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RESEARCH PAPER

Patients Satisfaction and Healthcare Delivery System in Public Sector Hospitals

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ABSTRACT

Health Care Delivery System (HCDS) in Pakistan has undergone through different phases. Studies have documented the role of this system in affecting the satisfaction level of patients in public sector hospitals. This study has attempted to examine the role of HCDS from another perspective of mediating variable. In order to examine the competence level of doctors and their behavioral aspects in dealing with their patients, General Satisfaction of patients has been used as a dependent variable, Task Performed By Doctors (TPBD) and Behavior and Time (BAT) have been used as independent variables and finally HCDS has been used as mediating variable. The study has been conducted in six districts of the Punjab selected amongst the three divisions. 120 hepatitis patients in each of these DHQs were interviewed and thus total of 720 patients were interviewed during this study. The results have indicated that HCDS has mediating effect on the basic relationship of dependent and independent variables. Health Care Delivery System in Pakistan needs attention of health policy makers, as it has very clear implications for patients' satisfaction.

KEYWORDS Behavior and Time, Health Care Delivery System, Mediation, Regression

Introduction

Hepatitis is the inflammation of hepatic tissues. It has major health concerns to immunity especially in developing countries in Asia (Zahoor *et al*., 2021). Pakistan is a country, where more than 15 million individuals have chronic hepatitis C and 21 million have chronic hepatitis B. Pakistan and Egypt account for 80% of the disease burden, with about 12 million people in Pakistan alone believed to have hepatitis B or C (Apex Report, 2018).

In Pakistan, healthcare services are provided at three levels: informal, public, and private. Hakims, religious healers, and traditional health practitioners provide informal healthcare services (WHO, 2003). Government/public hospitals are mostly free of charge and treat patients from low-income families. In contrast, the services offered by private sector hospitals can be classified as high, medium, low, or free of charge in terms of expense. Public healthcare services, on the other hand at all levels of care i.e., the primary, the secondary and finally the tertiary are available (Irfan and Ijaz, 2011). Furthermore, the majority of Pakistan's public tertiary care institutions are located in the country's main cities.

The structure of the Public Healthcare Delivery System in Pakistan is based on DHQs and THQs. Tehsil Head Quarters (THQs) serve population ranging from 0.5 to 1 million people. The majority of THQs have 40-60 beds. THQs provide basic and

comprehensive emergency, obstetric, and newborn care. They provide referral care to persons who have been overlooked by BHUs, and lady health workers. District Head Quarters (DHQs) are located at the area level and serve a population of 1-3 million people. DHQs provide basic, preventative, therapeutic, diagnostic, inpatient, and referral services. All DHQs treat patients referred by BHUs and Tehsil Head Quarters (Kurji *et al.,* 2016).

Because of the inefficiency of health sector for public, primary health care system has been delegated to NGOs for improving the quality of service delivery (Ali, Qazi, and Seuc, 2014). The Basic Health Units are the first level of public healthcare services offering institutions which are providing this facility to more than 61% of the rural population by certified paramedics. Based on their condition, patients are then sent to secondary and tertiary treatment.

The Pakistani government implemented measures such as hepatitis B vaccination as part of the Comprehensive Program on Immunization, or EPI, in 2009, but additional efforts are needed to identify the millions of people who have hepatitis but are unaware to fight against the disease effectively. Thus, screening is critical for early detection. Organizations may require employee pre-employment screening, educational institutions can encourage student screening, and the general public may decide on voluntary yearly examination to promote early detection, allowing for rapid treatment as well as disrupting the cycle of transmission and infection.

Avoiding high-risk behaviors such as unsafe injection practices involving the re-use of needles for injection, using unscreened blood for transfusions, avoiding the use of unsterile equipment for dental or surgical operations, and engaging in unsafe sex are all part of preventing hepatitis B and C (Ahsan *et al*. 2019). Hepatitis B vaccine is now accessible, making it a crucial tool in preventing new cases of the disease. Screening pregnant women for hepatitis B and guaranteeing safe delivery with the help of vaccination, which is accessible for those whose test results are positive, allowing patients to avoid mother-to-child transmission of the virus. Childhood hepatitis B vaccination, as part of national immunization programs, effectively prevents future infections (Samo *et al*. 2021). Because there is currently no equivalent vaccine for prevention of hepatitis C, the best strategy is to reduce the risk of infection by avoiding the high-risk behaviors described above and ensuring timely access to treatment for those infected, as hepatitis C is now essentially a completely curable infection (Zahoor *et al.* 2021).

Organizations rendering health care services can attain the objective of satisfying their patients with the help of better healthcare provisions while keeping the expectations of patients in mind, as well as continuously improving healthcare services. Due to lack of a standardized definition of "healthcare service quality" and the presence of numerous dimensions of service quality in the literature, there are multiple methods to define and operationalize the concept of patient expectations of service quality in the healthcare sector.

Even though there are few globally acknowledged studies on patient satisfaction published in Pakistan. In spite of it, evidence released from Pakistan has been incorporated in the literature of this study. However, none of these studies particularly sought to assess whether the basic model of patients' satisfaction and doctors' skill as well as their behavioral conduct established in earlier studies in free-of-charge Hepatitis clinics established in OPDs of public tertiary care hospitals is mediated by the structure of Healthcare Delivery System prevailing in Punjab, one of the largest province of Pakistan.

This study has been planned to keep in view the havoc of hepatitis disease for the Pakistani nation. Its main objective is thus aimed at analyzing the mediating role of Healthcare Delivery System as one of the important factors in examining the general satisfaction level of patients.

Literature Review

Hepatitis patient satisfaction, in particular, is never assessed in the public sector. Methodological problems, discrepancies, and the use of invalidated tools characterize the existing obscure research on patient satisfaction (Khattak *et al*., 2012). Furthermore, the outcomes of both national and international polls on patient satisfaction within Pakistan vary greatly. Grey literature research, on the other hand, showed a high degree of satisfaction among patients with public hospitals in Pakistan (Naseer *et al*., 2012).

Patient satisfaction has been discussed in literature from multiple perspectives including care given by the doctor, their supporting staff, the environment of clinics, and the treatment given to patients (Kagura *et al*., 2023). Javed and Ilyas (2018), has authenticated the findings of unsatisfactory state of health care services in Pakistan. Health care structure in Pakistan has undergone structural changes at the federal and provincial levels. In order to improve the working of health care institutions, some structural changes in the governing system of these institutions have also been introduced in Punjab. Moreover, the system run by the government in Pakistan is fragmented by the reasons of insufficient resources, inefficiency, and lack of specialty in functional working (Shaikhh *et al*., 2010). Lower spending of government on the public health is a major contributor to such disparities. According to World Bank, 2020, Pakistan spends 2.95% of its GDP on Public Health and has allocated 21% of its development budget to the public sector.

In this modern age, "patient-centered service" is the primary purpose of healthcare practitioners, and patients see themselves as consumers of these services. Patients are now more equipped to bargain with their doctors about their medical problems than in the past, thanks to greater healthcare knowledge (Aman-Ullah *et al*., 2023).

On this way, developed countries are well ahead of the underdeveloped countries. Unfortunately, this trend does not exist in Pakistan's "free" public sector hospitals. Almost 70% of Pakistanis use private sector healthcare facilities, which primarily operate on a "service fee" basis. (Ahmad *et al*., 2005). Moreover, unlike in other underdeveloped nations, doctors in Pakistan are not educated about the necessity of ethics and better communication with patients during their medical studies and various trainings. (Abioye *et al*. 2010). Dealing of those patients who visit hospitals from very poor, backward and uneducated segment of the society is a great challenge for the doctors. Understanding and making patients from low socioeconomic backgrounds understandable, is a major difficulty which the doctors have to face while working in public hospitals of Pakistan (Hashmi, 2003).

Governments in the developed countries are not only constantly improving their system of health-care provisions, as they are also generating cash for their national economies by the promotion of health tourism (Akbari *et al*., 2021). On the other side, instead of developing their health-care systems, policy makers of the developing countries such as Pakistan assist developed country health-care systems by frequently seeking their health care services, often at the expense of taxes paid by their country mates. As a result, failing to develop this sector has multiple implications.

In developing countries such as Pakistan, where health care problems receive attention from the scholars as compared to the policymakers, it is no surprise that out of pocket expenditures on the health care are 66.5%, while the global average is 18.147%; (World Bank Report, 2018) why is the country's system of health care in public sector producing a large number of unsatisfied patients? why do the majority of people in Pakistan believe the country's health-care system to be corrupt? (Gadit, 2011). According to these facts and data, the necessity to analyze the performance of developing countries is more significant than the developed countries of the world, since it involves lives of the people (Shafiq *et al*., 2017). In some scientific investigations which have been conducted on health care issues, it has been noticed that quality efforts are more noticeable in manufacturing, schooling, and agricultural than in healthcare sector of the developing countries.

Technical competence is referred to healthcare workers' technical capabilities as well as their commitment to high standards. Technical expertise and professional knowledge continued to illustrate patient pleasure in the healthcare context in the current analysis as in earlier concept analysis publications. Competent health professionals, adequate diagnostic and therapeutic methods are critical components of patient satisfaction. It has been discovered that doctor's professional qualities are linked to higher patient satisfaction (Weinhold *et al.,* 2022).

There is more need to improve the relationship between patients and health providers for improving better health care. The physicians may order diagnostics studies and imaging as a substitute of face-to-face meeting, as it seems to save time and increase relative value units. As a result, the medical interview was abbreviated and the physical environment disappeared (Douglas, 2019). The lack of connection between clinician and patient creates a loss of interest which the patient needs for meaningful caring. The health provider has limited time to inquire about relevant information, understand the content of the illness and address the patient's needs. This increased the malpractice concluded a view that patient-central care improves the quality of medical outcomes (Hasim, 2017).

It has been examined that the doctor's attention in obtaining the medical history confirms the patient's value as a person who shares a story, expresses interest, and establishes the basis of the therapeutic partnership. The doctor will better handle the patient's listening or the fact that he cannot cure the sickness if he realizes, he is aiding the patient in reducing his suffering. In general medicine, it should be emphasized that psychological issues frequently emerge as physical symptoms and medical disorders have psychological side effects that require special attention. So, it is necessary to investigate the psychological components of all issues (Charon, 2006).

Specialized training is required to induce little but substantial personality changes in the doctor and make them more receptive to patients' thoughts during consultations. The general practitioner plays a beneficial therapeutic role in every session, not just those with clearly characterized disease processes (Van Roy *et al*., 2014).

There have not been many studies done on the resource of physician time. Physicians interact directly with patients, get to know them, develop relationships, manage the paperwork associated with visits, and expand their knowledge. No matter a doctor's responsibilities, there are 24 hours a day, so time is always limited. It has been observed in a study on patient satisfaction that time spent by the physician on medical health education and treatment results had an effective impact on the satisfaction of patients (Robbins *et al*., 1993).

Healthcare services and satisfaction of patients largely affect the working of the healthcare industry. This objective can only be achieved when the health care services provided to the people are useful in managing the disease effectively and are affordable for the vast majority of the population. Thus, the prime objective of any national health care system is to provide its patients with a high-quality healthcare delivery system. (Zineldin, 2006, Duggirala *et al*., 2008).

Hypothesis

In order to first examine the impact of Task Performed by Doctors (TPBD) as well as Behavior and Time (BAT) on General Satisfaction (GSAT) of the patients and then to evaluate the mediating role of Health Care Delivery System (HCDS) in affecting this basic relationship among independent variables of Task Performed By Doctors (TPBD) as well as Behavior and Time (BAT) and the dependent variable of General Satisfaction (GSAT), the following hypothesis has been drawn:

H_0: Health Care Delivery System (HCDS) mediates the relationship between dependent variable (General Satisfaction) and independent variables (Task Performed by Doctors as well as Behavior and Time).

Moreover, the above hypothesis has been tested with the help of the regression equations following three steps mediation proposed by Baron & Kenny (1986):

$$GSAT_i = \beta_0 + \beta_1 (TPBD_i) + \beta_2(BATi) + \varepsilon_i \quad \text{I}$$

$$HCDS_i = \beta_0 + \beta_1 (TPBD_i) + \beta_2(BATi) + \varepsilon_i \quad \text{II}$$

$$GSAT_i = \beta_0 + \beta_1 (TPBD_i) + \beta_2(BATi) + \beta_3(HCDS_i) + \varepsilon_i \quad \text{III}$$

Whereby,

GSAT : General Satisfaction of patients

β_0 : Intercept

$\beta_1, \beta_2, \beta_3$: Slopes of coefficients

TPBD **:** Task Performed By Doctors

BAT : Behavior and Time

HCDS : Health Care Delivery System

ε_i : Error Term

Material and Methods

Task Performed By Doctors (TPBD) and Doctor Patient Interaction (DPI) have been used as Independent variables and General Satisfaction (GSAT) of patients has been used as dependent variable in the basic model of the study. A cross-sectional study is conducted with 720 hepatitis patients at public sector hospitals of Punjab to first investigate the behavior and competence issues of hepatologists with regard to the satisfaction level of hepatitis patients. Then, mediating role of Health Care Delivery System has been examined. We selected 6 DHQ hospitals from 3 divisions of Punjab

province in Pakistan. A questionnaire was developed for collection of data from the patients. SPSS 16 has been used in order to analyze the data of this study.

Results and Discussion

Table 1
Opinion of the Respondents Regarding Health Care Delivery System for Treatment of Hepatitis Patients in Public Sector Hospitals of Punjab

Sr.	Attributes	Disagree	Neutral	Agree	Total
A	Where I get medical care, people are more courteous	135	27	558	720
		18.8%	3.8%	77.5%	100%
B	Trained staff is always present in hospital	13	8	699	720
		1.8%	1.1%	97.1%	100%
C	Behavior of trained staff is friendly	160	32	528	720
		22.2%	4.4%	73.3%	100%
D	Doctor's clinic has everything needed to provide complete medical checkup	25	33	662	720
		3.5%	4.6%	91.9%	100%
E	The facility of lab testing for diagnosis is easily available in hospital	16	20	684	720
		2.2%	2.8%	95.0%	100%
F	I have easy access to the medical specialists when I needed	46	18	656	720
		6.4%	2.5%	91.1%	100%
G	Necessary medicine was always available	111	18	551	720
		15.4%	2.5%	82.1%	100

Table 1 reveals information about courtesy of health care staff involved in treatment of hepatitis patients in public sector hospitals of the Punjab. It has been found that 77.5% of the patients were agreed on the presence of courteousness in staff. While, 18.8% were disagreed or dissatisfied with regard to it and 3.8% of the respondents i.e., 27 out of 720 were neutral or indifferent in this aspect. It can be very well understood that most of the people were agreed or satisfied with respect to courteous behavior of the staff. It clearly explains about availability of the trained staff for dealing with hepatitis patients in public sector hospitals of the Punjab. It has been examined that 97.1% of the patients were satisfied and agreed that sufficient numbers of trained staff are all the time available for dealing the patients. While, 1.8% of the respondents were not satisfied or disagreed with respect to availability of technically trained staff in the hospitals and finally 1.1% of the respondents i.e., 08 out of 720 were found neutral or indifferent. It can be well understood that almost all the respondents were agreed or satisfied with respect to availability of the trained staff for dealing with hepatitis patients in public sector hospitals of the Punjab.

It is obvious from that out of 720 respondents, 528 were satisfied about the friendly behavior of trained staff, which means that 73.3% of the hepatitis patients were satisfied from dealing of staff in public sectors hospitals of the Punjab. It is also clear that supporting staff of the hospitals was not only properly trained, but also very friendly attitude with the patients. On the other side, 22.2 % of the patients were disagreed or dissatisfied from the dealing of trained staff in the hospitals. While, very few percentages i.e., 4.4% were indifferent or neutral with regard to behavior of technical staff in these hospitals. Behavior of nurses and support staff play a major role in improving patient outcomes. It describes data about availability of necessary infrastructure in the form of apparatus or instruments and other allied things necessary for complete medical checkup of the hepatitis patients in public sector hospitals of the Punjab. It has been pointed out that 91.9 % of the respondents' patients were satisfied from the available infrastructure for complete checkup of hepatitis patients, while very few percentages of the patients i.e.,

3.5 were not satisfied from the position of available infrastructure in the public sector hospitals of the Punjab and 4.6 % of the patients were neutral about availability of necessary infrastructure for patients' checkup in hospitals.

Information about availability of medical specialist at the time of need is evaluated which exhibited the status that 91.1 % of the respondents' patients were agreed or satisfied with regard to their access to medical specialist, when needed, while a small percentage of 6.4% of the respondents were not satisfied from the position of availability of medical specialist in public sector hospitals of the Punjab. It has also been noted that only 2.5% of the patients were neutral or indifferent about their access to the facility of specialist in government hospitals. Data about condition of medicines availability for hepatitis patients in public sector hospitals of the Punjab has been examined. It has been revealed from the figures that out of 720 patients /respondents, 591 were agreed that proper medicines for treatment are being provided to the hepatitis patients by the hospitals and their percentage was 82.1%. While 15.4% of the patients were not satisfied from provision of necessary medicines to the hepatitis patients in public sector hospitals. So for as numbers of indifferent respondents are concerned, their percentage was very low and was only 2.5%. A study was done by (Boadi *et al*. 2019) on how healthcare services quality effects patient satisfaction. The results of their studies support the result found in this study.

It can be noticed from the results of interviews of hepatitis patients conducted at outdoors of public sector hospitals in Punjab that more than 70% patients were found to be satisfied from the existing health care delivery system.

Table 2
Regression for Examining the Role of Health Care Delivery System as Mediating Variable.

Equation (I)
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403[a]	.163	.160	.38034

a. Predictors: (Constant), BAT, TPBD

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		β	Std. Error	*β*		
1	(Constant)	1.690	.075		22.420	.000
	TPBD	.168	.031	.197	5.449	.000
	BAT	.175	.022	.293	8.095	.000

a. Dependent Variable: GSAT
b. F Value= 0.000 (69.560)

Equation (II)
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229[a]	.052	.050	.54724

a. Predictors: (Constant), BAT, TPBD

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		β	Std. Error	*β*		
1	(Constant)	2.068	.108		19.069	.000
	TPBD	.251	.044	.218	5.671	.000
	BAT	.022	.031	.027	7.090	.000

a. Dependent Variable: HCDS
b. F Value: 0.000 (19.782)

Equation (III)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.428[a]	.183	.179	.37595

a. Predictors: (Constant), BAT, HCDS, TPBD

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		β	Std. Error	*β*		
1	(Constant)	1.466	.091		16.025	.000
	HCDS	.140	.031	.165	4.571	.000
	TPBD	.172	.021	.189	8.075	.000
	BAT	.108	.026	.147	4.224	.000

a. Dependent Variable: GSAT

b. F Value: 0.000 (53.412)

Table 2 firstly presents the results of regression equation (I) i.e., the relationship between dependent variable and independent variables has been examined and then existence of mediating impact of HCDS on this basic model been tested with the help of equation (II) and (III), following Baron & Kenny (1986) three regression equations-based model.

Coefficient values of independent variables in equation (I) are 0.197 and 0.293. The values in this equation are significant with *t- values* of 5.449 and 8.095. Likewise, coefficient values in equation (II) are also found to be significant as reflected by *t-values* of 5.671 and 7.090 respectively. Further, the coefficient values of HCDS (mediating variable), TPBD (independent variable) and BAT (independent variable) in equation (III) 0.165, 0.189 and 0.147 with *t- values* of 4.571, 8.075 and 4.224 respectively are highly significant.

It is also evident from the results that the model is found to be significant at 0.000 on the bases of *F values* of 69.560, 19.782 and 53.412 respectively in three equations model. It indicates that the regression model is best fit.

It is worth mentioning that coefficient values in all three equations are found to be significant. Further, the coefficient values of independent variables in equation (III) are lower than the coefficient values of these variables in equation (I) which indicates that Health Care Delivery System (HCDS) mediates the relationship between the dependent variable General Satisfaction (GSAT) and independent variables Task Performed by Doctors (TPB D) as well as Behavior and Time (BAT).

Conclusion

It has been previously proved that technical competence as well as behavioral implications of doctors largely affect the satisfaction level of patients. This study has concluded that health care delivery system or mechanism of government hospitals in the Punjab has significant impact on the basic relationship of patiets satisfaction and competence of doctors in public sector hospitals. Therefore, the goal of all healthcare organizations should be to provide the highest quality care services to their patients. To attain this health service quality, all aspects of the healthcare delivery system must be considered by the policy makers. All these elements will then have an impact on the patient's perception of safety which will ultimately affect the patient's outcome.

Recommendations

Health Care Delivery System in Pakistan needs attention of health policy makers, as it has very clear implications for patients satisfaction.Further, this study has been conducted at provincial level due to existence of certain hardships and want of resources. It can further be extended at greater level in future studies.

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