current ratio from 7:1 to 5:1.
- Regularly review the utilization pattern for each doctor and adjust the total number of patients assigned to each doctor, accordingly, so as to be maintain a higher number than the current number of only 2 to 3 patients per doctor per day.
- Reduce patients' to more than 30 to 45 minutes waiting time before performing the operation by means of effective timing system and higher utilization of the expanded DCU capacity and staff.
- Reduce the waiting period for appointment by expanding the DCU capacity and increasing the number of patients allocated to each doctor, so as to ensure setting an appointment within a two month period.

- Systematically review and evaluate the DCU utilization and satisfaction and to measure the improvement through these key performance indicators.
- Provide patients with more entertainment media to cater to long waiting periods before completing the service. These forms of media might be utilized for increasing the awareness of instructions and general guidance, as well.
- Update the current instruction to account for pre and post operative instructions details concerning fasting time, local preparation, importance of escorting one of the adult, in order to improve patients and relatives awareness.
- Conduct focused research to study the factors which were not found significant for satisfaction with DCU in this study.
- Involve and ensure the participation of the concerned parties of medical care providers, especially doctors for updating and/or rewriting the current policy and procedures in order to improve their knowledge and commitment.

For further studies, employing a group discussion design might be considered in order to explore the satisfaction with the services at DCU. Also, patient satisfaction might be measured by means of such an approach.

REFERENCES

12 References

- Ahmed, M., Zafar, A., Griffin, S., Ahmed, S., Orakzai, N., & Fayyaz, F. (2003) An Audit of Patients ' Satisfaction after Adult Day-Case Surgery at Ayub Teaching Hospital, Abbottabad. Journal of Ayub Medical Collage Abbottabad. 17(1):22-5.
- Allison.W.,Milly,A.,Loader& Janine. (2003). Assessing Patient Satisfaction with Day Surgery at Metropolitan Public Hospital, Australian Journal of Advanced Nursing, V21 (1).PP35-41(7).
- Bahrain Health Strategy Framework for Action. (2004). Office of Plans and Programs, Ministry of Health.
- Bain, J., Kelly, H., Snadden, D., & Staines.H. (1999). Day Case in Scotland and patient's satisfaction and Outcomes. Qual Health Care; 8:86-91.
- Blatt, A, Chen S. (2003).Day-only laparoscopic cholecystectomy in a regional teaching hospital. ANZ J Surg.; 73:321-5.
- Davies, B., Tyers, A.G. (1992). Do patients like day case cataract surgery? Br J Ophthalmology; 76:262-3.
- Department of Health and Aged Care (1999). *Managing beds better – balancing Supply and demand the NDHP experience*. Canberra: DHAC.
- Duran, G. A., Durantez, D. F., Robles, M.J., Lopez., Becerra, A., Mazuez, M. & Ferreras, D.I. (2003). Levels of satisfaction and perceived quality in a day surgery unit of a tertiary referral hospital. Rev Esp Enferm. 95:851-62.

- Durazi, M.H., Al-Bareeq, R., &Osman, M. (2007). Effectiveness of Day-case Surgery in Urology: Single Surgeon Experience, Bahrain Med Bull; 29(3): 91-93.
- Economic Indicators.(2006). Central Bank of Bahrain, www.bma.gov.bh.
- Georgalas, C., Paun, S., Zainal, A., Nimesh, N.P. & Mochloulis, G. (2002). Assessing day-case septorhinoplasty. J Laryngology & Otology, 116:707-710.
- Ghosh S, & Sallam S. (1994). Patient satisfaction and postoperative demands on hospital and community services after day surgery. Br J Surg; 81:1635-8
- Greenwood, M.(1993). Patients' views of oral day surgery.Br Dent J; 175:353-4.
- Harju, E. (1991). Patient satisfaction among day surgery patients in a central Hospital; Qual Assur Health Care J 3: 85-88.
- Health Statistics. (2004). Health Information Directorate, Bahrain, Ministry of Health, 2006.
- Health Statistics. (2006). Health Information Directorate, Bahrain, Ministry of Health, 2007.
- International council of Nurses. (2006). Save Staff Save Lives, Geneva.
- JosephF. Healey. (1993). Statistics A Tool for Social Research, Wadsworth Publishing Company, 3rd ediction, page 392.

- Law, M.L. (1997). A telephone survey of day-surgery eye patients. *J Adv Nurse*; 355-63.25.
- Leeder, P.C., Matthews, T., Krzeminska, K. & Dehn, T.C.B. (2004). Routine day-case laparoscopic cholecystectomy. *British Journal of Surgery*, 91, 3,312-316(5).
- Mackay, R.C. Matsuno, K., & Mulligan, J. (1991). Communication problems between doctors and nurses. *Qual Assur Health Care*; 3(1):119
- Marchal, F., Dravet, F., Classe, J.M., Campion, ., Francois, T., Labbe, D., Robard, S., Theare, J.L. & Pioud, R. , (2005) Post-operative care and patient satisfaction after ambulatory surgery for breast cancer patients. *Eur J Sur Oncol*; 31:495-9.
- Morgan M, .Beech, Roynolds, A., Swan, A.V. & Devlin, H.B. (1992). Surgeons' view of day surgery: is there a consensus among providers? *J Public Health Med*; 14(2): 192-8.
- *National Health Data Dictionary.6.0.* (1997). Australian Institute of Health and Welfare Canberra.
- Nielsen TR, Nielsen BV, Jorgensen PB. (1996). [Patient assessment in ambulatory surgery. A questionnaire study] *Ugeskr Laeger* 25; 158:1823-6.
- O'Connor, S.J. Gibberd, R.W. & West, P. (1991). Patient Satisfaction with Day Surgery; 11,143,149.
- Osborne, G.A. & Rudkin, GE. (1993). Outcome after day-care surgery in a major teaching hospital. *J Anaesth intensive care*; 21:822-7.

- Otte, D. (1996). 'Patients' perspectives and experiences of day case surgery. *Journal2S of Advanced Surgery*; 23, 1228–1237.
- Read, D. (1990). Day surgery: a consumer survey. *Newzland Med J*. 103(895):369- 71.
- SPSS technical report. (2003). "How to get more value from your survey data".
- The Joanna Briggs Institute (JBI). (2004). Management of the Day Surgery Unit Patient, Best Practice Supplement 1, p-1-4.
- Wong LS, Kaukuntla HK, Lam FT, & Fraser I.A. (1999). A survey of patient satisfaction after day case surgery. *Int J Clin Pract.*; 53:189-91.
- Yousif, M.M., Jammal, H., Amin S. & Hussain. (2003). Day surgery: A need for guideline *J Surg Pakistan*; 8:11-4.

APPENDICES

Appendix 1**Medical Care Provider Questionnaire**

Code No.

☐ ☐ ☐ ☐**Evaluation of the Current Practice in the Day Case Unit
(DCU) at Salmaniya Medical Complex (SMC)**

A questionnaire

Dear participants,

In line with health policies and population studies MSc degree in the Arabian Gulf University, I'm conducting a research about Evaluation of the Current Practice in the Day Case Unit (DCU) at Salmaniya Medical Complex (SMC), to improve the services introduced to our patients.

We appreciate your cooperation in answering the following questionnaire, which will take ONLY 5 minutes to complete and all your answers will be highly confidential and for study purpose only.

The main objective of the present research is to develop the services introduced through this unit for our dear patients in Kingdom of Bahrain.

Thanks for your participation

Mona Yousif Ali.

Arabian Gulf University, Kingdom Of Bahrain.

Tel. 17279544

Thank you for your cooperation

The questionnaire

Please, put (✓) in front of the suitable answer in

1. Sex: ☐ Male ☐ female
2. Age: ☐ 20-30 ☐ 31-40 ☐ above 40
3. Profession: ☐ Doctor ☐ Nurse
4. Experience in years: ☐ 0-5 ☐ 6-10 ☐ 11-15 ☐ More than 15
5. How often do you utilize the DCU? ☐ Once a week ☐ Twice a week

*Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that*

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

		1	2	3	4	5
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6- Communication between user and provider						
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7- Appointment system:

a- Time						
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b- Booking system						
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c- Process or procedure						
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d- The period given to the patient before the time of the operation						
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8- Allocated number of patient assigned per doctors						
---	--	--	--	--	--	--

Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

		1	2	3	4	5
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9- Instruction given to the patient:

a- Pre- operative						

b- Post- operative						

c- Specific instruction						

10- Follow up appointment						

11- The DCU in general:

a- Place						

b- Size						

c- Accessibility						

d- Bed capacity						

c- Staff :patient ratio						

12- Time and opportunity to discuss patient / client Problem with other nurse (nurses only)						

13- Are you satisfied with your decision of performing the operation in the DCU?		Yes		No
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If your answer is "NO", say why?

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Further evaluation and recommendations

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Appendix 2**Patients Questionnaire**

Code No

☐ ☐ ☐ ☐**Evaluation of the Current Practice in the Day Case Unit (DCU) at Salmaniya Medical Complex (SMC),**

A questionnaire**Dear patients,**

In line with health policies and population studies MSc degree in the Arabian Gulf University, I'm conducting a research about Evaluation of the Current Practice in the Day Case Unit (DCU) at Salmaniya Medical Complex (SMC), to improve the services introduced to our patients.

We appreciate your cooperation in answering the following questionnaire, which will take 10-15 minutes to complete and all your answers will be highly confidential and for study purpose only.

The main objective of the present research is to develop the services introduced through this unit for our dear patients in Kingdom of Bahrain.

Thanks for your participation

Mona Yousif Ali.
The Arab Gulf University. Kingdom Of Bahrain.
Tel. 17279544

Wish you to recover soon

The questionnaire

Please, put (✓) in front of the suitable answer in

1. Sex: ☐ Male ☐ Female

2. Year of birth: _____

3. Marital status ☐ Single ☐ married ☐ divorced ☐ widow

4. Have you got any children? ☐ Yes ☐ No

If your answer is yes, write how many children you have

☐ Boys ☐ Girls the youngest ☐☐ the oldest ☐☐

5. Level of education

- ☐ Illiterate ☐ Knows how to read and write ☐ Primary level
☐ Preparatory level ☐ Secondary level ☐ post secondary diploma
☐ University level ☐ Postgraduate studies

6. Profession: (as it is in your CPR and passport)

If you are retired, mention your last job before your retirement

7. Residence:

☐ Villa ☐ House ☐ Flat

8. Kind of residence

☐ Possession ☐ Rent

9. Monthly salary (B.D) if the wife is a housewife, the husband's salary will be mentioned.

☐ 100- 300 ☐ 300 – 600 ☐ 600 – 900 ☐ 900 – 1200 ☐ more than 1200

10. How you were brought into the Unit.

☐ General clinic (morning) ☐ Private clinic (evening +LPP)

☐ health center ☐ Accident and Emergency

11. Date of entrance to this Unit / / 2006**12. Is this your first visit as a patient in this Unit?** ☐ Yes ☐ No

*Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that*

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

13. Medical care

	1	2	3	4	5
-Cleanliness					
-The guidance signs to the specific areas					
-Officials' hospitable reception					
-Explanation to the procedures and declaring the next steps of medication with the information given to you continually					

-Taking personal care of your case						
-Giving medicine at suitable time						
-Sisters' respond to calls						

*Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that*

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

		1	2	3	4	5
-The way you are prepared to bear the operation pain						
-The effectiveness of sedatives						
-The care level in general						

14. The time of operation

-General impression about the appointments						
-The way you take the appointment						
-The period given to you before the time of your operation						

15. The Unit

-The period you wait from the time of your arrival till you are called by sisters						
-The waiting room in general						
-The guidance signboard						

-The Means of entertainment						
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-The noise level						
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*Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that*

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

		1	2	3	4	5
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-The privacy level						
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-Temperature control						
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-Period of waiting before operation						
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-The room shape (the bed)						
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-Taking care of companions						
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-Officials' hospitality and cheerfulness						
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16. Leaving the unit and going home

-Help in preparing for departure						
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-Instructions for future care						
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- Receiving the prescription (medication)						
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- The instructions given for the follow-up appointment with your doctor.						
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- The information given to you during your departure						
--	--	--	--	--	--	--

-Your general impression about the administrative procedures while leaving the hospital						
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*Mention your evaluation for the following services by putting (✓) in the suitable square.
Bear in mind that*

1. Very Poor 2. Poor 3. Good 4. Very good 5. Excellent

17. Taking into your consideration all the previous matters.

		1	2	3	4	5
-General evaluation about the quality of the medical care given in the day case Unit						

19. Are you satisfied with the doctor's decision of performing the operation in the Unit?			Yes		No
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If your answer is "NO", say why?

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Comments and recommendations

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Appendix 3

Results of patient, doctors and nurses response to all satisfaction variables

Patients opinion variables	Very poor		Poor		Good		Very good		Excellent	
	No.	%	No.	%	No.	%	No.	%	No.	%
Medical Care										
Cleanliness	9	4.1	11	5.0	64	29.1	82	37.3	54	24.5
The guidance signs to the specific areas	20	9.1	27	12.3	64	29.1	57	25.9	52	23.6
Officials hospitable reception	6	2.8	11	5.0	51	23.4	64	29.4	86	39.4
Explanation of the procedures and declaring the next steps of medication with information given to you continually	10	4.6	21	9.6	42	19.2	69	31.5	77	35.2
Taking personal care of your case	9	4.1	14	6.4	41	18.7	89	40.6	66	30.1
Giving medicine at suitable time	7	3.4	17	8.3	38	18.5	74	36.1	69	33.7
Sisters respond to calls	6	2.7	8	3.7	53	24.2	55	25.1	97	44.3
The way you are prepared to bear the operation pain	12	5.5	27	12.4	47	21.7	73	33.6	58	26.7
The effectiveness of sedatives	7	3.4	8	3.9	59	28.8	78	38.0	53	25.9
The care level in general	6	2.8	12	5.5	60	27.6	64	29.5	75	34.6
The time of operation										
The time of operation (General impression about the appointments)	25	11.5	46	21.1	66	30.3	48	22.0	33	15.1
The way you take the appointment	19	8.6	43	19.5	69	31.4	47	21.4	42	19.1
The period given to you before the time of your operation	29	13.3	60	27.5	46	21.1	48	22.0	35	16.1
The unit										
The unit (The period you wait from the time of your arrival till you are called by sisters)	14	6.5	29	13.4	57	26.3	74	34.1	43	19.8
The waiting area in general	14	6.4	37	17.0	81	37.2	46	21.1	40	18.3
The guidance signboard	20	9.1	24	10.9	62	28.2	63	28.6	51	23.2
The means of entertainment	37	17.3	30	14.0	59	27.6	43	20.1	45	21.0
The privacy level	17	7.9	25	11.6	65	30.1	67	31.0	42	19.4
The noise level	23	10.8	35	16.5	60	28.3	63	29.7	31	14.6
Temperature control	13	6.1	20	9.3	64	29.9	70	32.7	47	22.0
Period of waiting before operation	31	14.2	37	16.9	72	32.9	53	24.2	26	11.9
The room shape (the bed)	10	4.6	48	21.9	80	36.5	44	20.1	37	16.9
Taking care of companions	15	7.1	20	9.5	58	27.6	71	33.8	46	21.9
Officials hospitality and cheerfulness	11	5.0	14	6.4	48	21.9	59	26.9	87	39.7

Patients opinion variable	Very poor		Poor		Good		Very good		Excellent	
	No.	%	No.	%	No.	%	No.	%	No.	%
Leaving the unit and going home										
Leaving the unit and going home (Help in preparing for departure)	9	4.2	16	7.4	59	27.3	81	37.5	51	23.6
Instructions for future care	7	3.3	18	8.5	50	23.6	84	39.6	53	25.0
Did you receive the prescription which you will take home before the departure time?	6	2.9	10	4.8	33	15.8	70	33.5	90	43.1
Were you given the instructions for taking the follow-up appointment with your doctor?	10	4.8	5	2.4	36	17.1	71	33.8	88	41.9
Were you given enough information during your departure?	10	4.7	10	4.7	46	21.8	68	32.2	77	36.5
Your general impression about the administrative procedure while leaving the hospital	7	3.3	13	6.1	57	26.8	82	38.5	54	25.4
Your general evaluation about the quality of the medical care given in the Day Cay Unit	4	1.8	12	5.5	56	25.7	73	33.5	73	33.5

Doctor opinion variables	Very poor		Poor		Good		Very good		Excellent	
	No.	%	No.	%	No.	%	No.	%	No.	%
Communication between doctors and nurses	0	.0	4	14.3	13	46.4	6	21.4	5	17.9
Appointment System										
a. Time	1	3.7	6	22.2	11	40.7	7	25.9	2	7.4
b. Booking system	2	7.1	11	39.3	6	21.4	5	17.9	4	14.3
c. Process or procedure	0	.0	8	30.8	8	30.8	5	19.2	5	19.2
d. The period given to the patient before the time of the operation	1	3.7	9	33.3	9	33.3	4	14.8	4	14.8
Allocated number of patients assigned per doctor	4	14.3	12	42.9	6	21.4	5	17.9	1	3.6
Instructions given to the patient										
a. Pre-operative	2	7.1	4	14.3	8	28.6	10	35.7	4	14.3
b. Post-operative	0	.0	9	32.1	7	25.0	10	35.7	2	7.1
c. Specific instruction	2	7.1	7	25.0	8	28.6	11	39.3	0	.0
Follow up appointment	0	.0	3	11.5	13	50.0	6	23.1	4	15.4
The DCU in general										
a. place	2	7.1	6	21.4	12	42.9	6	21.4	2	7.1
b. Size	7	25.0	14	50.0	5	17.9	2	7.1	0	.0
c. Accessibility	3	10.7	6	21.4	10	35.7	2	7.1	7	25.0
d. Bed capacity	8	28.6	14	50.0	5	17.9	0	.0	1	3.6
e. Staff: patient ratio	2	7.4	12	44.4	9	33.3	3	11.1	1	3.7

Nurses opinion variable	Very poor		Poor		Good		Very good		Excellent	
	No.	%	No.	%	No.	%	No.	%	No.	%
Communication between doctors and nurses	0	0.0	1	14.3	4	57.1	2	28.6	0	0.0
Appointment System										
a. Time	2	28.6	2	28.6	3	42.9	0	0.0	0	0.0
b. Booking system	0	0.0	3	42.9	2	28.6	1	14.3	1	14.3
c. Process or procedure	0	0.0	1	14.3	3	42.9	2	28.6	1	14.3
d. The period given to the patient before the time of the operation	1	14.3	2	28.6	4	57.1	0	0.0	0	0.0
Allocated number of patients assigned per doctors	1	14.3	3	42.9	2	28.6	1	14.3	0	0.0
Instructions given to the patient										
a. Pre-operative	0	0.0	1	14.3	1	14.3	1	14.3	4	57.1
b. Post-operative	0	0.0	1	14.3	1	14.3	4	57.1	1	14.3
c. Specific instruction	0	0.0	2	28.6	0	0.0	4	57.1	1	14.3
Follow up appointment	0	0.0	0	0.0	2	33.3	4	66.7	0	0.0
The DCU in general										
a. Place	0	0.0	0	0.0	2	28.6	3	42.9	2	28.6
b. Size	3	42.9	3	42.9	1	14.3	0	0.0	0	0.0
c. Accessibility	1	14.3	2	28.6	3	42.9	0	0.0	1	14.3
d. Bed capacity	2	28.6	4	57.1	1	14.3	0	0.0	0	0.0
e. Staff: patient ratio	1	14.3	4	57.1	2	28.6	0	0.0	0	0.0
Time and opportunity to discuss patient/ client problem with other nurse (nurses only)	1	16.7	1	16.7	3	50.0	1	16.7	0	0.0

الخلاصة

أهداف البحث: إن الغرض من هذه الدراسة هو توفير قاعدة بيانات أساسية بناء عليها يتم تقديم توصيات لتحسين الأداء الحالي والاستخدام لوحدة الإقامة القصيرة (DCU) بمجمع السلمانية الطبي في البحرين.

كما تشمل الأهداف للبحث توصيف الاداء الحالي والخدمات ومعرفة العوامل التي تساهم في إرضاء المرضى والأطباء ويشمل ذلك آرائهم حول تحسين الخدمات الصحية بالوحدة .

منهجية البحث: هو دراسة وصفية مقطعية. تم إعداد استبيانين ،وقد شارك ٢٥٥ شخصاً في الرد على الأسئلة التي تشمل الأطباء والمرضات والمرضى. تم جمع البيانات خلال شهر يونيو ٢٠٠٦. تم إجراء التحليل باستخدام النسخة ١٣ الـ SPSS (SPSS Version 13) ويشمل ذلك الإحصاءات الاستنتاجية الوصفية والمتقدمة.

النتائج: عبر ٧٩% من الأطباء و٩٣% من المرضى عن رضائهم عن اتخاذ القرارات بالقيام بإجراءات العمليات بوحدة الحالات اليومية. أوضحت نتائج الإجابات متوسط الرضا العام بلغ ٧٣,٧%، حيث بلغ المتوسط أعلى مستوياته عند ٨٣,٢% لدى المرضى، وأقل مستوياته عند ٦٦,٧% لدى الأطباء ، في حين بلغ ٧١,٣% لدى الممرضات. وجاء أدنى متوسط من الرضا في المتغيرات التالية: الوقت لموعد العملية (المرضى)، نسبة المرضى لكل طبيب (الأطباء والمرضات)، وبيئة قسم الإقامة القصيرة بشكل عام (الممرضات). لقد تم التوصل إلى أن عوامل عمر المريض (٤٠ سنة أو أكبر) والدخل الشهري (١، ٢٠٠ دينار في الشهر أو أكثر) والحالة الاجتماعية (المتزوجون) لها أثر إيجابي على الإرضاء. كما

تم التوصل لوجود أثر سلبي لمستوي التعليم (الاميين) ولعدد الزيارات (مرتين او اكثر) التي تتم لوحدة الحالات اليومية. لم يتم التوصل لأي اختلافات تدعم وجود أثر لجنس الشخص أو الطريقة التي تم أحضار بها لوحدة الإقامة القصيرة أو الخبرة أو عدة مرات الاستخدام على الإرضاء.

الخلاصة: يمكن تحسين مستوى الإرضاء حالياً بنسبة ٢٦,٣% على متغيرات الرضا المعينة. كما قد أوضحت هذه الدراسة بعض المتغيرات على العوامل في الإعتبار عن إعداد أي خطط مستقبلية لتحسين استخدام وحدة الإقامة القصيرة (DCU).

التوصيات: تقترح الدراسة بعض المجالات المحتملة لتحسين الاستخدام ويشمل ذلك: التوسعة الفعلية لوحدة الإقامة القصيرة (DCU) وتحديث التعليمات الحالية وتقليل مدة الانتظار قبل الموعد، تقليل مدة الانتظار للعملية، تحسين عدد المرضى المخصص لكل طبيب، تعديل نسبة الممرضات لكل مريض وفق المعايير الدولية بالإضافة إلى التقييم المنتظم لمستويات الرضاء عن وحدة الإقامة القصيرة (DCU).

جامعة الخليج العربي

برنامج السياسات الصحية
والدراسات السكانية



كلية الطب والعلوم
الطبية

توصيف الأداء الحالي وآراء مرضى الجراحة ومقدمي الخدمات الصحية في وحدة الإقامة القصيرة بمجمع السلمانية الطبي في مملكة البحرين

رسالة مقدمة كجزء من متطلبات الحصول على درجة الماجستير في
السياسات الصحية والدراسات السكانية

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