

ASSESSMENT OF IN-PATIENTS' SATISFACTION WITH THE QUALITY OF HEALTH CARE SERVICES PROVIDED IN SOBA UNIVERISTY TEACHING HOSPITAL, KHARTOUM, SUDAN

¹Fatima Ismail Hussein Badri and ^{*2}Kamal Addin Mohammad Ahmad Idris

¹Department of Clinical Pharmacy, Faculty of Pharmacy, University of Khartoum, Khartoum, Sudan.

^{2*}Department of Pharmacy Practice, Faculty of Pharmacy, University of Gezira, Wad Medani, Sudan.

Article Received on
13 Feb. 2018,

Revised on 05 March 2018,
Accepted on 25 March 2018

DOI: 10.20959/wjpr20187-11741

*Corresponding Author

**Kamal Addin Mohammad
Ahmad Idris**

Department of Pharmacy
Practice, Faculty of
Pharmacy, University of
Gezira, Wad Medani,
Sudan.

ABSTRACT

Background: Study of hospitalized Patients` satisfaction with provided healthcare services adds an important dimension and information on the performance of the health providers. Therefore contributing to the assessment and future improvement of the quality management of the health services. **Objective:** This study aimed at assessing patients` satisfaction with quality of health care services in Soba University Public Teaching Hospital, Sudan. **Materials and Methods:** A descriptive cross sectional questionnaire based study was carried out from April 2017 to June 2017 at the in-patient wards of three medical departments (surgery, gynecology and obstetrics and general medicine). Sample size (201) included all patients in the wards of those three medical departments. Data were collected using

pretested pre-structured interviewer administered questionnaire, of 29 questions. Respondent patients' satisfaction item was scored with Likert scale of three points. Patients who scored 80-100% were rated as having excellent satisfaction, 70-79% very good, 60-69% good and 50-59% fair and < 50% poor satisfaction. **Results:** Response rate was 100%. Respondents' satisfaction with doctors', nurse, medical laboratory investigation and pharmacy services were 93%, 84%, 58% and (11%), respectively. Overall average satisfaction was 85%. Respondents' marital status, being hospitalized in the last five years and having previous information about their diseases showed significant correlation with respondents` satisfaction with doctors services, ($p=0.046$, 0.002 and 0.04) respectively. Respondents' gender showed

significant correlation of satisfaction with nurse and pharmacy services ($p=0.01, 0.05$), respectively. **Conclusion:** Respondents' satisfaction with health services was excellent. Satisfaction with medical laboratories investigation and pharmacy services were unsatisfactory and need improvement.

KEYWORDS: Patients, Satisfaction, Soba hospital, Services, Sudan.

INTRODUCTION

In today's health-care environment where quality of care and accountability are stressed, patient satisfaction has become a widely assessed outcome for quality improvement.^[1] Satisfaction has been found to influence patient compliance, use of health services, continuity of care and presumably health status(1). Patient satisfaction encompasses a number of dimensions. Among them, three dimensions, namely, access to care, professional staff (interpersonal interaction) and quality of care (technical competence). These three dimensions have been found to account for nearly two-thirds of the variance in overall patient satisfaction.^[1] Research indicates that patient satisfaction can be influenced by many factors, both endogenous and exogenous to the care received.^[1]

Patient socio-demographic characteristics, like race, sex, marital status and health condition, have been found to be associated with patients' satisfaction, although they may not be as important as factors specific to the care setting.^[1]

1.1.1. Factors influencing patient satisfaction

The establishment and survival of any organization depends on its clients. This fact is an accepted business principle.^[2] The hospital's patient is also a client and in fact the patients are the core target for the hospital services. Factors influencing the success of management programs in hospitals are care services and attention to patient satisfaction. In fact, a satisfied customer is a profit supplier. Organizations that fail to attract their customer's satisfaction will face the threat of dissolution in the long term. Some considered the geographical and cultural factors the most important factors in the planning of requirements and expectations of patients in hospitals.^[2] Much of the research, however, focused on customer satisfaction and customer relationship in organizational processes, although, understanding the issues and identifying the expectations and requirements of clients are always important.^[2]

1.1.2. What is patient's/customer's satisfaction?

In general satisfaction is a person's feeling of pleasure or disappointment, resulting from comparing a product or services performance or (outcome) in relation to his/her expectations. If the performance falls short of his/her expectations, the customer is said to be dissatisfied. If the performance matches his/her expectations, then the customer is satisfied. If the performance exceeds ones' expectations, then the customer is said to be highly satisfied or delighted. Patients, family members, referral doctors, suppliers, employees are considered as customers in hospitals. The most directly affected by the excellence of health services are the patients themselves and then their co-patients. They can be considered as clients/ customers/ or beneficiaries.^[3]

Today, customer satisfaction is as considered one of the most important evaluation tools for measuring performance of hospital services.^[3] It is an important aspect and measure of service quality in health sector as satisfied patients or customers are more likely to maintain consistent relationship with the service and its provider. Organizations also can address system weakness and improve its care services based on customer satisfaction. Satisfied patients are more likely to adhere to specific medical regimens and treatment plans. Moreover, patient satisfaction measurement adds an important dimension and information on performance, therefore contributing to the total quality management of the health system.^[3] Satisfaction tends to mirror the quality of health services delivered. It is a psychological notion that can be easily understood, but is difficult to define and measure. The experience of satisfaction may be connected to happiness, wealth, prosperity and quality of life. In its technical attribution, it is a judgment set by the customers of a service, documented after the consumption experience. Patient satisfaction is a moving target that must be monitored and enhanced over time. Failure to do so ensures that rising patient expectations will go unmet or present new opportunities for competitors to exploit. Understanding the content and organization of patient expectations can allow any healthcare provider to respond proactively. The ability of any organization to satisfy its customers is most easily realized when those expectations are managed so as to be consistent with the product and services provided.^[4]

1.1.3 Efficiency of service

One of the factors that influence patient satisfaction is efficiency of services rendered to patients. The "efficiency" of service refers to the promptness of the care given to patients, including issues like waiting time before consultation, duration of consultation, amount of

time spent with the doctor subsequently, quick response to emergencies, quick dispensation of drugs, fast and accurate laboratory tests. Satisfied patients are more likely to comply with prescribed treatment and advice from doctors; they are also more likely to return for additional care when necessary and may be more willing to pay for services, thereby increasing revenue.^[5]

In health care, patient satisfaction is not grounded in giving the patients what they want. Rather, it is found in providing them with what they need, and helping want it. To know what patients think about how a practice is doing, the practitioner needs to ask them. The results will not only mean better patient care and a more profitable practice over the long term, they will also improve how practitioner and staff feel about coming to the office each day. And that is very satisfying.^[6]

Patient satisfaction is as important as other clinical health measures and is a primary means of measuring the effectiveness of health care delivery. The current competitive environment has forced health care organizations to focus on patient satisfaction as a way to gain and maintain market share. If you don't know what your strengths and weaknesses are, you can't compete effectively. The data gathered through measuring patient satisfaction reflects care delivered by staff and physicians and can serve as a tool in decision-making.^[7]

Patient satisfaction surveys can be tools for learning; they can give indication to problem areas and a reference point for making management decisions. They can also serve as a means of holding physicians accountable – physicians can be compelled to show they have acceptable levels of patient satisfaction.^[7]

Patient satisfaction data can also be used to document health care quality to accrediting organizations and consumer groups and can provide leverage in negotiating contracts. Probably the most important reason to conduct patient satisfaction surveys is that they provide the ability to identify and resolve potential problems before they become serious. They can also be used to assess and measure specific initiatives or changes in service delivery. They can identify those operations and procedures that require better explanation to patients. And most importantly, they can increase patient loyalty by demonstrating care about their perceptions and are looking for ways to improve.^[7]

1.1.4. Importance of patient satisfaction

Patient satisfaction has long been considered an important component when measuring health outcomes and quality of care.^[8]

It is a complex relationship between their perceived needs, and expectations from the health services received. So, satisfaction is one of the variables affecting the outcomes of health care and use of services. In order to improve the provision of care, predictors of dissatisfaction must be identified and eliminated.^[8]

User satisfaction with the health care is a basic component in evaluating health care quality. The importance of the patient's opinion and his/her perception of treatment and care at health facilities are now recognized in all developed systems of health care.^[8]

Investigation of patient satisfaction has been used to meet three main objectives in health care delivery industry. First, to determine how and to what extent satisfaction influences patients seeking care in terms of complying with treatment adherence and continuing to use the care. Second, to use satisfaction as an indicator of the quality of care; and third to help physicians and the health care organizations better understand the patients' point of view and to use this feedback to increase accountability and to improve the services provided.^[8]

1.1.5. Review of patient satisfaction

Patients' perception of health care has gained increasing attention over the past 20 years. It is currently admitted that patients' opinion should supplement the usual indicators of quality in health care. Patient expression is an important source of information in screening for problems and developing an effective plan of action for quality improvement in health care organizations. Assessing satisfaction has been mandatory for French hospitals since 1996, which has resulted in an increasing number of projects devoted to the concept of satisfaction, determinant of patient satisfaction, and the development and validation of generic in-patient satisfaction questionnaires.^[9]

Patient satisfaction surveys are used by hospital managers to improve the hospital environment, patient amenities and facilities in a consumerism context. In contrast, little has been done to determine whether patient satisfaction assessment can lead to changes in patient care at the ward or department level. The efficacy of patient-based measured feedback to improve care provider skills and practices remains controversial.^[9]

1.1.6. Theoretical model for constructing conceptual frame work

In the study of people's satisfaction with health care delivery in the United States of America from 1970 to 1975, in (10) pointed out six principles focusing on patient satisfaction, and three of them are presented below:

1. Satisfaction in term of convenience

- Waiting time to obtain service,
- Available care when required,
- Base of receiving care,

2. Satisfaction in term of courtesy

- Friendly and polite attitude of the service provider,
- Provision of what is necessary for the welfare of a patient,

3. Satisfaction in term of quality of care

- The patients' perception of the service performance.^[10]

It is imperative that a service company or institution measures and monitors service quality and satisfaction with a view to influence the behavioral intentions of their customers. Although there are many factors affecting the attitude and intention of the consumer, it could be said that the perception of service quality is the most important among them. The importance of service quality is increasing nowadays. Interest in healthcare service quality is remarkable. The patients perceptions of quality have been shown to account for 17-27 percent of the variation in a hospital's financial measures such as earnings, net revenue, and return on assets.^[11]

Quality of care requires that healthcare providers constantly check whether the care offered is effective, humane and patient centered, and that the health consumer's expectation and needs are satisfied. This is a professional responsibility owed to the consumers of healthcare goods and services.^[12]

1.1.7. Patients' Experiences with Healthcare Service

One significant dependent variable in the study of patients' satisfaction is the patients' own experiences of the real service performances and its degree of matching to his/her expectations. This vital factor later also creates ones' hopes of receiving the same or a better quality of services than what they got used to. People normally base their judgment of the

services on seeing, touching, listening, smelling and tasting than the elements included in a set of quality service. For healthcare service, particularly patients will decide whether they are low or highly satisfied with service through feeling the direct elements of the services such as physical facility, physicians' consultation and treatment skill, nurses' consoling skill, pharmacy service and registering service.^[10]

Patients' opinion about quality services would be instantly changed if he/she continuously experiences same services with different ways of serving. Self involvement really matters in determination of one's way of perceiving quality of care they received. Ways of judging patients' satisfaction are convincing if the evidence provided is the latest, particular, reachable and comprehensible.^[10]

It is worth noting that most patient-satisfaction studies are based on patients' experiences at one-time encounters rather than their experiences over time. In addition, discussions in the literature make it clear that quality of care is not what is being measured in patient surveys.^[13] In fact, many surveys intentionally avoid asking patients how they feel about the quality of their care, presumably because patients are not in a position to judge their physician's technical skill. It appears that what's being measured is typically a combination of the patient's expectation before the visit, the patient's experience at the visit and the extent to which the patient experienced a resolution of the symptoms that led him or her to make the visit.^[13]

1.1.8. Factors to measure patient satisfaction

-Patient-related factors: The literature appears mixed on the importance of patients' demographic and social factors in determining satisfaction. Some studies stated that patient demographics are a minor factor in patient satisfaction, while others concluded that demographics represent 90 percent to 95 percent of the variance in rates of satisfaction.^[13]

-Physician-related factors

Physicians can promote higher rates of satisfaction by improving the way they interact with their patients, respect and sharing.

-System-related factors

Patient satisfaction is not simply a product of the patient's demographics and the physician's skills, only. It is also affected by the system in which care is provided.^[13]

1.1.9. Problems with measuring satisfaction

Several problems arise when attempts are made to measure satisfaction:

Firstly, the personal and subjective nature of evaluations means that views about given standards of care can vary. Individuals' judgments reflect their own circumstances and backgrounds and do not lend themselves to objective measurement. Secondly, expressed satisfaction may reflect users' knowledge and expectations, rather than the quality of the service and care provided. If users have limited knowledge of opportunities and low or unclear expectations of service quality, they may record high satisfaction even if poor standards of care have been provided. Similarly, if people are passive and uncritical users of healthcare, their expressions of satisfaction carry little meaning; a satisfied customer may be one who holds no opinion at all, or one who unquestioningly defers to medical paternalism.^[14]

To measure satisfaction, therefore, it is necessary to understand how individuals evaluate care and make judgements. A recent study suggested that consumers' evaluations are based on physicians' behavior, but in general little is known about the mechanisms by which satisfaction judgments are formed. Thirdly, there is a need to separate feelings of satisfaction or dissatisfaction with the service delivery or process of care from those related to the health outcome of care. Modeling this is complex, because of the reciprocal nature of the relationship between health outcomes and satisfaction with care. This means that data on satisfaction cannot be interpreted independently of information on health status. A fourth problem is that theories of cognitive dissonance predict that people will not admit to dissatisfaction with services they have chosen to use, because that would suggest an inconsistency in their behavior.^[14] Further complexities measurement arise because people may express different degrees of satisfaction with their personal care and with the healthcare system in general.^[14]

1.1.10. Service quality perception in hospital in a developing country

Patients' perceptions about health services seem to have been largely ignored by health care providers in developing countries. Such perceptions, especially about service quality, might shape confidence and subsequent behaviors with regard to choice and usage of the available health care facilities is reflected in the fact that many patients avoid the system or avail it only as a measure of last resort. Those who can afford it seek help in other countries, while preventive care or early detection simply falls by the wayside. Patients' voice must begin to

play a greater role in the design of health care service and delivery processes in the developing countries.^[15]

1.1.11. Health literacy

Health literacy is the degree to which individuals have the capacity to obtain, process and understand basic health information and services need to make appropriate health decisions.^[15] Health literacy (HL) is more than just the ability to read, write and understand numbers in the health setting. Health literacy is the cognitive ability to understand and interpret the meaning of health information in written, spoken or digital form. It impacts on whether people are able to embrace or disregard actions relating to health and make sound health decisions in the context of every day life.^[16]

In practical terms, HL involves knowing about bodily functions and signs of dysfunction; knowing how to find, interpret and understand information and how and where to seek further information when required. It impacts on the ability of the individual to communicate with relevant health professionals, discern what constitutes good quality advice and translate this help into action.^[16]

1.1.12. Why is health literacy important?

People with adequate HL have better health status than those with limited HL skills. People with limited HL have less knowledge about the importance of preventive health measures, are less able to participate in chronic disease self-management and often do not understand medication instructions and may take medications incorrectly. Limited HL has been shown to be particularly prevalent among the elderly, people of non-English speaking backgrounds, those with limited education, those from low socioeconomic groups and those with chronic disease. Recognizing low HL in general practice is important as there is evidence to suggest that tailoring communication to those with poor HL can improve outcomes in chronic diseases.^[17]

Health literacy has important applications in the general practice setting. It underpins the efficiency of consultations, health promotion efforts and self-management programs. Recognition of the HL status of individuals allows use of appropriate communication tools. Over time, realigning general practice to allow the time and structures to tailor communication appropriately will save time and effort and improve patient satisfaction and health outcomes.^[17]

The health care system has a responsibility to proactively enable more accessible interactions and environments that promote health and wellbeing. Health literacy is primarily the responsibility of health systems, and those working in them, as they determine the parameters of the health interaction, including the physical setting, available time, communication style, content and mode(s) of information provided, attitudes to the provision of information and definitions of concepts such as 'sound health decision making' and 'compliance'.^[17]

Rationale

With their limited financial resources, developing countries are struggling to avail reasonable and satisfactory health services to patients in both the private and public health settings.

The level of services extended to patients may at sometimes fail to win or match their level of satisfaction, as health cannot be compromised. Poor patient satisfaction invites a big financial and political role on health systems.

Accordingly, studying various degrees of patient satisfaction and understanding its various determinants is crucial for any healthcare upgrading plans. It also helps raising the awareness of those concerned with healthcare services planning and development.

This study is planned to shed more light on Sudanese patients' satisfaction with provided healthcare in public hospitals, anticipating to disclose the various factors positively or negatively impacting that satisfaction of patients and then recommending corrective measures.

Based on above it was decided to conduct this study under the title: Assessment of in-patients' satisfaction with the quality of healthcare service provided in Soba University Hospital, Khartoum, Sudan.

1.4. Objectives

1.4.1. General objective

-To assess the in-patients satisfaction with medical care services provided in Soba University Teaching Hospital, Khartoum, Sudan.

1.4.2. Specific objective

1- To identify the socio-demographic characteristics contributing to in-patient satisfaction, with healthcare.

2- To assess the state of health facilities given to the in-patients present in Soba University Hospital, Khartoum, Sudan.

MATERIALS AND METHODS

2.1. Study design

Descriptive cross sectional hospital based study.

2.2. Study area

Data were collected from the patients in the wards of Soba University Hospital, which is affiliated to University of Khartoum. The hospital provides a host of therapeutic and diagnostic services at the highest level through specialized units served by nursing staff and administration. All these services are provided at reasonable costs, with special consideration for the poor people.

2.3. Study period

The data was collected in the period from April to June 2017.

2.4. Study population (Sample size)

All in-patients attending the wards of Soba University Hospital in three medical departments, namely; surgery, gynecology and obstetrics, and general medicine department at the time of the data collection.

2.4.1. Inclusion criteria

Patients who were admitted to the study wards and met the inclusion study criteria, which are:

- Patients who are 18 years or older.
- To be admitted in the ward of the hospital for two nights or more.
- Not mentally disorientated.

2.4.2. Exclusion criteria

Patient who are critically ill and they are not able to speak and answers question by their own.

2.5. Sample size

Sample size was all the patients who were admitted at the time of data collection (201) patients.

2.6. Data collection

Data were collected using pretested, pre-structured interviewee administered questionnaire designed using information from literature review and previous studies on patients' satisfaction and quality of healthcare. The questionnaire consisted of twenty nine (29) questions. The first Eleven was mainly about the socio demographic characteristics of the potential respondents. The other eighteen questions were including five domains (Hospital safety and facilities, Doctors' service, Nurse Service, Medical laboratory and technician service, pharmacy and Pharmacist service). The content of questionnaire was validated from three professional pharmacists and statistician. The pre-structured questionnaire which consisted of twenty nine questions was pre-tested on ten of potential respondent to verify validity and possible comprehension problem, the piloted number was not included in the selected sample size.

2.7. Statistical Analysis

Data collected were coded; tabulated and analyzed using the statistical package of social science (SPSS) version 21. The applied tests were chi-square and a p value $\geq (0.05)$ level was used as a cutoff point of significance. Multiple associations were evaluated in a multiple linear regression model based on forward stepwise selection. This procedure allowed the estimation of the strength of the association between each independent variable and the dependent variable.

Eighteen questions were considered to measure patient satisfied with quality of care in study hospital.

The entire eighteen questions were giving the following 3-point likert scale to be: Yes= 3, Sometimes= 2, No = 1. Except the questions 10, 11, 12 & 16 were giving the opposite scores between agrees & disagrees as follow: Yes= 1, Sometimes= 2, No= 3. Thus for 18 items, the maximum attainable score was 54 and minimum was 18. The overall level of patient's satisfaction was classified according to the following percentage score: Excellent= (80%-100%), Very good= (70%- 79%), Good= (60%- 69%), Fair= (50%- 59%), Poor= (>50%).

2.8. Ethical consideration

The research proposal was first approved by the research committee of faculty of pharmacy at Khartoum University before conducting the study. Then it was submitted to Soba University

Hospital manager for approval. That obtained approval to facilitate data collection from the hospital.

Potential respondents and hospital staff were informed about the study objective and data collection details. Then verbal informed consent was obtained from the potential respondent who agreed to freely participate.

RESULTS AND DISCUSSION

Results are expressed in both frequencies and percentages.

The overall response rate was 201(100%).

Socio-demographic characteristics

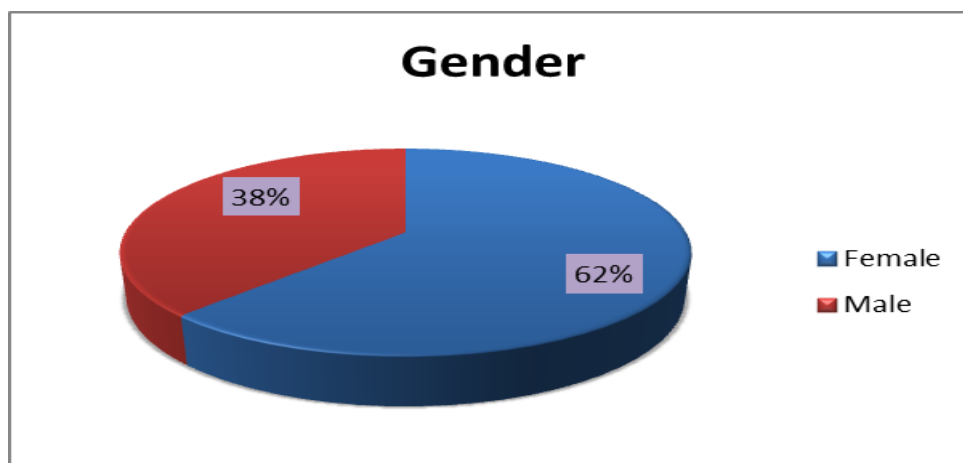


Fig. 1: Distribution of respondents patients according to gender.

Females constituted a clear majority possibly because a complete medical department was only for females (Obs. and Gayn.) and they still share the other departments.

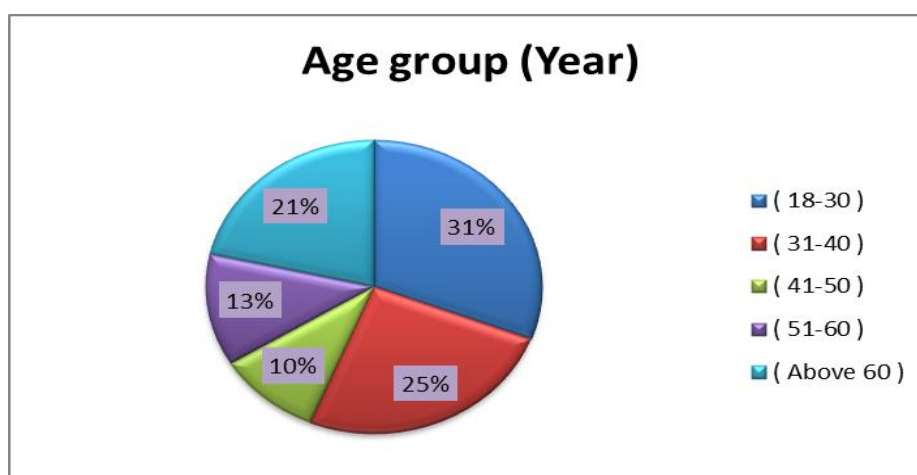


Fig. 2: Distribution of respondents according to age in years.

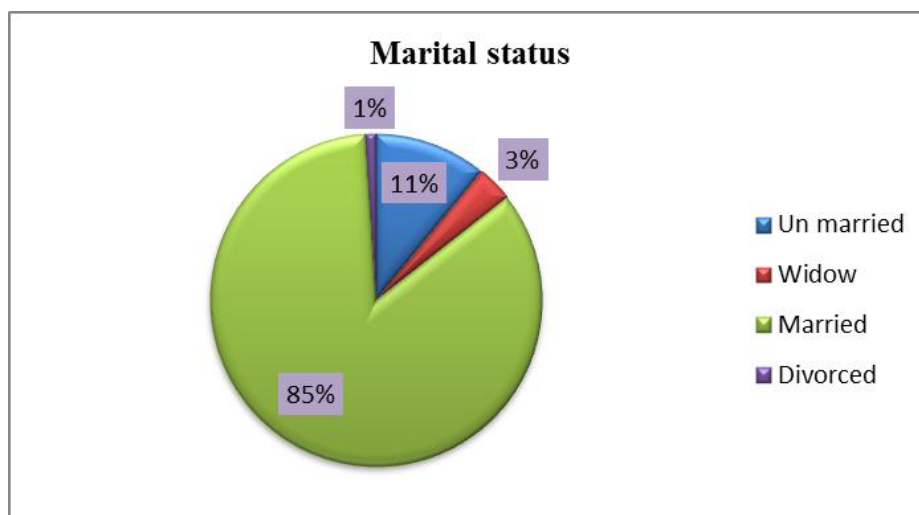


Fig. 3: Distribution of respondents according to their marital status.

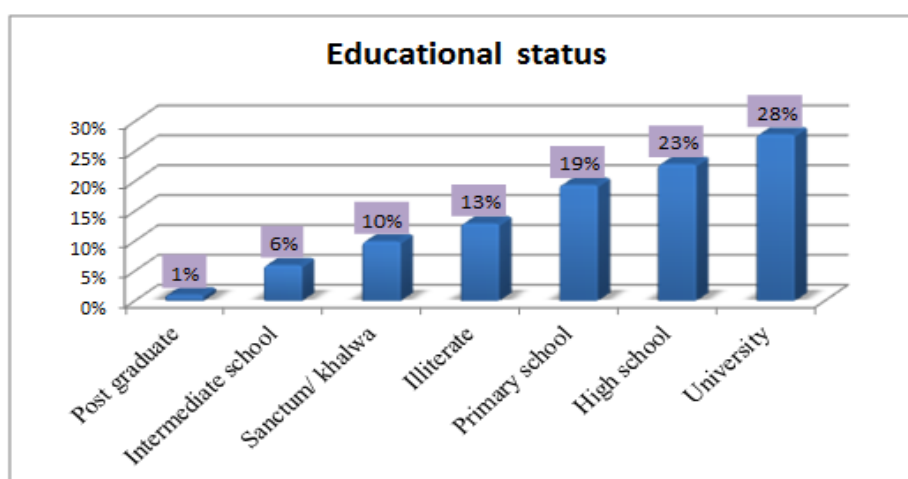


Fig. 4: Distribution of respondents according to educational level. Educational level high school and above was high (52%).

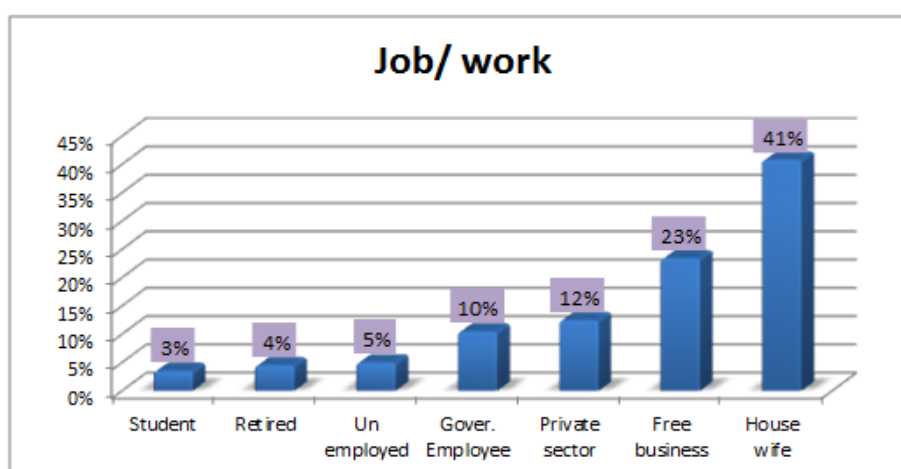


Fig. 5: Distribution of respondents according to job/work.

Majority of women in Sudan are only housewives (41%). People in Sudan rarely prefer to be employees as salaries are small. Free business (23%) provides better income and experience.

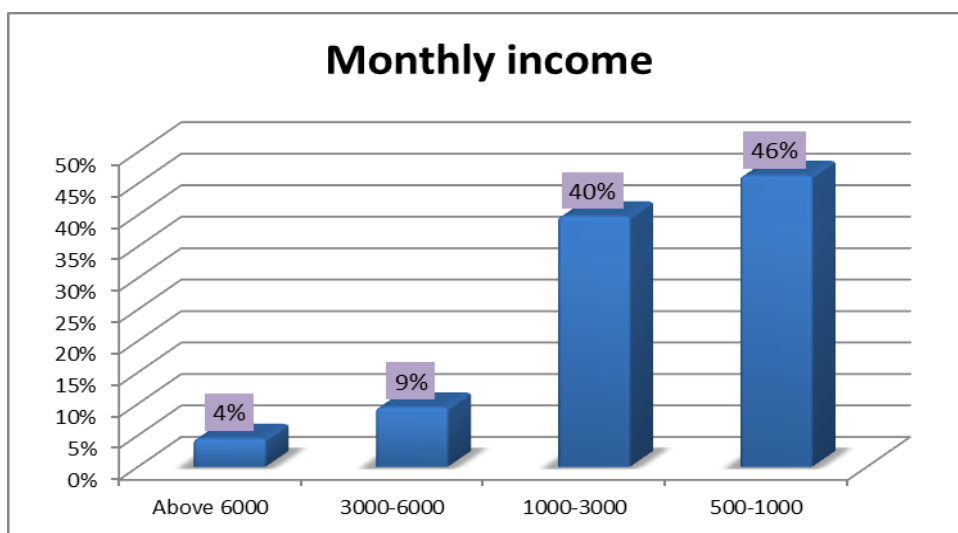


Fig. 6: Distribution of respondents according to monthly income in Sudanese pound.

Judged on developing countries economical standards majority (53%) of respondents had a relatively high income.

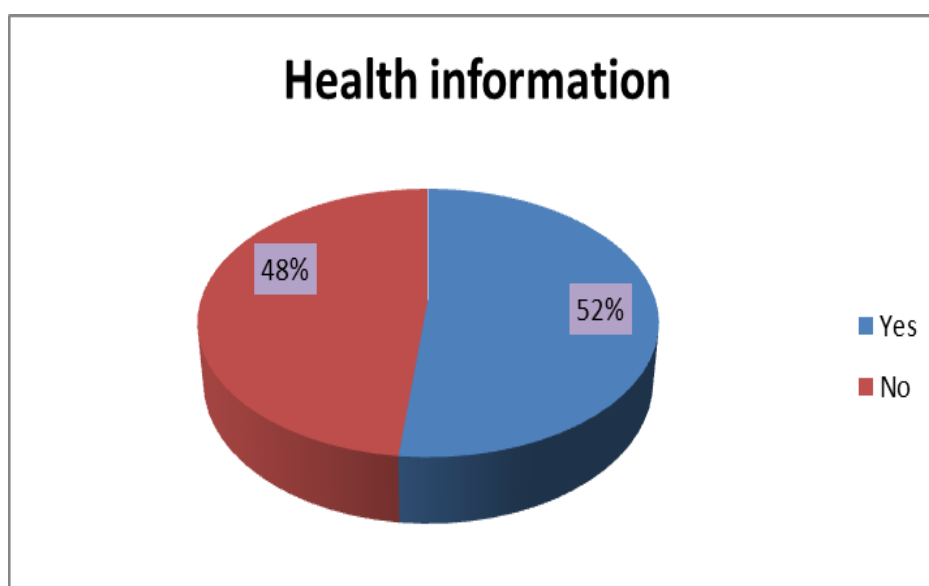


Fig. 7: Distribution of respondents according to their eagerness and interest to know more about their health.

The relatively high educational level (52%) of the respondents triggers more eagerness to gain more health information for assurance and to help in any needed decision about ones' own health.

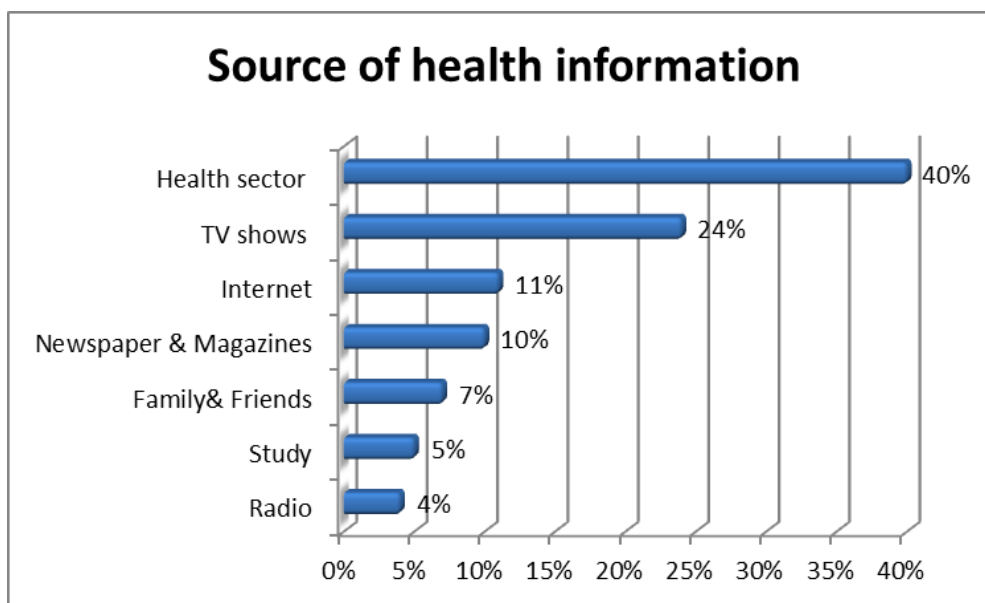


Fig. 8: Distribution of respondents according to their source of health information.

Healthcare providers and general public media are becoming an effective and widely used educational arm for general public.

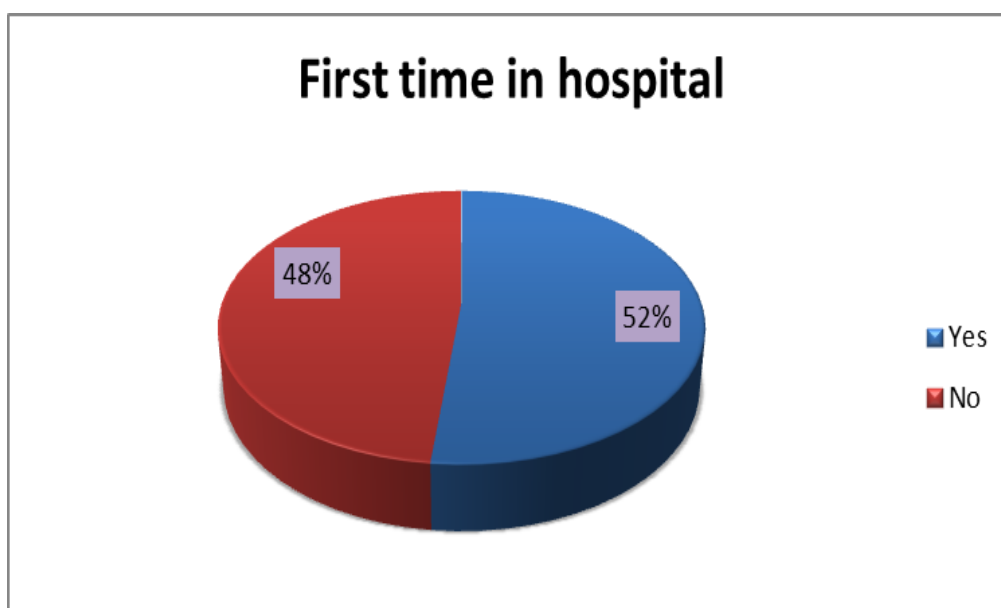


Fig. 9: Distribution of respondents according to hospitalization frequencies.

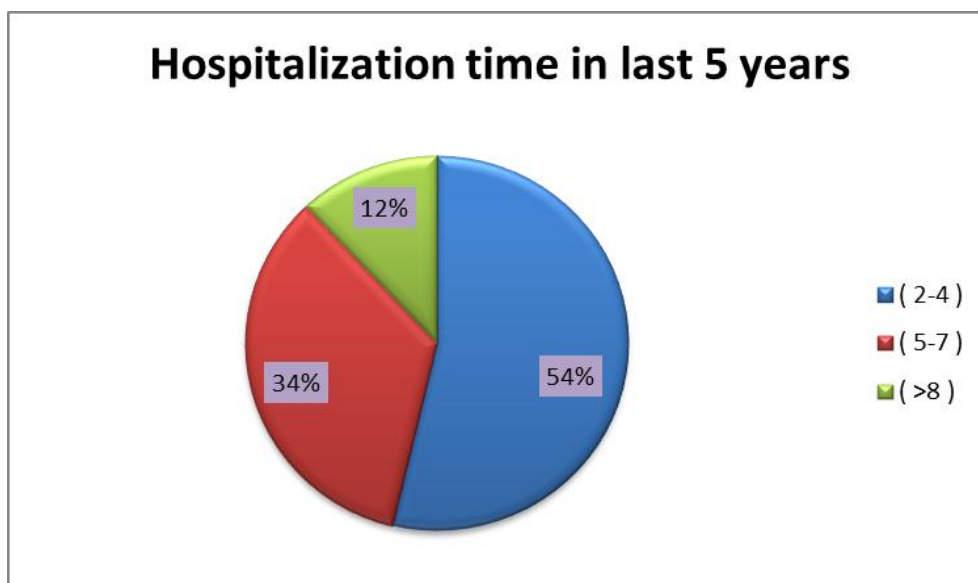


Fig. 10: Distribution of respondents according to times of hospitalization in the last 5 years.

Results showed that all respondents were familiar with hospitalization more than once, which makes their judgment of satisfaction sounder.

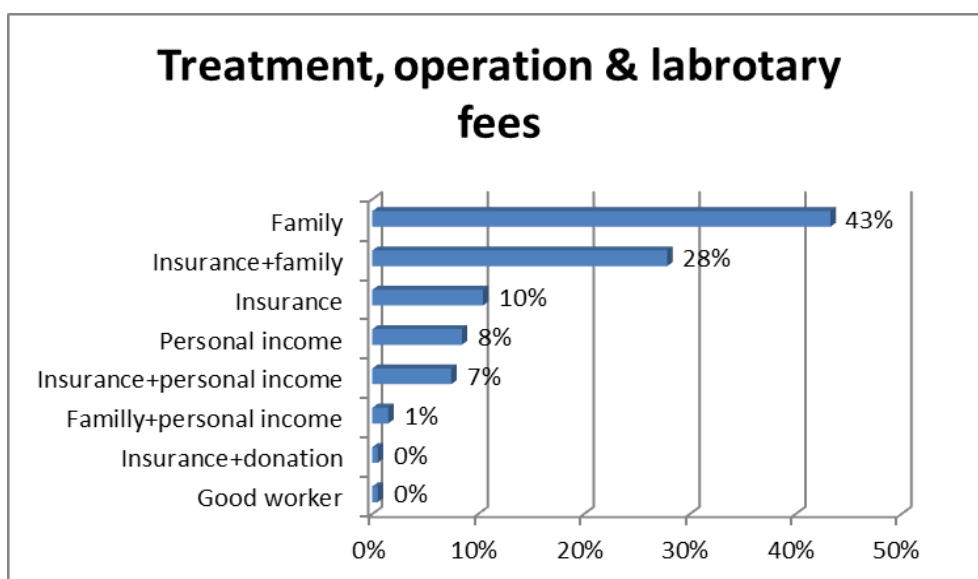
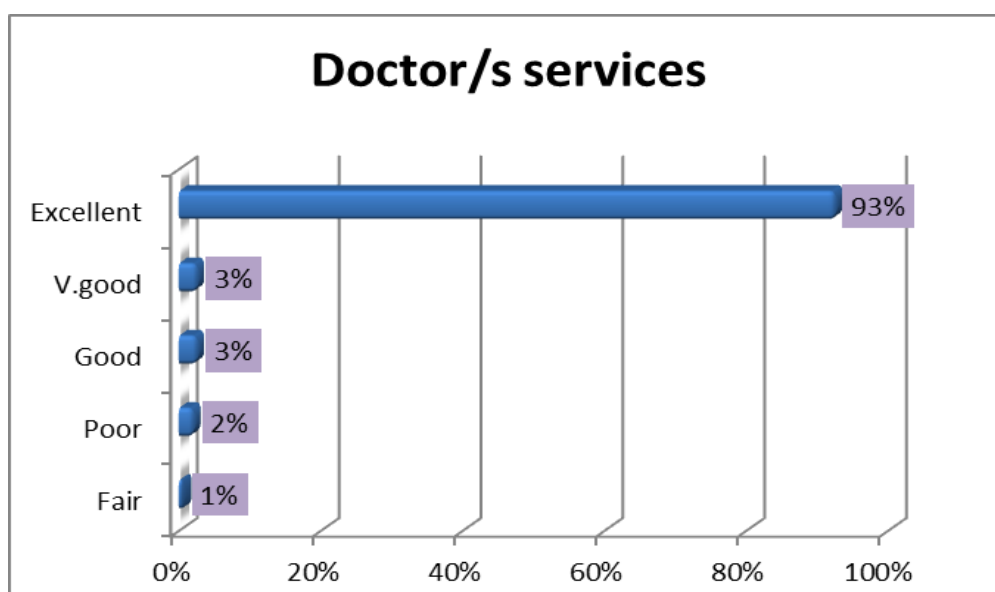


Fig. 11: Distribution of respondents according to payer of treatment fees and operation or laboratory checks for patient.

Families are usually the main support and fenders for hospitalization cost in oriental and Islamic domains. Insurance is taking over smoothly especially among peasants and employees. That might be the reasons behind their higher recorded contribution (81%).

In-Patient satisfaction with quality of healthcare**Doctors' service****Table (1): Distribution of respondents according to their respond to doctor service.**

Questions	Yes	No	Sometimes
1. Doctors communicate well and care for patient health state.	190	3	7
2. Doctors listen to patient complain carefully.	188	7	6
3. Doctors committed to explain to patient their health condition.	178	18	5
4. Doctors discuss the treatment plan and its possible effects with patient.	166	24	11
5. Doctors routinely come to check patient condition in the ward.	180	5	6

**Fig. 12: Distribution of respondents according to their satisfaction with doctor/s services.****Nurse Service****Table (2): Distribution of the respondents according to their response to nurse staff service.**

Questions	Yes	No	Sometimes
1. Nurse staff communicates and care for patient.	168	3	30
2. Nurse staff listens and care about patients complains.	173	7	21
3. Does the nurse help you when you need help?	169	16	16

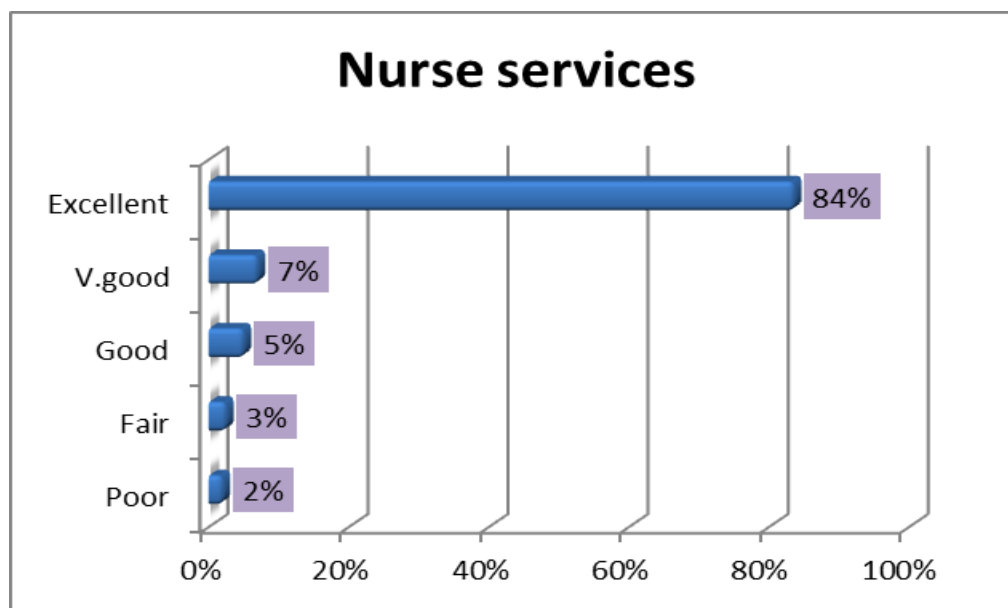


Fig. 13: Distribution of respondents according to their satisfaction with nurse/s services.

Medical laboratory investigation service

Table (3): Distribution of the respondents according to their response with medical laboratory investigation.

Questions	Yes	No	Sometimes
1. Difficulties facing patient to do medical laboratory investigation.	12	183	6
2. Difficulties facing patient in the radiation section.	11	183	7
3. Some medical investigation and x-ray, MRI, CT-scan is not available inside the hospital.	76	94	31

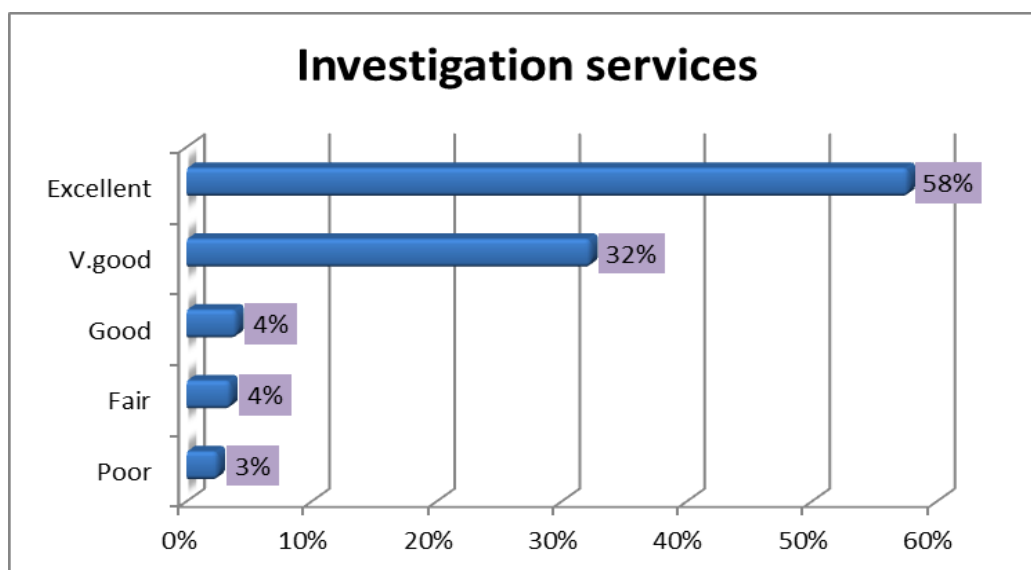


Fig. 14: Distribution of respondents according to their satisfaction with investigation/s services.

Pharmacy and pharmacist service

Table (4): Distribution of the respondents according to their response to pharmacist service.

Questions	Yes	No	Sometimes
1. Hospital pharmacist communicates well with patient or the co patient.	191	6	4
2. Hospital pharmacist or assistant ask about patient medication history.	17	182	2
3. Hospital pharmacist gives information, explanation, and contraindication of medication in a proper, clear & understandable manner.	40	160	1
4. Some medication is not available inside the hospital pharmacy.	117	58	26

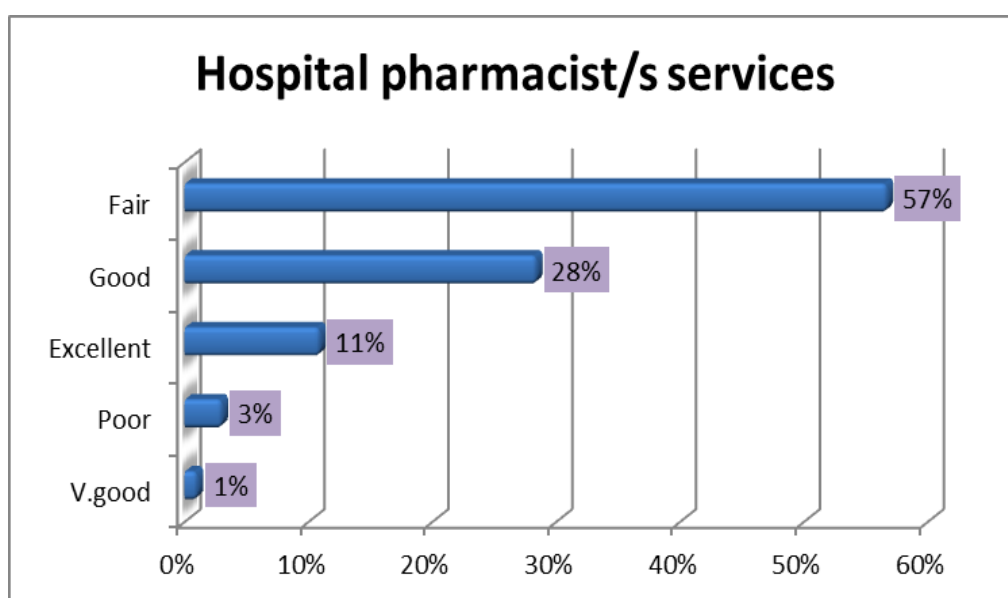


Fig. 15: Distribution of respondents according to their satisfaction with hospital pharmacist/s services in general.

Quality and safety of the hospital

Table (5): Distribution of the respondents according to their response to hospital services quality, safety.

Questions	Yes	No	Sometimes
1. Hospital service is satisfied for patient.	122	20	59
2. Patient feels safe inside the hospital and is not afraid from hospital acquired infection.	128	17	56
3. Hospital facilities from health staff and managers are available for patient to recover.	185	3	13

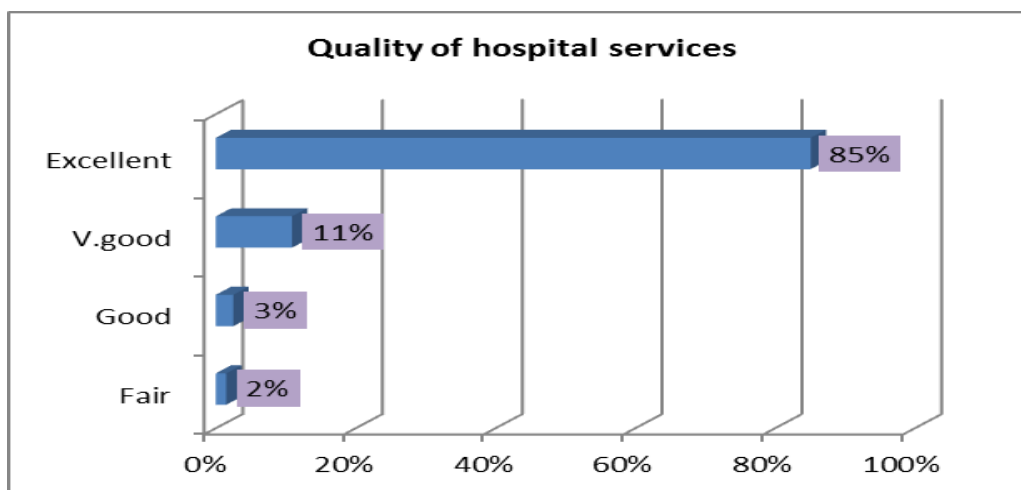


Fig. 16: Distribution of respondents according to their satisfaction with the overall hospital services.

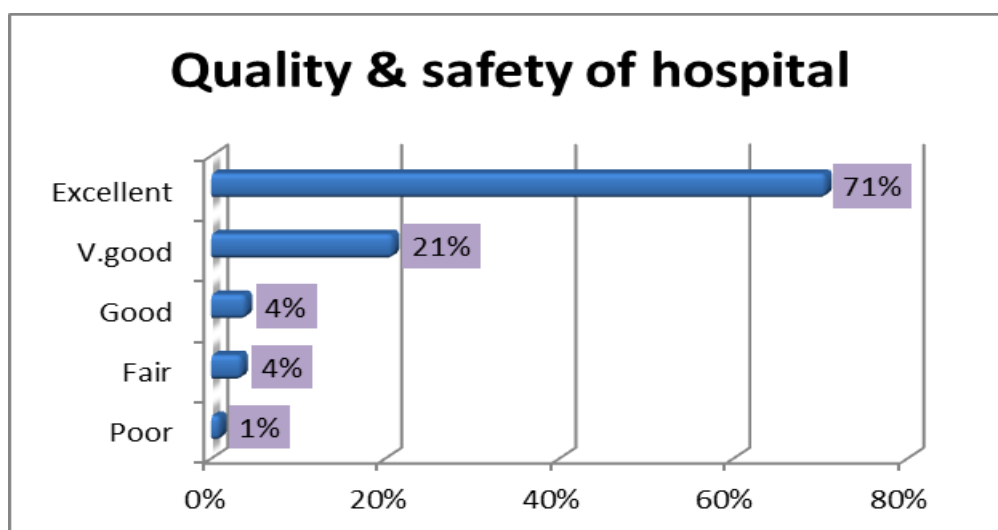


Fig. 17: Distribution of respondents according to their satisfaction of quality & safety hospital.

Table (6): Association between practice score and respondents socio-demographic characteristics.

Variable	Chi square (P- value)
Gender	0.26
Age	0.6
Marital status	0.84
Educational status	0.94
Job/work	0.41
Monthly income	0.94
First time as patient in the hospital	0.26
Have been hospitalized in the last 5years	0.9
Treatment fees & operation or laboratory checks	0.65

•Chi square p -value ≥ 0.05 that's considered as statistically significant.

•**Significant.

Table (7): Associations between respondents' satisfaction with doctors' and nurse service to their socio-demographic and basic characteristics.

Variable	Chi square (P- value)	
	Doctors service	Nurse service
Gender	0.31	0.01**
Age	0.7	0.16
Marital status	0.046**	0.89
Educational status	0.21	0.11
Job/Work	0.94	0.73
Monthly income	0.002**	0.29
Information about your own health/ Disease	0.69	0.22
First time as patient in the hospital	0.04**	0.18
Have been hospitalized in the last 5years	0.98	0.27

•Chi square p -value ≥ 0.05 that's considered as statistically significant.

•**Significant.

Table (8): Associations between respondents' satisfaction with medical laboratory investigation and pharmacist service to their socio-demographic characteristics.

Variable	Chi square (P- value)	
	Laboratory service	Pharmacist service
Gender	0.19	0.02**
Age	0.1	0.48
Marital status	0.62	0.95
Educational status	0.26	0.92
Job/Work	0.45	0.54
Monthly income	0.33	0.05**
First time as patient in the hospital	0.63	0.7
Have been hospitalized in the last 5years	0.33	0.93
Treatment fees & operation or laboratory checks	0.6	0.79

• Chi square p -value ≥ 0.05 that's considered as statistically significant.

• **.Significant.

Patient satisfaction has been used as a tool for measuring whether the available healthcare service meets patients' health needs and expectations. It also is considered as a valuable indicator of health service quality and effectiveness, and it also has an impact on patient recovery.^[24] In this study the objective was to assess the in-patients satisfaction with medical care provided in Soba University Teaching Public Hospital and the effects of patient's socio-demographic on patients' satisfaction level.

As regards the results related directly to the core objective of the study and as shown in Tables 1-6 and Fig. 12-17; 171(85%) of the respondents were found to have excellent satisfaction regarding hospital service in general. While 142 (71%) of the respondent were highly satisfied with the facilities of and safety in the hospital. A very big majority 187 (93%) of the respondents were found to have very high satisfaction level with doctors' service, and 169 (84%) were highly satisfied with nursing services. Though 116 (57%) of respondents were satisfied with medical investigation laboratory, yet only 22 (11%) were satisfied with pharmacy services.

As shown in figure 16, regarding respondents' satisfaction with the quality of healthcare it was found to be excellent (85 %). In comparison, a Nigerian study reported a lower rate of overall patients' satisfaction (66.8%).^[12] Also this study had shown that (71%) of the respondents were highly satisfied with the hospital facilities and safety (figure17). A Saudi Arabian study clearly reported that patients generally fluctuated positively towards the level of satisfaction with general practice healthcare.^[8]

As shown in Figure 2, age and lower educational level were positively correlated with satisfaction with health services.^[18,20,21]

As shown in tables 7 and 8; patients' gender was found to have significant correlation with their satisfaction with both nurse and pharmacists' services ($p=0.01$ and $p=0.02$), respectively. Marital status was found to have significant correlation with satisfaction with doctors services($p= 0.002$). Monthly income was found to have significant correlation with satisfaction with doctors' and pharmacists' services ($p= 0.002$, and $p=0.05$), respectively. Being first time as inpatient in hospital was found to have significant correlation with satisfaction with doctors' service ($p=0.04$). Two studies from Pakistan showed that the socio-demographic variables are of importance for evaluating patient satisfaction even after hospitalization.^[21,17]

As shown in Figure 12, the relationship of patients with doctors in this study was of a great concern according to its importance for the patient treatment, the results showed that respondents' satisfaction with doctors' services was very high (93%). That might be due to the fact that doctors spend ample time with the patients, they listen and reassure patients and sometimes they show empathy and discuss the treatment plan and the follow up for the patient condition. A Sudanese study done in Khartoum teaching hospital reported high levels

of patients' satisfaction with the Emergency Department healthcare staff performance and attitude especially with the doctors' services.^[3]

However, studies had shown that users of health facilities differ in rating their satisfaction of quality of care and that the socio-demographic factors influence the perceived quality of care in hospitals.^[4] Similarly the marital status was significantly related to patients' satisfaction score related to doctor services, as almost three quarter of respondent patients were married (84.6%); Fig. 3, and there is a significant association between marital status and satisfaction from doctor-patient care ($p=0.046$); Table 7.

A Study conducted in Pakistan reported that unmarried patients had significantly less satisfaction score as compared to married or separated patients which also have resemblance with results of previous studies conducted.^[18,21] Almost half of the respondents (48.3%); Fig.9; had been hospitalized more than one time because of their health state condition, also half of the respondents care about health information about their health conditions (51.7%) (Fig. 7) which is similar to percentage of respondents who had higher educational levels (51%) (Fig. 4). Both previous hospital admissions and care about disease information, are significantly associated with Doctors' services ($p=0.04$, $p=0.002$) respectively (Table 7). These results are comparable to those reported in a study done by Quintana, et al., 2006; show that patient previous admission and information associated with patient satisfaction and comfort with hospital services.^[18]

The respondents' satisfaction with nurse services in this study were also excellent (84%), Fig. 13, regarding the fact that nurses are with the patient most of the time taking care of their medical treatment and being helpful concerning physical comfort also they respect patients' values, preference and expressed needs (Table 2). According to the results females were almost two third of the respondent patients (62.2%) (Fig.1) and the males are one third, large female number compared with male is that a whole department was just for female which is Obstetrics and Gynecology department. There is significant association between the gender and the nurse services ($p=0.01$) Table 7, this relation could be related to the fact being a female, having less education were significant predictor for being high satisfied.^[24] Or that the majority of the nursing staff is females which make the respondent females feel more satisfied, comply with Quintana, et al; related gender to patient comfort.^[18]

Age of respondent is found to be of no significant association with any dimension in the study but what is noticed, is that more than half of the patient interviewed are less than 40 years old (Fig. 2), the majority of respondents were female in the reproductive age and (40.8%) (Fig. 5) of the respondent are house wives. This is contrary to the results of many other studies.^[18,21,22]

In the recent years, the traditional role of hospital pharmacist from a medicine dispenser has taken to the bedside care and pharmaceutical care planning. Furthermore, unlike past, multidisciplinary team approach (i.e. physician, pharmacist, nurse and allied health care professionals) is adopted to treat patient. With the increase in the pharmacist job demands the patient expectation also increases.^[25]

During the period of the study there were no clinical pharmacist attending in the wards of Soba University Hospital and the hospital pharmacist work framed to be just inside the hospital pharmacy performing the classical dispensing practice, as the pharmaceutical care mode of pharmacy practice is yet rudimentary in Sudan. Patients might have expecting more than just the dispensing act from the hospital pharmacists.

Moreover, the mere dispensing system likely does not help the pharmacist to be in direct contact with the patient and inform them with reliable information of their medication and show rapport. Vast number of the respondents` agreed that pharmacist had good communications (Table 4). A satisfied patient with the hospital pharmacy services will result in better patient communication, which will ensure better adherence and better therapeutic outcomes later on.^[25]

As shown in Fig. 15, respondents` satisfaction with pharmacists and pharmacy service was low (50.7%). The most important thing is the availability of the medications inside the hospital pharmacy which reflect the pharmacy service for patients. Most of patients do not reach the hospital pharmacy and their real problem is with the cost and availability of medication. The necessity of different dosage forms of medicine and paramedical items all of those are major concern for patient and they expect to be available inside the hospital pharmacy. But as shown in table 4, (58.2%) of the respondents do not quite often find their medication in the hospital pharmacy.

The poor availability and unaffordable medicines prices are mostly connected with pharmacy services. A Nigerian study^[5] reported that only (56%) of their studied patients were satisfied with pharmacy service. However, a study by Gady and Reichert, 2014; reported a very high rate of satisfaction (77.4-100%) with every survey item regarding satisfaction with pharmacy and pharmacists' services.^[26]

As shown in Fig.14; (73.2%) of respondents were satisfied with services rendered at the laboratories. To be incisive, health insurance has a role on how patient are insatiable because it does not cover all the expenses that they stand in need for their treatment. In this study a wide number of patients do not have insurance and they depend on their personal income and their family members to cover cost of medications for them. It's laborious to take all payments without insurance. This ultimately leads to poor satisfaction.

Patient satisfaction with health facilities depends on satisfaction with healthcare, the higher the satisfaction with care the higher the satisfaction with the individual facilities.^[22]

Respondents who have baccalaureate degree and above were almost 29% (Figure 4). This means that almost half (48.3%) of the respondent were less educated. A Nigerian study reported that patient with high level of education are less satisfied.^[12] While high satisfaction of less educated respondent inpatients was reported by many studies.^[18,20]

As mentioned, the overall satisfaction in the study was excellent and that the hospital staff is organized. Patients had high level of satisfaction that is considered very good, especially in the area of provider-patient communication and that they had good level of satisfaction from the hospital environment.

Also a very important dimension reported in a Pakistani study,^[18] is that the comfort of hospitalized patients leads them to feel satisfied and ultimately improves their health status. Satisfaction is a subjective variable that is difficult to appraise. Though patients' opinion is valuable as patient's response to the services and effort done by healthcare providers is used as indicator for the quality of healthcare service. It helps to understand the extent to which perceptions were related to respondents' own experiences with health services, as well as their perception about the different dimension of healthcare services in the hospital setting.^[27] An important parameter of the efficiency of the healthcare services is the laboratory investigation as patients expect to find all their ordered medical investigation inside the

hospital even the radiation (X-ray, CT scan, MRI). As reported by Ofilia, et al., 2006; patients had good satisfaction from investigations laboratory service and satisfied with X-ray unit, but had low satisfaction from pharmacist service.^[5]

CONCLUSION AND RECOMMENDATIONS

The overall in-patient satisfaction with quality of healthcare provided in Soba University Hospital was found to be high. Also the majority of the respondent was highly satisfied from hospital safety and facilities, Doctors` service and Nurses` services. While half of the respondents were moderately satisfied from medical laboratories and technician services, pharmacy and pharmacist services showed the lowest rate of satisfaction from the respondents.

The great responsibility of taking care of patients should be put in to consideration.

- Improve all the facilities in the hospital specially sanitation and cleanness, elevators which is a very important thing that help patient to feel safe and comfort.
- Pharmacy service should consider providing all the medication and para-medication needed by patients inside the hospital.
- Empowerment the role of clinical pharmacist.
- The availability of all medical laboratory investigation services in the hospital.

AKNOWLEDGEMENT

Authors would like to thank Soba University Teaching Public Hospital management, doctors, pharmacist, nurses, laboratory investigation labs technicians and patients for their cooperation.

Conflict of Interest

Study authors have No conflict of interest to declare.

REFERENCES

1. Xiao H, Barber JP. The Effect of Perceived Health Status on Patient Satisfaction. Value in Health:ISPOR, 2008; 11(4): 719-725.
2. Jafari Kelarijani SE, Jamshidi R, Heidarian AR, Khorshidi M. Evaluation of factors influencing patient satisfaction social Security hospitals in Mazandran province, North of Iran. Caspian J Intern Med, 2014; 5(4): 232-2.

3. Mohammed HA, Alttom AR. Customers Satisfaction with health Services Provided by Emergency Departments of federal Teaching Hospitals, Khartoum. Sudan J Public Health, 2006; 1(July): 207–212.
4. Alrubaiee L. The Mediating Effect of Patient Satisfaction in the Patients Perceptions of Healthcare Quality Patient Trust Relationship. IJMS, 2011; 3(1): 103–127.
5. Ofili AN, Ofovwe CE. patients` assessment of efficiency of services at ateaching hospital in adeveloping country. Ann Afr Med, 2005; 4(4): 150–153.
6. Ware GW. Patient Satisfaction Surveys. Practice Strategies, 2003; (4): 1-4 (<http://pdfs.semanticscholar.org>)
7. Powell L. Patient satisfaction surveys for critical access hospitals. In: Powell L. Patient satisfaction surveys. Why evaluate patients` satisfaction. Idaho, Mountain states group, Inc, 2001; 2-4.
8. Almoajel A, Fetohi E, Asharmani A. Patient Satisfaction with primary health care in jubail city, Saudi Arabia. World J Med Sci, 2014; 11(2): 255-264.
9. Boyer L, Francois P, Doutre E, Weil G, Labarere J. Perception and use of the results of patient satisfaction surveys by care providers in a French teaching hospital. Int J Qual Healthcare, 2006; 18(5): 359–364.
10. Vadhana M. Assessment of patient satisfaction in an outpatient department of an autonomus hospital in phenom penh, cambodia. Public Health Management. [M.P.H M Thesis in 20 Science in International Cooperation Policy] Ritsumeikan Asia Pacific University, 2012; 1–97.
11. Aliman NK, Mohamad WN. Perceptions of Service Quality and Behavioral Intentions: A Mediation Effect of Patient Satisfaction in the Private Health Care in Malaysia. IJMS, 2013; 5(4): 15–29.
12. Iloh GU, Ofoedu JN, Njoku PU, et al. Evaluation of patients' satisfaction with quality of care provided at the National Health Insurance Scheme clinic of a tertiary hospital in South- Eastern Nigeria. Niger J Clin Pract, 2012; 15(4): 469–74.
13. Thiedke CC. What Do We Really Know About Patient Satisfaction?. Fam Pract Manag, 2007; 14(1): 33–36.
14. U.S. Department of Health and Human Services. 2000. Healthy People 2010. Washington, DC: U.S. Government Printing Office. Originally developed for Ratzan SC, Parker RM. 2000. Introduction. In National Library of Medicine Current Bibliographies in Medicine: Health Literacy. Selden CR, Zorn M, Ratzan SC, Parker RM, Editors. NLM Pub. No. CBM 2000-1. Bethesda, MD: National Institutes of Health, U.S. Department of

Health and Human Services.

15. Gage H, Crow R, Hampsons, Hart J, et al. The measurement of satisfaction with healthcare: Implication for practice from asystematic review of the literature. *Health Technol Assess*, 2002; 6(32): 1-250.
16. Andaleeb SS. Service quality perceptions and patient satisfaction: A study of hospitals in a developing country. *Soc Sci and Med*, 2001; 52: 1359-1370.
17. Adams RJ, Hill CL, Stock NP, Wilson DH. Health literacy. *Aust Fam Physician*, 2009; 38(3): 144–146.
18. Quintana JM, González N, Bilbao A, et al. Predictors of patient satisfaction with hospital health care. *BMC Health Serv Res*, 2006; 6: 102. <https://doi.org/10.1186/1472-6963-6-102>.
19. Parasuraman A, Ziethaml V, Berry LL. A Multiple -item Scale for Measuring Consumers Perception of Service Quality. *J Detailing*, 1988; 62(1): 12-40.
20. Young GJ, Desai KR. Patient satisfaction with hospital care: Effects of demographic and institutional characteristics. *Med care*, 2000; 38(3): 325-334.
21. Afzal M, Rizini F, Azad AH, et al. Effects of demographic characteristics on patient`s satisfaction with health care facility. *JPMI*, 2014; 28(2): 154-160.
22. Abusalih H. Inpatients satisfaction with physician services in Khartoum State hospital wards, Sudan. *GJMEDPH*, 2016; 5(2): 1-5.
23. Chen H, Meina L, warg J, et al. Factors influencing inpatients satisfaction with hospitalization service in public hospitals in shanghai, people`s Republic of china. *Patient prefer Adher*, 2016; 10: 469-477.
24. Jafar A. Alasad and Muayyad M. Ahmad Patients' satisfaction with nursing care in Jordan. *Int J Qual Healthcare*, 2003; 1(6): 279-285.
25. Gady SE, Reichert H,. Evaluating pharmacy services satisfaction of an inpatient psychiatric unit. *MHC*, 2014; 4(6): 296-300.
26. Alturki M, Khari TM. A study investigating the level of satisfaction with the health services provided by the pharmacists at ENT hospital, Eastern Region Alhasah, Kingdom of Saudi Arabia. *JSPS*, 2013; 21(3): 255-260.
27. Smith PC. An Analysis of Survey Data from Eleven Countries Finds That 'Satisfaction' With Health System Performance Means Many Things. *Health Aff*, 2013; 32(4): 734–742.