Impact of Process Improvement on Patient Satisfaction in Public Health Care Facility in Pakistan

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Abstract: Quality of Service delivery in health sector is the most ignored area in Pakistan. Process inconsistencies generally have not been perceived as a major problem in public health facility in a typical developing country like Pakistan. The study will analyze the outcomes of process improvement in public health care facility resulting in achieving patient satisfaction. This study comprises of three sequential phases. First phase consists of identifying discrepancies between Quality of Services and its effects on Patient Satisfaction. Second phase will deal with understanding determinants of inconsistencies in health care system, particularly in terms of process performance. Finally a strategy will be evolved on the basis of research with a view to reduce process deficiencies and to evaluate existing inconsistencies.

Purpose: The main focus of study will be on the measurement of Clinical Quality Outcome of Public Health Care Facility. This research will suggest the mechanism to enhance hospital performance on selected indicators of Clinical Quality associated with quality improvement implementation in hospitals. A strategy will be adopted on basis of research to induce efficiency in processes and to assess overall improvement.

Research Methodology: Data collection will be achieved through questionnaire, interviews (doctor, patient, paramedics and relatives of patient), field visits and observations. Survey will be conducted amongst patients, doctors, paramedical staff and concerned people. Quality will be measured on the basis of selected and defined Key Performance Indicators (KPIs) containing both process and outcome of the process. Some suggested KPIs may include but not limited to Acceptability, Accessibility, Appropriateness, Capacity, Continuity, Clinical Focus/Effectiveness, Efficiency, Patient Focus, Sustainability and Timeliness. Specific (Research) questionnaire will also be established to increase effectiveness of research.

Research Findings: Research will show relationship of the process improvement on the level of satisfaction of patient in Public Health Care Facility. Research will also indicate the impact of outcomes on the patient satisfaction but also sustainable growth of respective hospital. Study will also highlight core discrepancies in the Quality of health services in Pakistan and a strategy will be developed to minimize potential and present problem areas in the public health care facility.

Value of Paper: Utilization of health services is an important policy concern in most Developing Countries like Pakistan, reflecting both efforts to improve health outcomes and to meet international obligations to make health services broadly accessible. This research will help policy makers to devise effective health care operational plans for the overall betterment of hospital environment leading to society, country and humanity in a broader context.

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Abstract

Quality of Service delivery in health sector is one of the most ignored areas in Pakistan. Process inconsistencies generally have not been perceived as a major problem in public health facility in a developing country. This study will analyze the outcomes of process improvement in public health care facility in form of Patient Satisfaction. This research comprises of three sequential phases. First phase consists of identifying discrepancies between Quality of Services and its effects on Patient Satisfaction. Second phase will deal with understanding determinants of inconsistencies in health care system, particularly in terms of process performance. Finally a strategy will be evolved on the basis of research with a view to reduce process deficiencies and to evaluate existing inconsistencies.

1. Objective

The main focus of study will be on the measurement of Process Quality Outcome of a Public Health Care Facility. This research will suggest the mechanism to enhance hospital performance on the basis of selected indicators of Process Quality. Proposition will be given on the basis of research to stimulate overall improvement in delivery of health care service.

2. Scope

This research is limited to patients and their attendants in public sector hospitals. Sample size consists of four hospitals, from twin cities (Rawalpindi and Islamabad). The study is conducted on patients of Emergency and Orthopedic department. The Study will focus on Structure and Process Indicators for instance, Acceptability, Accessibility, Patient Centeredness, Competence, Appropriateness, Timeliness and their effects on Patient Satisfaction. Other indicators of Structure, Process and Outcome are not part of this study.

3. Introduction

Adequate utilization of health services is an important policy concern in most Developing Countries like Pakistan. It reflects efforts to improve health outcomes and meet international standards to make health services broadly acceptable. This research will help policy makers to devise effective health care operational plans for the overall betterment of hospital environment leading to society, country and humanity in a broader context.

3.1 Patient Satisfaction

Not much work has been done to measure Patient Satisfaction in public sector hospitals of Pakistan. Patient Satisfaction is defined in terms of the degree to which the patient's expectations are fulfilled. It is an expression of the gap between the expected and perceived characteristics of a service (Lochoro, 2004). Measuring Patient Satisfaction depends on using the "accurate measures because it comprises of standards that incorporate dimensions of technical, interpersonal, social, and moral aspects of care" (Kane et al., 1997).

3.2 Donabedian Philosophy

This research is an attempt to formulate a conceptual framework by means of a categorization scheme. It encompasses selected indicators that can measure outcome in the form of Patient Satisfaction. Kelly and Hurst in *Health Care Quality Indicators Project Conceptual Framework Paper* states that One such method that is accepted globally is given by Donabedian which describes indicator as being structure, process or outcome in nature (Donabedian, 2003; Donabedian, 1980).

Structure indicators are based on healthcare system that constitutes of doctors and paramedic staff, training, equipment collectively. The health care system and the individuals in society and their interaction constitute Structure (van Driel et al., 2005).

Mere existence of Health care does not ensure appropriateness of processes and their outcome.

The non medical determinant of health care system which is measured under Structure is Physical Infrastructure that constitutes the environment and availability of spacious rooms.

Process indicators of quality refer to the things done to and for the patient by practitioners in the course of treatment. Process relates to interaction between the patient and health care provider (van Driel et al., 2005). Patient Satisfaction is the actual measure of clinical services that are being offered. The main interaction between Health Care System and Patients is measured by selecting following Key Process Indicators (Kelly et al., 2006)

3.2.1 Appropriateness: It is considered as performance dimension and relates to providing healthcare based on clinical needs. Appropriateness should be based on clinical evidence of the

effectiveness of the process concerned and 'consistent with current professional knowledge' (IOM, 2001).

Appropriateness comprises a series of dimensions essential for addressing the interpretation of performance as measured through indicators. Those dimensions include provider and patient expectations, local norms for the provision of medicine, ethical aspects and, most certainly, issues of social equity (Vahe et al., 2002)

3.2.2 Timeliness: It is the degree to which patients can receive care as quickly as possible and existence of such coordination where Patients are facilitated from one provider to another and different stages of procedures (Shortell, 1976). The clinical elements that are measured consist of time taken in laboratory diagnosis, duration in which X-rays are provided works, and waiting time for first response by hospital.

3.2.1 Acceptability: Kelley and Hurst identify Acceptability as conformity to the realistic wishes, desires and expectations of healthcare users and their families (Donabedian, 2003). It is measured from responses of Patients on their satisfaction level and extent of their understandability of medical procedures that are being offered.

3.2.3 Patient Centeredness: It refers to the partnership and relationship that is established among doctor patients and their families. Patient is considered the most central figure to the functioning of the health care system (Kelly, 2006). The indicator is measured in terms of doctor care and involvement about sharing their findings. It also incorporates Patients' views and suggestions.

3.2.3 Staff Competence: Competence constitutes the training and abilities of health care staff in term of technical and cultural aspects and their ability of communication with patients (Kelly, 2006).

There is considerable variation in perceived quality of care between various dimensions of modern health services, and between users and non-users (Baltussen et al., 2005).

Structure and Process have direct impact on outcome . Donabedian provide framework which connect Structure with process and process with outcome

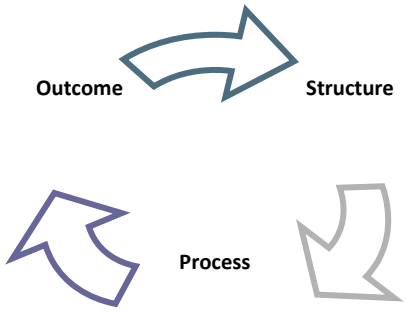

Figure 1.0: Representation of Donabedian Philosophy

In this research Outcome is determined in the form of Patient Satisfaction.

Level of Patient Satisfaction is determined by utilizing the selected indicators under the segregation of Structure, Process and Outcome, as given by Donabedian. Satisfaction is essential if we have to get people utilize services, comply with treatments and improve health services (Lochoro, 2004). On the basis of this literature Review conducted a three tier hypothetical model is conceptualized as given below

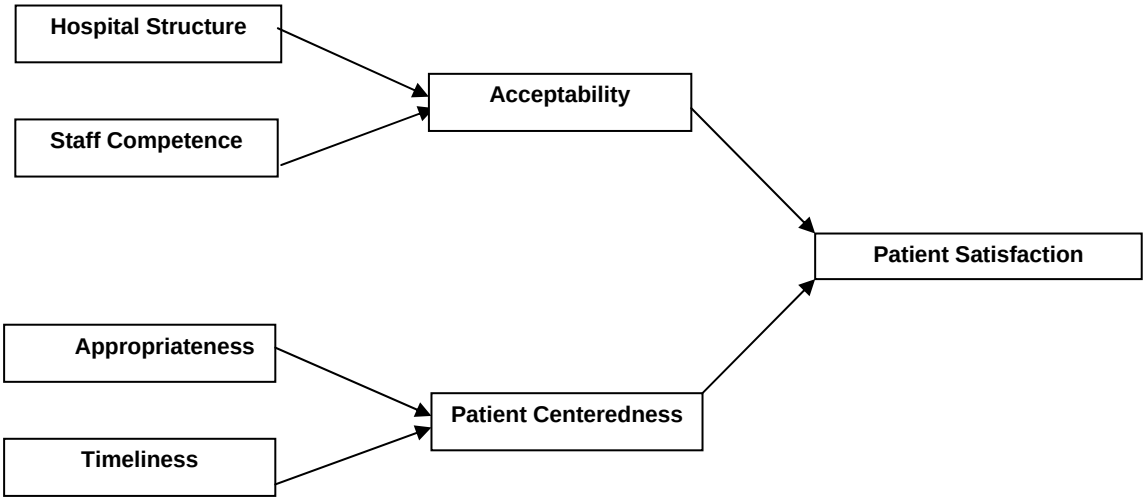

Figure 2.0: Pictorial Depiction of Hypothesized Three Tier Model on Patient Satisfaction

5.0 Research Methodology

Initially 7 variables are selected for study. These variables are divided in to 3 tier structure model. In first tier affect of two independent variables are selected and their relation ship is studied with dependent variable. In second tier same procedure is adopted but variables are different .In third tier dependent variable of second and first tier are taken as independent variables while Patient Satisfaction is taken as dependent variable

5.0.1 First Tier Independent Variables
Hospital Structure and Staff Competence
5.0.2 First Tier Dependent Variables
Acceptability
5.0.3 Second Tier Independent Variables
Appropriateness and Timeliness
5.0.4 Second Tier dependent Variables
Patient Centeredness
5.0.3Third Tier Independent Variables
Patient Centeredness and Acceptability
5.0.3 Third Tier Dependent Variables
Patient Satisfaction

5.1 Hospital Structure and Acceptability among Patients

In an ideal scenario it is meeting or exceeding health care user's expectations. Acceptability is delineated as one of key dimension of Patient Satisfaction (Kelley et al., 2006). Research indicates that Structure assessment is done independently of process. Hypothetical model in figure 4.0 attempts to relate Structure with Acceptability. Proper structure will result in better medical care (Donabedian, 2005) .The assumption is made on basis of these studies that better structure will enhance acceptability among patients.

H1: Adequate Hospital Structure enhances Acceptability among patient

5.2 Competence of Hospital Staff and Acceptability among Patients

Competence refers to capability of hospital staff while interacting with patients. Competent health care personnel are assumed to improve effectiveness (Lochoro, 2004). This leads to postulation that competency will increase Acceptability among patients.

H2: Competence of Hospital Staff enhances Acceptability among patient

5.3 Appropriateness and Patient Centeredness

Appropriateness is defined as extent to which hospital health care facility are significant in satisfying needs of patients (Kelley et al., 2006). Studies reveal that if resources and services are properly distributed among patients it improves Patient Satisfaction. This research observes impact of Appropriateness on Patient Centeredness, as it is assumed that Appropriateness influence Patient Centeredness which in turn has an effect on Patient Satisfaction.

H3: Process Appropriateness improves Patient Centeredness

5.4 Timeliness and Patient Centeredness

Timeliness is defined as an extent to which patients are receiving care without delay. Timeliness includes factors such as waiting times, time of admission etc. In many regions it is considered as closely coupled with patient centeredness (Kelley et al., 2006). Timeliness is considered to provide health care as need is recognized. Timeliness includes waiting time spent while waiting for doctor, waiting time at emergency, time spent for waiting laboratory test and their results. Delay makes patients and their attendant displeased (National Healthcare Quality Report. 2005). So it can be postulated:

H4: Timeliness Improves Patient Centeredness.

5.5 Acceptability among Patients and Patient Satisfaction

Acceptability is compliance to the rational requirements, requests and prospect of healthcare users (Donabedian, 2003). If a person is satisfied from current infrastructure of healthcare services chances of future utilization are more certain. Service oriented model are more adequate to patients (Berler et al., 2005).

H5: Acceptability among patient increase Patient Satisfaction

5.6 Patient Centeredness and Patient Satisfaction

Patient centeredness is considered as one of core quality dimensions. It proposes to place patient at center of health care delivery process. It is based on patient experience of care process (Kelley et al., 2006). It is defined as partnership between all stakeholders of health care system. It refers to individual preferences of an individual patient. It is assume to reduce misdiagnosis. Studies reveal that it helps to create balance in utilization of medical service. Patient Centeredness is assumed to decrease cost and cost of medical resources. But in some cases it is found to increase cost of provider. Soul of Patient Centeredness is communication. Communication make patient satisfied as he felt that attention is paid to him (National Healthcare Quality Report. 2005). Thus it can be assumed that patient centeredness can be associated with Patient Satisfaction.

H6: Patient centeredness increase Patient Satisfaction

5.7 Data Collection Method

Methodology adopted for conducting research is initiated with interviews of unstructured type. Unstructured interviews serve to highlight issues in service delivery process.
Patient Satisfaction surveys are designed to measure current level of Patient Satisfaction. These surveys include some selected KPI's like: Structure, Acceptability, Appropriateness, Patient Centeredness, Competence, Appropriateness, Timeliness and Patient Satisfaction.

Results of survey will assist in analyzing current process status of health care delivery. It is also aimed at identifying discrepancies in quality of care framework. The result will be evaluated to improve services provided in hospitals of Pakistan

5.8 Data Collection

Overall 160 health care users participated in survey. Results of survey will be themes for unstructured surveys. Unstructured interviews are taken from 4 health care professionals. Data will be collected from four major public sector hospitals of Islamabad and Rawalpindi.

5.9 Limitation

Survey was conducted in emergency and orthopedic departments of public sector hospital only due to time constraints.

6.0 Finding and Analysis

Respondent reported to wide range of process KPI's addressing eight domains in survey. Three main regions of patient interaction are considered in every hospital. The most frequently mentioned areas are Timeliness, Drugs availability, waiting place conformability.

6.1 Affect of Hospital Structure and Competence of Hospital Staff on Acceptability

Suggested model was tested by using correlation. In first tier impact of patient perception of hospital Structure and Staff Competence is observed in reference with Acceptability. Correlation result of 0.6 show positive association between hospital Structure and Acceptability among patient.

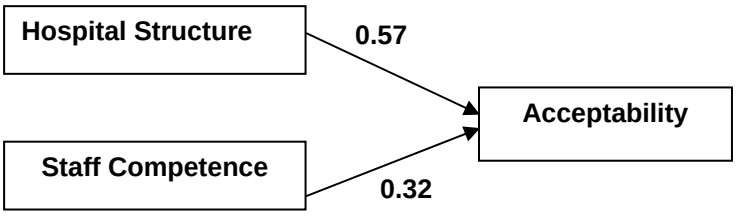

Figure 3.0: Correlations of First Tier

This in turn depicts Patient Satisfaction with current hospital infrastructure. Structure of hospital is measured on the basis of availability of medical health, building, cleanliness of room and availability of beds. Most of the results indicate positive relationship except availability of beds. Unavailability of bed indicates that hospital does not have enough resources to cope with growing demands of population. As limited space i.e. 16 beds were available in surgical wards of one of public sector hospitals. This results in delay of admission. Patient can only be provided with beds when beds are free. In some cases patients have to wait for months in order to get admission into hospital.

Perceived competence of staff is measured with two parameters: knowledge of nurses, and competence of doctors. 0.32 indicates weak correlation between Competence and Acceptability. Even though patients are satisfied as far as current staff is concerned but their acceptability rates are low. This can be attributed to other factors like availability of proper resources

6.2Relationship of Appropriateness and Timeliness with Patient Centeredness

In second phase of first tier Timeliness and appropriateness of process is measured in relation with patient centeredness.

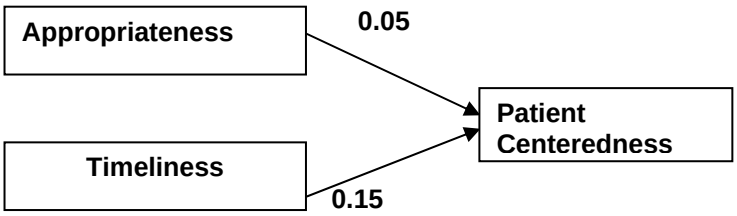

Figure 6.1: Correlations of Second Tier

Negligible correlation exists between Appropriateness and Patient Centeredness. This envisage in two alternatives. First option is to reject two hypotheses H3 and H4. But literature review given above opposes this alternative. Second option can be that less incompatible hospital process makes it less patient centered. Compatibility of process is measured through constructs like availability of lady doctor, waiting place facilities and satisfaction with doctor prescription. Waiting place is identified as main problem area. Examination of waiting area shows problems regarding drinking water and availability of seats
One of most objectionable measure is Timeliness. Complaints associated with this KPI are: waiting time for laboratory test, X-rays, admission into hospital. Weak correlation of 0.15 between timeliness and Patient Centeredness shows that low level of Patient Centeredness can be delays in health delivery service.

6.3 Affect of Acceptability and Patient Centeredness on Patient Satisfaction

Third tier of hypothetical model shows correlation as give below

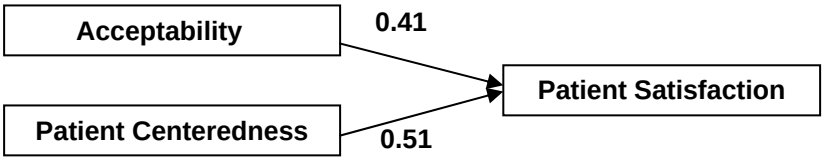

Figure 3.2: Correlation of Third Tier

Acceptability shows relatively weak relationship with Patient Satisfaction. This can be consequence of inadequate health care process which in turn has negative impact on patient satisfaction. This measure includes affordability, availability of resources, delivery of test results to patients, and explanation for reason for medical test. Another alternative is that patients are not capable of understanding test results and medical tests due to their low education level. Nearly 80% patients have no formal education level and only 15% have basic education. Assessment on basis of survey is not useful in this case. Observation base research may provide better result. Uneducated patients don't know about their rights and facilities they deserve from health care system.

All patients surveyed in general ward have income below $153 for month. Majority patients are from low income group nearly $61 per month for family of 5 to 8. In research response from this type of patients are vague. They are unable to identify problems. For them basic facility is to live. Some of surveys are rejected due to unawareness of patients.

Patient centeredness includes number of factors like availability of medicine in pharmacy, availability of time, getting attention of nurse and doctor listening skills.
Results were positive in this domain. Most of patients were happy with attitude of doctor, nurse and care provided by them. One of major complain in this area was unavailability of medicine at local pharmacy. Moderate relationship exists between patient centeredness and Patient Satisfaction. If medicines are available at local pharmacy result might be different. One basic problem identified in this area is unavailability of medicine at local pharmacy. Approximately 40 to 50 type of medicine are available at local pharmacy. All other medicine needs to be fetched from outside. In some cases medicine as minor as nausea syrup was unavailable. All other factors like attention by doctors and nurses, their attitudes, care provided by them shows positive results.

Affordability question is neglected as most of patients are treated free of cost. Public Sector Hospitals are relief for patients of lower income group who can not afford treatment on their own. Availability of grants for patients is again a cumbersome procedure which require a lot of time and in some cases patients do not live to the acceptance of grants.
Amalgamated view correlation along with problems areas are specified in form of figure:

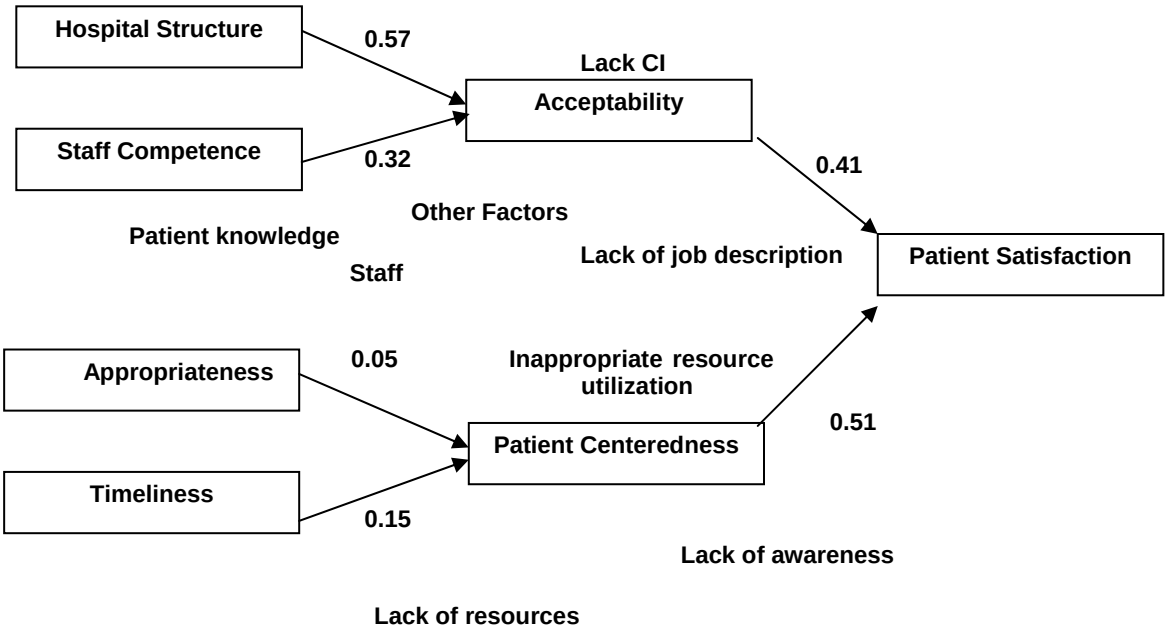

Figure 3.3: Cumulative Correlation along with Discrepancies

Conclusion

In many developing countries where basic necessity is to live, people often forget about quality of services. Identical behavior is observed in health care system. They are providing necessities required by patient. No arrangement is made to cater increasing demands of population. Public sector hospitals have resources but they are not managed appropriately. Doctors and paramedics have no knowledge about their job specification. Majority of patients i.e. nearly 80% surveyed are uneducated. Research in this type of environment should be observatory rather than survey based.

Management style should be participatory where all stakeholders like doctors, practitioners, paramedics, administration, patients and their attendants should be given chance to express their point of view. Departments of hospitals should be semiautonomous so they are able to make decision on their own.

This research shows that better structure of hospitals optimistically influence quality of health delivery process. Service characteristics effecting patient's perception of quality should be included while designing service. Majority of patients in public sectors hospitals are from lower income groups, service characteristics should be targeted toward lower income rather than elites. Hypothetical model given in research paper should be prepared by hospital to check index of customer satisfaction. Similarly financial infrastructure should be studied and linked with Patient Satisfaction index. Comparative analysis of all public sector hospitals of locality or country will be helpful. It will introduce healthy competition which will aim toward betterment of humanity in form of improvement in patient Satisfaction Index.

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Appendix

Correlation

	Struct	*Accep*	*Access*	*PatCent*	*Comp*	*Approp*	*TL*	*Psat*
Struct	1.00							
Acceptability	0.67	1.00						
Accessibly	0.43	0.26	1.00					
Pat Centered	0.67	0.69	0.32	1.00				
Competence	0.48	0.41	0.37	0.35	1.00			
Appropriateness	0.06	0.13	0.18	0.00	0.20	1.00		
Timeliness	0.24	0.45	-0.16	0.17	0.37	0.05	1.00	
Pat Satisfaction	0.20	0.16	0.28	0.23	0.21	0.44	0.01	1.00