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WAITING TIME: PERCEPTION OF DEMOGRAPHIC GROUPS

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Abstract: *The amount of time a patient waits to be seen is one factor which affects the utilisation of healthcare services. A considerable amount of research has focused, in particular, on healthcare in India. The application of exploratory factor analysis comes with two factors namely treatment process and admission process considered in waiting time. The study hypothesises that demographic characteristic of the patients affect their perception about waiting time. The results of t-test indicate that in gender-wise comparison, both male and female respondents have significant differences in their perceptions about waiting time. The application of F-test confirms the significance difference in perception of demographic groups namely age, education, and profession. The mean perception indicate below average satisfaction towards waiting time. The study also discusses various problem and suggestion regarding waiting time in hospital. It concludes with limitations and directions for future research.*

Keywords: *Waiting Time, Treatment Process, Admission Process, Demographic Groups*

INTRODUCTION

Waiting time is a rationale device to access the inpatient care in healthcare system. Patients get interacted in various outpatient departments within the hospital premises. Almost invariably, large numbers of patients arrive and leave the hospital at different times (Umar, Oche & Umar, 2011). In healthcare sector, one of the performance indicators is waiting time. Waiting time is the length of time from when the patient entered the waiting room to the time the patient got treatment (Mackey & Cole 1997). A number of researchers have investigated waiting time for services (Pruyn & Smidts, 1998; Hui & Tse, 1996; Katz, Larson, & Larson, 1991; Umar *et al*., 2011). The patient considers waiting as inactive, wasted or lost opportunity time. It was found that the patient satisfaction decreased with longer waiting time (Katz *et al*., 1991). Longer waiting time is associated with lower patient satisfaction (Anderson, 2007). Barlow (2002) argues that excessive waiting time is a loose strategy in which patients lose valuable time; hospitals lose their patients and reputation, and staff experience tension and stress. It is often one of the most frustrating parts about healthcare delivery system (Dinesh, Singh, Nair, & Remya, 2013). Patients' waiting time has been defined as the length of time from when the patient entered the outpatient clinic to the time the patient actually leaves the outpatient department. Long patient wait times are a persistent challenge facing healthcare systems across India, and have been linked to a variety of undesirable outcomes. In the healthcare sector, whether it's a time used for registration of patient, routine doctor's appointment, emergency room treatment, laboratory/ diagnostic test, procedures, or receiving the results of various tests, waiting happens to just about everyone seeking medical care. OPD is considered as the window to hospital services and a patient's impression of the hospital begins at the OPD. This impression often influences the patient's sensitivity to the hospital and therefore it is essential to ensure that OPD services provide an excellent experience for customers. It is also well-established that 8-10 percent of OPD patients need hospitalisation. Waiting lists are not simple queues that are cleared on a first-come, first-served basis. Rather, a typical waiting list is composed of different streams of patients in different urgency categories, and patients may move from one stream to another if their condition deteriorates or becomes unstable (Esmail, 2012*)*. In Nigeria, a study of an outpatient department showed that the majority of patients were dissatisfied with services, mostly due to long waiting times. Despite nearly 80% of patients reporting that they felt wait times should not exceed 30 minutes, a majority of patients waited far longer, with those waiting more than 60 minutes expressing higher levels of dissatisfaction (Umar *et al*., 2011). In these studies, researchers generally have been interested in the consumer's evaluation of the waiting time. In general, a negative relation between wait evaluation and perceived waiting time has been found.

RESEARCH PROPOSITION

The amount of time a patient waits to be seen is one factor which affects the utilisation of healthcare services. Waiting time has emerged as an increasingly important parameter in the assessment of quality of healthcare; hence, healthcare

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facility performance can be best assessed by measuring the level of waiting time. Number of researchers (Umar *et al*., 2011; Pruyn & Smidts, 1998; Hui & Tse, 1996; Fernandes, Daya, Barry, & Palmer, 1994; Dos Santos, Stewart, & Rosenberg, 1994; Katz *et al*., 1991) confirmed that patients' perception about services is affected by waiting time. According to Nandkeshav *et al*. (2014), the various factors contributing such long waiting time were registration clerk not attending duty on time, taking more time to register the patient, difficulties in locating rooms, rush, no one to help, doctors coming late on duty, doctors talking on mobile, VIP patients jumping queue, etc. On the basis of the above, it is clear that services are affected by waiting time. Further many studies (e.g., Howell, Chleboun, & Conatser, 1993) have also revealed that socio-demographic characteristics can have a significant impact on the customers perception in an organisation. But, the perception of waiting time affected by demographic characteristic is considered by limited researchers (Umar *et al*., 2011). So, to cover the research gap, the present study considers gender, age, education, and profession as important socio-demographic factors affecting perception of patients about waiting time. The items of waiting time, i.e. admission process, billing system, availability of nurses & doctors and proper queue management are extracted from studies of Choi, Lee, Kim, and Lee (2005), Chahal and Sharma (2004), and Sardana (2003).

Hypothesis: The demographic characteristic of the patients affect their perception about waiting time.

OBJECTIVE OF THE STUDY

The purpose of this study is to determine the waiting time in public hospitals and to formulate strategies to improve the management of waiting time. The study examines the perception of patients with respect to demographic characteristics - gender, age, education, and profession. The objectives of the study are to determine the waiting time in public healthcare services, and to gauge the perception of patients in regard to waiting times. The study also attempts to identify factors perceived by healthcare providers as contributory to the long waiting time, and formulate and recommend new strategies to improve the management of waiting time.

RESEARCH METHODOLOGY

The study is carried at District Government Hospital, Udhampur. It is a big hospital with an outpatient attendance of 13000 and inpatient attendance of 1000 monthly. The questionnaires were administered in seven departments, namely medicine, surgery, gynaecology, orthopaedics, ophthalmology, ENT, and pediatrics. For district hospitals without OPD, the questionnaires were administered in the inpatient departments. The questionnaire sought information on patients' perception about waiting times, level of boredom, staff's attitude, facilities, and management experienced while waiting and whether they were satisfied with the services provided by the staff during waiting period. The respondents are chosen in seven departments of the hospital and which were visited by them 3 - 4 times. The survey period has been taken more than six months. Face-to-face interviews were conducted to get adequate and detail response.

Reliability and validity analyses were carried out on the instrument that provided invaluable insight into the perception of the patients with regard to patient waiting time. A total of 350 patients were selected from the hospital. Statistical analysis was carried out by SPSS version 13.

Research Tool

The effect of demographic characteristics on patient satisfaction and loyalty was analysed with the help of independent sample t-test and one way ANOVA. To compare means of two groups, i.e. male and female on patient satisfaction and loyalty, data are analysed with the help of t-test. For analysing mean differences between three or more groups of respondents, one way ANOVA (F-test) is used.

ANALYSES OF PATIENTS' SOCIO-DEMOGRAPHIC DISTRIBUTION

The demography of the respondents showed that more than 50 percent of respondents were between 20 years to 40 years. There were more female respondents (57.14 percent) compared to male (42.86 percent). 200 respondents had qualifications below higher education, 120 above higher secondary, and 30 respondents were uneducated. Composition of the respondents according to profession constitutes businessman (7.15 percent), serviceman (47.14 percent), and dependent (45.71 percent). Table 1 shows the details of the sample demography.

Table 1: Socio-Demographic Characteristics of Respondents (n = 350)

	Frequency	Percentage
Gender		
Male	150	42.86
Female	200	57.14
Age		
Below 20 years	3	0.86
20 years – 40 years	180	51.43
Above 40 years	167	47.71
Education		
Below Hr. Secondary	200	57.15
Above Hr Secondary	120	34.28

Uneducated	30	8.57
Profession		
Businessman	25	7.15
Serviceman	165	47.14
Dependents	160	45.71

DATA ANALYSIS

The KMO value was found to be 0.707 and BTS as 348.113 (dof = 100 and Sig = 0.000) (Table 2), which supported the relevancy of factor analysis. The application of varimax rotation method at three iterations helped in identifying two factors. The detailed analysed of waiting time scale is as under:

Treatment Process

The first factor comprised three statements out of five statements. These statements included 'queue management' (M.S = 3.60 & F.L. = 0.72), 'nursing staff availability' (M.S = 3.70 & F.L. = 0.60), 'physician availability' (M.S = 3.12 & F.L. = 0.56), 'test, reports are made available urgently' (M.S = 2.00 & F.L. = 0.50), and 'waiting for physician' (M.S = 2.00 & F.L. = 0.45). The factor explained 30.62 percent of variance out of 60.88. The value of communalities for the item reflects the relative importance of the statements. It came out to be highest for 'queue management' (0.60) and lowest for 'waiting time for physician' (0.40).

Admission Process

The second factor comprised five statements. These statements included 'admission process' (M.S = 3.70 & F.L. =0.85), 'working time of the hospitals suit you' (M.S = 2.70 & F.L. = 0.80), 'admission during emergency' (M.S = 3.50 & F.L. = 0.72), 'well furnished waiting hall' (M.S = 1.58 & F.L. = 0.70), and 'overall waiting time' (M.S = 2.00 & F.L. = 0.67). The highest communality value is for 'admission process' (0.59).

Table 2: Mean, Factor Loading, KMO, Variance, Communalities and Eigen Value of Waiting Time Scale

Factors	Mean	Factor Loading	KMO	Percentage of Variance	Communalities	Eigen value
Waiting Time			0.707			
F1–Treatment Process	2.89			30.62		1.70
Queue management	3.64	0.72	0.820		0.60	
Nursing staff availability	3.70	0.60	0.806		0.50	
Physicians availability	3.12	0.56	0.822		0.45	
Test, reports are made available urgently	2.00	0.50	0.700		0.40	
Wait for the medical examination from physicians	2.00	0.45	0.685		0.40	
F2 – Admission Process	2.69			30.18		1.26
Admission process	3.70	0.85	0.780		0.59	
Working time of the hospital suits you	2.70	0.80	0.745		0.50	
Admission during emergency	3.50	0.72	0.635		0.53	
Waiting hall is well furnished	1.58	0.70	0.600		0.45	
Overall waiting time	2.00	0.67	0.600		0.45	
Grand Mean	2.79					
Cumulative Variance Explained				60.80		

RESEARCH PROPOSITION

The study applied t-test and F-test (one way ANOVA) to find out whether significant difference exists among varied demographic groups relating to gender, age, education and profession with respect to waiting time. The results of t-test indicate that in gender-wise comparison, both male and female respondents have significant differences in their perceptions about waiting time (Table 3). In the age-wise comparison, the results of F-test revealed that with respect to waiting time (Table 4), there is a significant difference between perceptions of SAG & TAG, and TAG & FAG; on the other hand, FAG & SAG have similar perceptions. Further, in education-wise analysis with respect to waiting time, SEG & TEG, and TEG & FEG have different perceptions, but FEG & SEG have similar perceptions. In profession-wise analysis, FPG & SPG and SPG & TPG showed similarity in their perceptions, and TPG & FPG showed significant difference in their perceptions about waiting time. Overall results indicated that there is significant difference in the

perceptions of demographic groups namely male & female, age group (SAG & TAG, TAG & FAG), education group (SEG & TEG, TEG & FEG), and profession (TPG & FPG) with respect to waiting time.

Table 3: Mean Value of Female and Male Respondents with Their Significance Level, t Value, Degree of Freedom with Respect to Waiting Time

Factor		Mean	Sig	t	df	Sig
Waiting Time	Female	2.78	.085	-2.500	309	.006
	Male	3.00				

Table 4: Age, Education and Profession-wise One-way ANOVA Values for Waiting Time

Dependent Variable		Mean Difference	Sig
AGE			
Waiting Time	FAG & SAG	.0050	.900
	SAG &TAG	-.5700	.000
	TAG & FAG	.6070	.000
EDUCATION			
Waiting Time	FEG & SEG	.0300	.005
	SEG & TEG	-.2650	.010
	TEG & FEG	.3300	.002
PROFESSION			
Waiting Time	FPG & SPG	.0620	.106
	SPG & TPG	.0070	.165
	TPG & FPG	-.0700	.005

Note: FAG = Below 20 yrs, SAG = 20 yrs – 40 yrs, TAG = Above 40 yrs, FEG = Below higher secondary, SEG = Above higher secondary, TEG = Uneducated, FPG = Businessman, SPG =service man, TPG= Dependents

DISCUSSION AND CONCLUSION

Waiting times for elective care have been considered a serious problem in many healthcare systems since it acts as a barrier to efficient patient flows. The results of the study also revealed that two factors are influencing the waiting time, namely treatment process and admission process. For treatment process, mean score of response reveals that respondents are dissatisfied from 'availability of test reports' (2.00) and 'wait for medical examination from physicians' (2.00). For admission process, respondents also showed dissatisfaction for 'working time of hospital' (2.70), and 'well-furnished waiting hall' (1.58). The overall perception of respondents about waiting time is also below average (2.00). The mean score of respondents shows dissatisfaction of respondents regards waiting time of the hospital (2.79). In the socio-demographic analysis of respondents also showed that male and female respondents have difference in their perceptions. The difference in perceptions is also shown in education group and age group. But, in contrary, all professional groups are similar in their perceptions except dependents. While waiting time is a global phenomenon that affects healthcare organisations throughout the world, in healthcare sector in India specifically, there is still much to be done in order to reduce patient waiting time. The results suggest to improve hospital waiting time. It is important to implement firstly operational changes. The time spent before seeing the doctor can always be made useful by making people engaged in activities to reduce boredom. Availability of separate waiting hall is very important for hospital. The waiting hall should be well-furnished and well-maintained. The placement of television, slogans, magazines, newspaper, health related charts can help in engaging patients. In most of the hospitals, patients get slips and stand in long queues to get treatment. The queue management can also help in reducing waiting problem. The patients queue can be differentiated by females, old age people, emergency patients etc. The study by Bamgboye and Jarallah (1994) showed a preference for health education programmes for specific diseases. Thus, the constructive use of patient waiting time can be made to provide greater patient satisfaction through effective health education activities in the OPDs. Respondents also remarked that working time of the hospital does not suit them. In public hospitals, OPD timing is from 8 am to 2 pm, which is not suitable for working people. The OPD for limited period also increases chances of rush during working hours. The morning and evening OPD can reduce waiting time. Prior appointment by patients can reduce rush in hospital. The test reports made available by giving prior time and date can reduce rush in laboratory.

Efforts made by this research to track waiting time in Indian public hospitals is a laudable move as this aspect of service can easily be overlooked for more pressing issues such as patient safety and prevention of medical error. The results of this study could be used by hospital administrators to improve healthcare delivery system to ensure effective services. Both patients and staff can get benefitted from reduced crowding, fewer complaints, and satisfied patients. Such improvements could bring meaningful benefits to society in the form of better health services.

LIMITATION AND DIRECTION FOR FUTURE RESEARCH

The study brings useful results to improve waiting time in hospitals. We found wait time improvements to be sustained for months, and documented new implementation at the study conclusion, but it is clear that study is not out of limitations. Additional research is needed to implement

the suggestions and assess their long-term sustainability, outcomes, applicability of the strategies in various departments. The study is limited to public hospitals only. Study of private hospitals can bring new vision to study. The socio-demographic analysis is limited to gender, age, education, and profession. Further income-wise analysis can be done. The study is limited to responses of inpatients, but including outpatient response is quite important. In future, research including staff attitude and supervision is important to make strong strategies for hospital. The study can include waiting time fillers in the study to get overall valuable results. It has been observed that patients are least satisfied if waiting times are longer than expected, relatively satisfied when waiting times are perceived as equal to expectations, and highly satisfied when waiting times are shorter than expected (Thompson & Yarnold, 1995). This can be analysed in future research.

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