



Factors Associated with Tuberculosis Patient Satisfaction Regarding Health Facilities: A Case Study of Hospitals

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Abstract

The study investigates health literacy and Tuberculosis patient satisfaction regarding health facilities in hospitals. Some factors affect TB patient satisfaction regarding hospital facilities, which was hypothesized that TB knowledge, reaction if found TP, information regarding TB, medical help, and healthcare facility availability affect patient satisfaction. The quantitative method of observation was used. The population of the current study was TB patients in Lahore Hospital of Pakistan. The simple random sampling technique applied with a sample size ($N = 325$), and data was collected through a valid adopted questionnaire in probability sampling. SPSS was used for analysing data with simultaneous and hierarchical regression test for the prediction. The findings suggested that TB patient knowledge and reaction found negative for patient satisfaction regarding hospital facilities. If a TB patient has less knowledge regarding disease, then his reaction to drugs taking is also less. Medical help relating to TB and facilities in hospitals for patients was a significant positive predictor of patient satisfaction. This means if a patient has TB knowledge, medical help, good hospital facilities, then his or her satisfaction level is high. In conclusion, this study uncovered that TB patients are satisfied with hospital facilities. The suggestion was that health awareness campaigns should be planned to aware TB patients regarding TB symptoms, treatment methods, and medicine uses.

Keywords: Health Literacy; Tuberculosis; Patient Satisfaction; Hospital Health Facilities

Introduction

In Pakistan, the menace of Tuberculosis (TB) is noted as about 525,000 infected persons. In addition, these cases of TB have an

additional 27,000 new members in 2019 [1]. My study focuses on the following issues: health literacy, tuberculosis, and patient-level of satisfaction in government hospitals. Tuberculosis is a notewor-

thy worldwide issue and a significant global problem, which is also termed as “consumption”. It is an infectious disease which attacks our lung and then processes toward the death of human beings. Tuberculosis is one of the world’s deadliest ailments. According to the World Health Organization, tuberculosis had been studied in 1989\90 to know about the nature of the problem by reviewing the provided data; they found that it is the most dangerous communicable disease in the world [2]. This appears to constitute a worthwhile direction for future work such as health literacy, TB patient satisfaction, and health facilities in hospitals.

At present, many of the research groups continue their work on health literacy and health facilities. Hussain, *et al.* (2019) considered Pakistan a tuberculosis grown-up, which is a major public medical issue, intense respiratory tract contaminations, and jungle fever remains a potential danger. In any case, wounds, cardiovascular sicknesses, malignancy, diabetes and tuberculosis are rising as significant general medical issues. Pakistan is at the start of an “epidemiological progress”, because of which it should not confront just the difficulties produced by irresistible illness, but additionally, it is expanding trouble because of non-transferable and communicable diseases [3-5].

In the twenty-first centuries, all successful organization focused on the patient’s satisfaction level with facilities provided to patients in organizations, and they also considered that the customer is the central pillar of health strategic planning. Patient satisfaction is associated with the quality of services offered to them by any medical organization [6]. For instance, patient preservation [7], patients commitment [8,9], economical and production [10,11], as well as facilities and economical presentation [12].

Patients’ satisfaction is an essential factor for evaluating facilities provided by the government in the hospitals [13]. The patients were pleased with the TB care system, particularly with access to care and adherence counselling, while staff mood, waiting time, and facilities were not. Patient frustration with TB facilities in Vietnam was primarily due to long wait times, bad staff attitude, poor service quality, and inadequate treatment access [14]. Bhatnagar [14] concluded that government health care system should focus on these areas in future for the TB patients such as, (1) look at separate health-care projects or frameworks; (2) assess to the care system; (3) an administration is to transform every type of medical help; and (4) aware TB patient regarding health literacy.

TB is the primary source of death among every irresistible infection, and WHO revealed that in 2010 there were 1.1 million passing among HIV individuals and an extra 0.35 million passing from HIV related tuberculosis (WHO, 2011) [15]. Millennium development goal implies two verses 4th rate of TB by 2015 and settled the target to reduce the prevalence and death because of TB by half a benchmark of 1990 by 2015. The directly watched treatment such as “Directly Observed Treatment, Short course” (DOTS) was boosted in 1995 as the principal procedure in controlling tuberculosis [16]. The methodology incorporates determination through bacteriology and institutionalized short-course chemotherapy with full patient help [17]. Knowledge about the cause and treatment of tuberculosis among TB patients was very excellent. In any case, confusions additionally exist—disorders about the transmission of infection, prompt segregation like separate utensils for nourishment or drink. Analysis of TB is related to increment nervousness or pressure, dread of loss of wage or gaining, and shame debilitating confidence and personal satisfaction. Broad communications can be better used to expel confusions. As uncovered in this investigation, psychosocial responses towards TB ought to be tended to through counselling and correspondence amid treatment in the “Directly Observed Treatment, Short course” (DOTS) focus. These above precautions accomplished at the national level, which controlled TB [18].

Pakistan is an underdeveloped country that faces many severe issues in the health care system domain and hospital facilities for the patient. Patient health is a significant concern in this regard. The rate of communicable diseases is increasing day by day, such as TB. A political condition that is becoming unstable nowadays and has a long-lasting impact on the health care system and government hospitals. Health literacy is one of the significant factors which improve patient satisfaction regarding health facilities in the hospital. Mostly, patients do not become aware of the disease, its symptoms, prevention and treatment methods. This paper found the gap in previous literature: TB patients’ knowledge about the disease and its impact on TB patient satisfaction in government hospitals with male and female comparison. According to Onyeonoro, Chukwu [19] patient satisfaction regarding tuberculosis services is essential in government hospitals. Cazabon, Pande [20] originated the highest satisfaction of TB patients and facilities provided to them depends upon the nature of-mind observing. Similarly, TB patient satisfaction has remained hard to compartmentalize in the modern health care system. Simultaneously, different patient satisfaction

scales have been prepared for; and most were with good psychometric properties. Subsequently, patient satisfaction is significant indicators that fulfil the patient needs and life. In accordance with Ali, Anjum [21], twenty per cent of patients constantly replied that patient satisfaction is multidimensional in nature. Health literacy, hospital facilities, TB awareness, diagnosis and treatment, and some other social insurance could satisfy TP patients in the hospitals. In this regard, MacNeil, Glaziou [22] identified some effect regions where TB rates are high, likewise increase the danger of getting the infection. These states are sub-Saharan Africa, India, Mexico and other Latin American nations, China and numerous Asian nations parts of the previous Soviet Union, islands of South-east Asia, Micronesia. TB is still under-addressed in many countries, including in Pakistan.

Theoretical framework

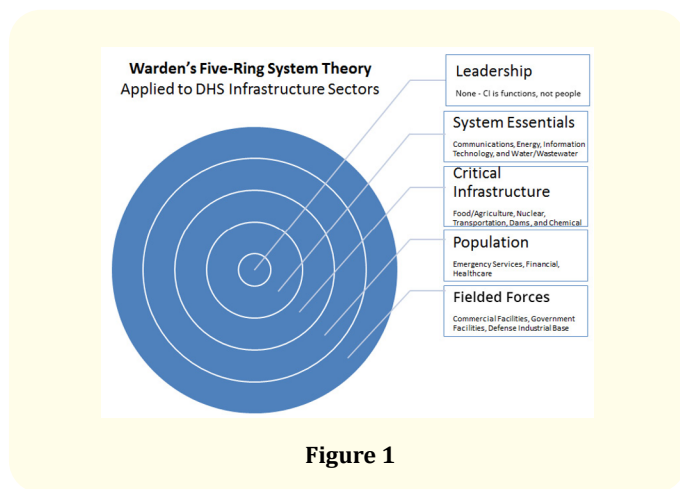


Figure 1

Nations are altered pyramids that lay dubiously on their essential innards, correspondences, key generation, foundation, and populace. If a nation is incapacitated deliberately, it is crushed and cannot maintain its handled powers; however, they are entirely flawless. Warden’s five-ring theory signifies a theory of strategic military attack based on five levels of system features. They are named in honour of Col. John A. Warden III, a former United States Air Force officer and airpower theorist. The Five Rings include Leadership, System Essential, Critical infrastructure, Population, Fielded Forces [23,24].

Methods

Survey research design

The current study was explanatory in nature because we tried to explain the relationship between health literacy, tuberculosis,

health facilities and patients’ satisfaction level in a government hospital. The mode of observation in this study was quantitative and survey. Likewise, a method for the purpose of data accuracy, and a survey was carried out in the target population of TB patients in tertiary care hospitals. The survey approach is limited to society’s immediate need and encompasses all facets of the issue. The tasks of environments or data collection and interpretation related to the study intention make up the research design [25].

Here and there, the populace is self-evident. The numbers of TB patients are in the present examination. The current study population is TB patients in and Central Park Teaching Hospital Mayo Hospital, Lahore, Pakistan. The justification for selecting Central Park Teaching Hospital and Mayo Hospital is the oldest and most prominent hospitals in Lahore, and it fulfills all requirements of the TB patient and does research on TB patients. It is a public hospital having patients with different backgrounds. There are 1887 TB patients registered at Central Park Teaching Hospital and Mayo Hospital, Lahore.

Major essential factors that attract researchers for selecting this population can be target populations that could be easily accessible; our research purpose and design demands were TB patients in tertiary care hospitals, so that is why we selected the hospitals as mentioned earlier for studying.

In probability sampling, simple random sample, which refers to “each element in the population has a known and equal probability of selection” [26]. Similarly, there are two types of simple random sampling, such as with replacement and without replacement [26]. Rationally, our study used without replacement type because it is very convenient for the researcher to go and remove chosen sample elements or students who are already selected and then take data from him/her. However, Singleton Jr, Straits [26] described that in this very type, a researcher does not want the same student/elements which choose consistently more than once in the study. Furthermore, the simple random sampling selection rationale was that our whole population of TB patients in Central Park Teaching Hospital and Mayo Hospital, Lahore, were listed and known.

The present study’s sample size consisted of (N=325) total respondents with a 0.05 error chance. The calculated method of Taro Yamane (Taro Yamane) was used to find the sample size. The sample size was selected using the Sloven formula. This formula has been set as:

$$\text{Sample Size} = N / 1 + Ne^2$$

Sample Size = $1887/1+(1887*0.052)$

Sample Size = 325

The data were collected through previous verified and accurate scales such as “Assessment of knowledge, attitude and practice on tuberculosis” by [27], the health literacy scale by [28] and patient satisfaction by [29]. The WHO scale for Medical Help Regarding TB is used by [30] and these scales were used in this study. SPSS (21. Version) was used for analyzing data with simultaneous and hierarchical regression test for the prediction.

Findings

Simultaneous regression analysis was conducted to evaluate the prediction of itself a model for patient satisfaction regarding hospital facilities, knowledge about TB, reaction if found TB, ways of information regarding TB, medical help regarding TB and facilities for patients in the hospital.

| Variable | Patient Satisfaction Regarding Facilities | | |
|-------------------------------------|---|----------|-------|
| | B | SE | B |
| Constant | 49.848*** | 4.042*** | |
| Knowledge About TB | -3.95* | 1.151** | -.189 |
| Reaction if Found TB | -2.725** | .423** | -.338 |
| Ways of Information Regard TB | 4.129*** | .774*** | .290 |
| Medical Help Regarding TB | 3.178*** | .505*** | .340 |
| Facilities in Hospitals for Patient | .052** | .060** | .043 |
| R ² | .293 | | |
| F | 26.446** | | |
| *p < .05, **p < .01, ***p < .001 | | | |

Table 1: Simultaneous Multiple Linear Regression Analysis Predicting Patient Satisfaction Regarding Facilities, Knowledge about TB, Reaction if Found TB, Ways of Information Regarding TB, Medical Help Regarding TB and Facilities in Hospitals for Patient (N = 325).

The results indicated that knowledge about TB was found to be a significant negative predictor of patient satisfaction regarding hospital facilities. So, as a result, there was a negative direction

which was an inverse relationship between it. If found to TB, the reaction was also adverse for patient satisfaction regarding facilities. It was justified if the increasing response if seen to TB, decreased patient satisfaction regarding facilities. Similarly, there was also information regarding TB and medical help regarding TB as a justified positive predictor for patient satisfaction regarding facilities.

Furthermore, gender-wise responses were distinct in their point of view. In rural areas, patients were less satisfied with hospital facilities as compared to urban. Thirdly, there was a strong positive relationship between hospital facilities for patients in this study, whereas there was a positive direction that was found a direct connection between it. Finally, the results acknowledged that knowledge about TB and reaction if seen to TB was negative for patient satisfaction regarding hospital facilities. So, all the independent study variables were put together. The model was not detecting the unique variation for our study dependent variable, so the study demanded to conduct the hierarchical regression analysis to evaluate the fundamental change in the dependent variable.

Hierarchical regression analysis was administrated to evaluate the prediction for patient satisfaction regarding hospital facilities, knowledge about TB, reaction if found TB, ways of information regarding TB, medical help regarding TB and facilities for patients in the hospital. It was hypothesized that knowledge about TB, reaction if found TB, ways of information regarding TB, medical help regarding TB and facilities for patients in the hospital will predict patient satisfaction regarding facilities.

| Predictors | Patient Satisfaction Regarding Facilities | | |
|-------------------------------------|---|----------|--------|
| | ΔR ² | β | ΔF |
| Step 1 | | .033* | 7.208 |
| Control Variables* | .022 | | |
| Step 2 | | .350** | 17.653 |
| Control Variables* | .051 | | |
| Step 3 | | | 36.963 |
| Knowledge About TB | .342 | -.213*** | |
| Reaction if Found TB | | -.339*** | |
| Ways of Information Regard TB | | .322*** | |
| Medical Help Regarding TB | | .359*** | |
| Facilities in Hospitals for Patient | | .096* | |

| | | | | |
|--|----------|--|--|--|
| R ² | .414 | | | |
| F | 32.020** | | | |
| Note: *p < .05, **p < .01, ***p < .001 Control variables are Area of Living and Gender | | | | |

Table 2: Hierarchical Multiple Linear Regression Analysis Predicting Patient Satisfaction Regarding Facilities, Knowledge about TB, Reaction if Found TB, Ways of Information Regarding TB, Medical Help Regarding TB and Facilities in Hospitals for Patient (N = 325).

The results revealed that after controlling other variables, i.e., gender in step one, area of living interred in step two. Similarly, knowledge about TB, reaction if found TB, ways of information regarding TB, medical help regarding TB and facilities in hospitals for patients were reported in step three. When the variable one in block 1 (gender) has been entered, the overall model explains 2 per cent of the variance (.02 × 100). Similarly, in block 2 (area of living) has been listed, the total model discloses 7 per cent of the discrepancy (.07 × 100). Furthermore, after enrolled all the variables in step three, the overall model accounted for how much variance 41 per cent of variance (.41 × 100). Interestingly, when the effects of gender and area of living are eliminated, then 34 per cent change with [F (7,317) = 32.020], p < .001 for patient satisfaction regarding facilities in the hospital, whereas knowledge about TB and reaction if found TB were found negative significant for patient satisfaction regarding facilities in the hospital. In this context, ways of information regarding TB and medical help regarding TB and facilities in hospitals for patients were significant positive predictors for patient satisfaction regarding facilities in the hospital. The below table 3 showed that...

| Variable | Female (n = 163) | | Male (n = 162) | | t (323) | P | 95%CI | | Cohan's d |
|--------------|------------------|------|----------------|------|---------|------|--------|-------|-----------|
| | M | SD | M | SD | | | LL | UL | |
| TB Knowledge | 23.68 | 5.53 | 24.11 | 4.84 | .249 | .780 | -3.055 | 3.909 | -0.08 |

Table 3: Independent Samples t-test Comparing TB Knowledge and Gender (N = 325).

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit.
Effect-size: -0.04.

The given results revealed that there was significant difference found between male and female TB patients regarding TB knowledge whereas male TP patients had more TB knowledge than female TP patients and with small effect size and the p -value was significant. On the other hand, Independent sample t-test was carried out for know the difference between urban and rural area TB patients. The below table 4 showed that...

| Variable | Urban (n = 163) | | Rural (n = 162) | | t (323) | P | 95%CI | | Cohan's d |
|--------------|-----------------|------|-----------------|------|---------|------|--------|-------|-----------|
| | M | SD | M | SD | | | LL | UL | |
| TB Knowledge | 24.31 | 4.28 | 23.44 | 6.02 | .509 | .326 | -2.601 | 4.343 | 0.166 |

Table 4: Independent Samples t-test Comparing TB Knowledge and Area Wise (N = 325).

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit.
Effect-size: 0.08.

The given results revealed that there was significant difference found between rural and urban patients regarding TB knowledge whereas urban area patients had more TB knowledge than rural patients and with moderate effect size. And the p -value was not significant.

Discussion

Much of the research presented in this work can apply to any health facilities in the hospitals. Such as, Pakistan, shows poor performance and management in its government hospitals regarding health facilities for TB patients [31]. Factors that determine the health literacy included health education materials of interventions, patient current situation language barriers and many other factors which play a vital part in health literacy [32]. According to the Sarfaraz, Shaikh [33], a low literacy rate has adverse effects on treatment outcomes and care delivery safety. The low rate of health literacy affects the considerable population. Due to health literacy, most people do not know symptoms, prevention methods and awareness about medicines. Thus, have a high risk to stay a long time in hospitals and improper cure [34]. A detailed study on patient health and health facilities are necessary to understand in the hospitals. Patient do not know to complete the treatment and

course of TB, and in this way, they are at high risk of death. Health literacy is a significant public health issue. This issue also belongs to doctors and nurses. They have poor ability and skills to give accurate and precise information about the disease to patients and guide them properly about medicine and treatment. Latent TB and Active TB are two main types of TB which are found in the world [35]. Finally, the current results acknowledged that knowledge about TB and reaction if seen to TB were negative for patient satisfaction regarding hospital facilities.

Pakistan health care system failed to provide basic facilities in government hospitals for the TB patient. Pakistan health care system was unable to achieve the goal "Health for all" Sustainable Developmental Goals (SDGs) 2016 [36]. The study is not supporting the agenda of Sustainable Developmental Goals (SDGs) because TB patient were found negative significant for patient satisfaction regarding facilities in the hospital. Furthermore, ways of information regarding TB and medical help regarding TB and facilities in hospitals for patients were significant positive predictors for patient satisfaction.

Government should play their vital role in improving patient health care and safety in Pakistan. This will have done by delivering health care, provide the best quality care for vulnerable populations, set health care advertises, gaining new knowledge about the disease, develop and analyze health technologies, observe health care quality, inform health care decision-makers, develop the health care workforce and organize stakeholders from cross-wise the health care system [37]. The current study explained that gender-wise responses were distinct. In rural areas, patients were less satisfied with hospital facilities as compared to urban.

Tuberculosis is a disorder that affects the young, malnourished, diabetic patients on glucocorticoid medications, opioid abusers, drinkers, the aged, HIV-positive patients, drug abusers, and others who live in overcrowded institutions such as prisons. Many individuals afflicted with tuberculosis bacilli go undiagnosed, either due to poverty or a lack of knowledge regarding the disease's severity. The failure to meet goal rates and the advent of a drug-resistant type of tuberculosis was due to delays in evaluation, unprotected, ineffective, and insufficient treatment regimens, improper check, and a shortage of social care programmers high-risk community [38].

Tuberculosis is a curable illness that can be treated with a six-month regimen of antibiotics. Prevention, on the other side, is superior to cure. It can be avoided with the bacille Calmette-Guerin (BCG) vaccine and large-scale public awareness drives. When anyone has signs of tuberculosis, they can travel to the closest health care centre to get their sputum checked for free. Patients of tuberculosis should not be stigmatized and should have a complete assistance from their families and communities. To minimize the disease burden in Pakistan, there is an urgent need to raise public awareness among youth via the media [39]. There was a strong positive relationship between hospital facilities for patients in this study, whereas there was a positive direction that was found a direct connection between it.

Conclusion

When we talk about the experience, there were a large number of TB patients. The horrible TB patients were counted to increase literature regarding patient knowledge. The medical doctor's inference that the medical facility and his daily medication could save the TB patient life. The medical health care system is an essential service to protect TB patients from the alarming circumstance. Private clinics take high cost from TP patients, and this disease can be controlled with patient knowledge regarding TB disease. So that is why the government healing centers and doctors can improve the hospital facilities on the national level to save TP patients' lives. The doctor advantageously overlooked and joined the therapeutic facility for the TB patient in the daily routine.

This study aimed to test what is health literacy, tuberculosis, patient-level of satisfaction in government hospitals. We predicted that TB's knowledge and reaction were found negative for patient satisfaction regarding facilities in the hospital. Suppose there is less knowledge about TB disease of the patient. In that case, their reaction to drugs or doctor checkups is also less, which alternately affects the patient satisfaction level. In contrast, information regarding TB and medical help regarding TB and facilities in hospitals for patients was a significant positive predictor of patient satisfaction regarding hospital facilities. It means if a patient has TB knowledge, medical help, good hospital facilities, then his or her satisfaction level is high from hospital facilities. Female TB knowledge regarding TB disease was less as compared to male and urban area patients have more satisfaction regarding hospitals facilities

than rural TB patients. In conclusion, this particular study revealed that TB patients are satisfied from hospital facilities.

Recommendations

Keeping in view the results and discussion regarding patient's satisfaction in Government hospital. The current study suggested that the government make different policies to improve hospitals' conditions for TB patients and give proper medication to poor people as the provision of appropriate health facilities.

Health awareness campaigns should be planned to aware TB patients regarding TB symptoms, treatment methods, and medicine use for their quick recovery.

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