

CHAPTER III RESEARCH METHODOLOGY

RESEARCH DESIGN

The research design employed in this study was a cross-sectional descriptive study with quantitative and qualitative research approaches.

A two-step research study was conducted with the following:

Step 1. Data collection with the outpatients.

Step 2. Personal interviews with the medical staff and hospital leaders.

Both primary and secondary data were collected, analyzed, and interpreted. Primary data were obtained through a field survey using the Patient Satisfaction Questionnaire and the in-depth interviews of the subjects, both from the patients, and the hospital medical staff and leaders. Also, primary data from medical staff and hospital leaders were collected by participant observation in two formal hospital meetings.

Secondary data were collected through literature review on topics relevant to the concept of hospital strategic management, marketing-oriented and consumer satisfaction theory. Furthermore, previous studies and unpublished reports of seminars about the hospital management were also reviewed.

THE CLINICAL SETTING

After careful investigation of various clinical settings, the Medical Department at the OPD was found to be most suitable for the study. Basically, this unit is the largest one at the OPD, it provides health services to about 23 per cent of patients who attend this OPD, and it serves as a major clinic where many common problems are cared for.

Based on the regulation of patient receiving medical service, this study also collected data from patient registration, radiological and laboratory services, and the pharmacy.

POPULATION AND SAMPLE

Target Population

Given the research purpose, respondents in the best position to provide the required information were selected. The key-informants were selected from the stakeholders who play a particular role in hospital development, including patients, and hospital medical staff and leaders.

Samples

The samples were drawn from the three groups which are the key hospital stakeholders. The subjects were selected if they fulfilled the following criteria and agreed to participate:

Patients: All patients who were receiving the outpatient services in the Medical Department of the OPD during the period of data collection.

Medical Staff: All doctors and nurses who were providing services in the Medical Department of the OPD during the survey time.

Hospital Leaders: The director; vice-directors, whose responsibilities related to health service, teaching and research; the Chiefs of OPD and the Health Care Service Office of the hospital; the Heads of the Medical Department, Registration Room, Radiological and Laboratory Departments, and the Pharmacy.

Sample Size

For patient data collection, we reviewed the literature and 25 per cent of out-patients felt dissatisfaction on communication with physicians (Royal Commission on the National Health Services, 1978). We expected the clinical acceptable error is 3 per cent. So, the sample size for collecting data from patients in this study was:

$$\begin{aligned}
 N &= Z_a^2 PQ/A^2 \\
 a &= 5 \% \quad Z_a = 1.96 \\
 N &= 1.96^2 \times .25 (1-.25) / .03^2 \\
 &= 800
 \end{aligned}$$

For the data of medical staff and hospital leaders' point of view, we included all of the subjects who applied a set of pre-defined criteria. A total of 14 medical staff and 11 hospital leaders were interviewed.

METHOD OF THE STUDY

Description of the Instrument and Construction of the Interview Guidelines

Description of the Instrument: The instrument used in the study was the Patient Attitude to Hospital Service Questionnaire (See Appendix). Based on several studies, (Royal Commission on the National Health Service, 1978; Taylor P. 1981; Blair J. 1984; and Satinder L., 1990), a questionnaire was constructed focusing on demographic data, patient hospital experience, duration of patients waiting, and satisfaction, in which this researcher expressed a particular interest and which could reflect the patients' attitudes to hospital services. It included 74 items, most of them with multiple parts. There was a cover sheet which introduced our project.

Section 1: The characteristics of the subjects.

A comprehensive questionnaire on characteristics of the subjects was developed. It contained such variables as outpatients: sex; age; marital status; socio-economic level; and regional origins; gender, geographic location; educational and occupational characteristics; and specialty area.

Section 2: The Patient Hospital Experience

The researcher translated the Patient Attitudes to Hospital Service Questionnaire from the Royal Commission on the National Health Service (1978). It included the total number and the reasons of visits the patient had made to hospital as an out-patient in a three-month period; transportation used from home to hospital by patients, and the length of time it took for them to reach their destination; and on the domestic arrangements they had to made in order to attend the OPD.

Section 3: The Length of Time Patient Spent at OPD

A questionnaire was devised from Satinder L. (1990) asking the time that the patient expected to and actual spent at the OPD. These were the times of patients arrival at the OPD, the time at which they spend at the Registration Room, Medical Department, and also spaces were provided on the sheet for visits to the paramedical departments, the Radiological, Laboratory Department, and the Pharmacy.

Section 4: the Patient Satisfaction Scale

Patient satisfaction was measured through The Patient Satisfaction Scale (Taylor P. 1981; McCusker J. 1984), and it was translated and developed by the researcher. The dimensions of this scale measured seven sub-scales that were direct results of the patient attitudes to general satisfaction, waiting time, relationships with physicians, nurses, radiologists, laboratory technicians, and pharmacists. It was based on 46 potentially stressful situations that were identified from the literature and from interviews with patients and medical staff. The patient satisfaction scale was also designed to include both positive and negative questions for the reliability of the data. Likert's Method of Attitude Scale construction was used to rate the items on a 5-point rating scale, with 5 being the highest positive rating. It was composed of these items as follows:

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Sub-scale	No. of Items	Order of Items						
General Satisfaction	7	1	6	12	15	42	44	46
Waiting Time	8	9	13	16	21	26	30	34
Physician	10	4	8	14	19	23	25	29
Nurse	5	2	17	32	39	45		
Radiologist	5	20	22	27	35	37		
Lab. Technician	5	5	7	11	28	41		
Pharmacist	6	3	10	18	24	31	43	

The Construction of the Interview Guidelines: An interview was performed to survey the medical staff and the leaders respectively. The data were collected by using an in-depth interview which was one of the main qualitative methods. This method of data collection relies on the construction of interview guidelines containing open-ended questions which correspond to specific categories and data item classifications. These interview guidelines were designed with the following criteria:

- They should not have leading questions.
- They should not contain factual questions.
- They should have clear and understandable questions.
- They should be related to the cases being studied.

These questions were formulated to find out the interviewees' opinions with subjective and objective approaches to measurement. These guideline were developed by literature review and experts' opinions on content areas in hospital strategic management. It was intended to

explore two parts:

1. Overviews of the interviewees' perception of the hospital services.
2. Interviewees' opinions about the factors affecting services provision and patient satisfaction, and regarding issues related to hospital strategic development (See Appendix B).

Pilot Study

A small pilot study was carried out. These efforts included a pilot questionnaire which was administered to 10 out-patients. We asked the subjects to respond to the preliminary questionnaire and to make comments and suggestions regarding clarity, readability, and suitability. Some minor changes were made to ensure patients' ease in responding to items. Time required to administer the questionnaire was approximately 20-25 minutes. The final form of the questionnaire was a 72 item instrument, including 70 multiple-choice questions and 2 open-ended questions.

Validity and Reliability

Ten medical students were trained by this researcher in the standardized procedures for administering the questionnaire. They were given procedural guidelines and specific instructions for the selection of subjects.

Validity Study: A measurement of content validity and construct validity were undertaken for the validity study. In this study, literature related to patient attitudes toward hospital services and

university hospital strategic issues relevant to service quality were reviewed to select items which should be included in the questionnaire and the interview guidelines respectively. A draft questionnaire and the interview guidelines were constructed and presented to five experts in this field for review and modification. Then, the modified questionnaire and the interview guidelines were tested, corrected and retested.

The construct validity dealt with the validation of the construct theories and framework that underlie the research. Construct validity was assessed by looking at the logic of the interviewees' perceptions of general hospital issues and those applied specifically to this hospital.

Reliability Study: The reliability technique considered appropriate for this instrument was Cronbach's measure of internal consistency (Coefficient Alpha CA). A sample of 30 was used for a reliability test in this study. Table 3.1 shows the reliability coefficients for each sub-scale and for the overall scale. The reliability coefficient of .82 for the overall scale indicates an adequate consistency of measurement for the instrument. The sub-scale reliabilities are moderate to high but generally lower than the overall scale; the fact that there are fewer items in the sub-scales partially explained the lower reliability.

For the medical staff and the leaders, the consistency of an interviewee's perceptions on specific issues were compared to his/her response to general questions of hospital service issues, and they were also compared during formal meetings and interviews respectively.

Table 3.1

Cronbach's Measure of Internal consistency
(coefficient α) for Sub-scales and Overall Scale

Sub-scales	No. of Items	Subscale
GS	7	0.66
WT	8	0.75
Dr	10	0.62
Nu	5	0.56
La	5	0.52
Ra	5	0.58
Ph	6	0.59
Overall Scale (α)	46	0.82

Procedures of Administration

Patient Data Collection: All patient data were collected within one week. The patients were selected randomly every ten minutes when they arrived the Registration Room. We gave the questionnaires (see Appendix A) to them and asked them to return them before they left. In those departments in which we were interest, there were study team members to contact the subjects. They explained the nature of the project and assured patients of confidentiality. They were also public clocks to provide the standard time to the patients, and the members also noted down the time of each patient arrival and departure the OPD on his/her questionnaire. In most cases, patient were able to complete the questionnaire on their own, however, in the event that the patients were illiterate or otherwise

unable to read and respond to the questions, the team members provided assistance. A member was available to interview the patient when the questionnaire were returned if they had some problems in completing them.

To overcome the problems of bias, we collected data during 10th-15th of August. It was considered that August is the busy period of the year. We surveyed the subjects from Monday to Saturday, and collected data during 8-11am, 2-5pm periods every day. In addition, standard procedures was followed in order to minimize bias. The data on medical staff-patient interactions were obtained by using a tape recorder. Permission was obtained from patients and medical staff to have their consultations recorded as part of this research effort aimed at obtaining information about the relationships between patients and medical staff. The overall return rate of questionnaires was 91 per cent. (See Table 3.2).

Table 3.2
Patient Response Rate

	No.	%
Set Sample	850	100.0
Total Response	774	91.0
Total Non-response	76	8.9
Total Ineligible Sample*	64	7.5
Total for Analysis	710	83.5

* 'Ineligible sample' included cases where 20 per cent or more of item responses were missing, subjects were excluded in these cases.

Patient Data Analysis: The data generated by the survey were entered into the database program (dBASE III) and converted for analysis by the SPSS program. Statistics used in this study were descriptive statistics. Summarized data were described as means and proportional parameters.

Patients' general satisfaction with services was used as the dependent variable in regression analysis, while the personal data and patients' attitudes to waiting time and medical staff were independent variables. The associations between these variables were measured in the study. Thus, the result in terms of multiple correlation coefficients, R and R^2 , were computed for significance of the multiple correlation coefficient.

Medical Staff and Leaders Data Collection: The method employed for collecting data from medical staff and leaders in this study was the qualitative descriptive survey. The methodological challenges for the survey were the efforts directed towards the control of biases or systematic errors. Biases may occur from data collection, measurement and interpretation. So careful and standard procedures were used in administering this part.

Interviews were conducted with the medical staff and the hospital leaders respectively. Two doctors and one leader were absent for meetings or other business during the period of interviews. So, a total of ten doctors, two nurses and ten hospital leaders were interviewed for the study. Each interview was conducted in a standard manner: after a few introductory remarks reiterating the purpose of the study and the assurance of confidentiality, a series of questions (Appendix B) was asked. Afterwards, the subjects were again assured of the confidentiality of their remarks and thanked for their participation. A summary of each

interview was sent to the interviewee for confirmation of its accuracy.

The technique of qualitative data collection allows the researcher to obtain deeper and detailed information on a specific problem than do quantitative studies. Since the interview context was a free-flowing discussion, the subject could talk on many potentially relevant topics which the researcher might not have considered. Likewise, the researcher was able to control the directions and relevancy of the topics discussed to a large extent (Wathinee B., 1989).

The medical staff and leaders had monthly meetings that were held by the department and hospital respectively. The medical staff and leaders attended these meetings. Their data were collected by participant observation in the regular scheduled medical staff meeting and the regularly formal meeting of the hospital leaders. The purposes of participation were to provide validation for the results of the hospital health service and strategic issues, and to aid in interpretation of the data.

Medical Staff and leaders Data Interpretation: Qualitative descriptive approach allows the researcher to be close to the issues and to integrate them concerning the research questions under study which may be obtained from data collection. The procedure was to interpret the perception of individual interviewee and to collate and organize the collected data, turn the data into concepts, and then concepts into relationships between issues, and finally to describe an agenda for action.

The perception of each interviewee was documented by compiling data from interview notes and tapes. The documents containing the interpretation of the perceptions of the interviewees were typed and

addressed to the interviewees who were given the information for confirmation. Regarding collation of all information, the researcher consulted with advisors, experts in this field. Care was taken to ensure that the ideas reflected in the conclusion represent the legitimate interests of the hospital staff and leaders. The difficulty in this procedure is to write it up in the logical form. So, the conceptual framework remained the same throughout the study. Specific questions, however, were added to the core questions for each interviewee in accordance with his/her interests and background.



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