Assessing Healthscapes – A Comparison Among Inpatients and Outpatients

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ABSTRACT

Today we are in a customer-driven market and understanding the pulse of the customer has become important for the success of an organization. Customer perceptions about the physical environment are not fully understood which is most important in service setting and the present study examines the healthscape in a teaching hospital. The study firstly identifies the factors that determine healthscape and secondly examines the difference among the inpatient and outpatient in their perception on items of healthscape. A structured questionnaire was administered using a systematic random sampling method for a sample size of 100 inpatients and 100 outpatients. The findings of the study are healthscape is identified to have three dimensions and there is difference among the inpatient and outpatient in their perception on items of healthscape.

Keywords: hospital, inpatient, outpatient, tangibles.

1.0 INTRODUCTION

Winston Churchill is recorded as saying "We shape our building and afterwards, they shape us" (Ezeh and Harris, 2007) signaling the beginning of recognition of physical environment/surroundings and its influence on humans. Shockingly, after about fifty years, Bitner (1992, p.59) shapes that "human behavior is influenced by the physical setting in which it occurs is essentially a truism" and further coined the term 'servicescape' to denote a physical setting in which a marketplace exchange is performed, delivered, and consumed within a service organization (Zeithaml *et al.,* 2009). However, the importance of service environment was recognized by Kotler (1973, p.61) who stated that the servicescape "may [in the future] become the chief form of competition". Thus, Kotler (1973) introduced the concept of the physical environment as an important part of the service experience and later Bitner (1992) took the concept of atmospherics a step further by developing a framework that addresses the effects of the physical environment on consumers in service settings and termed as 'servicescapes'. Thus far, Hutton and Richardson (1995) narrowed the topic to healthcare facilities as 'Healthscape' modifying Bitner's servicescape framework by combining it with Kotler's atmospherics (1973).

Servicescape, or service setting, plays a critical role in shaping customer expectations, differentiating service firms, facilitating customer and employee goals, and influencing the nature of customer experiences (Bitner, 1992). This highly complex physical environment has been recognized in many service organizations such as hospitals, hotels, airlines, banks, and restaurants and consequently addressed by requiring elaborate designs, layouts, and, interior decorations to achieve a variety of marketing and organizational objectives (Bitner, 1992; Raajpoot, 2002; Ryu and Jang, 2008). 'SERVQUAL' of Parasuraman *et al.,* (1988) have mentioned five dimensions for measuring service quality and one of which is 'tangibles'. Pai and Chary (2012) mention that tangibles have also been considered by various researchers such in studying service quality in healthcare as Anderson, (1996); Taner and Antony, (2006) while others have used terms as 'physical environment' (Arasli, *et al.,* 2008); 'physical environment and infrastructure' (Karassavidou *et al.,* 2009); 'physical surroundings' (Reidenbach and Sandifer-Smallwood, 1990) and 'pleasantness of surroundings' (Otani and Kurz, 2004) to denote the physical facilities and ambience. Although, the researchers are measuring service quality in healthcare using SERVQUAL or other scales as identified by the meta-analysis conducted by Pai and Chary (2013); regrettably, not much of the work is evident in hospital setup in terms of healthscape and the present paper attempts to address this gap in the literature.

Health care is by nature a credence purchase (Butler *et al.,* 1996); which is dissimilar from most other services; besides, is a need service wherein a customer (patient) arrives with some combination of illness, pain, anxiety, fear and under stress (Berry and Seltman, 2008). Hence as customers' arriving at healthcare facilities are distressed, concerned, anxious feelings and the unfamiliar environment will only worsen their negative emotions (Lee, 2011). Therefore healthcare providers need to understand those healthscape features that impact service quality to create healthscape so as to satisfy customers' needs for comfort, convenience, safety, security, privacy and support. Further, owing to the sector's overall importance to the economy (Burns *et al.,* 2008) it has become important to study them. Moreover, Brady and Cronin (2001) found using a meta-analysis that service quality has many different constructs, with the tangible physical environment emerging as an important and often neglected construct and it was only recently that the healthcare industry recognized that servicescapes are important resources that can impact customers (Fottler et al., 2000). Of late, some healthcare providers such as Kaiser Permanente and Mayo Clinic have implemented the practice of service design to enhance the quality of the experiences of patients and medical staff (Brown, 2008) and recently, Lee (2011) evaluated healthcare servicescape in a student healthcare clinic. Accordingly, this paper attempts to enhance our understanding of tangible quality construct 'Healthscape'.

2.0 STUDY METHODOLOGY

A questionnaire was developed in English that was pre-tested to arrive at appropriate format. It was converted into Kannada, the language spoken in the state of Karnataka as the study was conducted in one of the teaching hospital in the state of Karnataka, India. A sample of 100 inpatients and 100 outpatients were studied during the period of a week and comprised of 97 males and 103 females totaling to 200 respondents in total. The study adopted the sampling method of systematic random sampling in selecting the respondents for the study. Every fifth inpatient in the ward was

considered for the study to whom a questionnaire in English or Kannada was handed over based on the language proficiency of the respondent; whereas in case of outpatient every fifth patient visiting the hospital was considered for the study and questionnaire in any of one language was administered. There were 15 items for measuring healthscape which were considered from the previous study. Further a pilot study revealed that respondents had no difficulty in understanding the questionnaire items indicating and confirming the face validity of the instrument scale measurement as conducted by Arasli *et al.*(2008).

3.0 FOCUS OF THE STUDY

This study tries to answer two questions – firstly, 'what are the factors that determine healthscape?' and secondly 'Is there a difference among the inpatient and outpatient in their perception on items measuring healthscape?'

There is lack of research that compares the perception of inpatient and outpatient towards healthscape and we examine them in the next section. Ideally, the inpatients spend more time in the hospital when compared to outpatients and the assessments may or may not vary. Due to the severity of illness a person is admitted as inpatients while the outpatient may be in a better position to enjoy and participate in the service setting, thus examining whether there is variation in the assessment of inpatient and outpatient are important. Thus we propose the following hypothesis:

Hypothesis H_1: There is significant difference among inpatient and outpatient's perception of healthscape on (a) Modern and up to date equipment (b) Physical facilities are visually appealing (c) Adequacy of different facilities (d) Cleanliness (e) Infection free environment and treatment (f) Adequate hygienic care and procedures (g) Employees dressed neatly (h) Availability of required drugs (i) Comfortable ambient conditions and proper lighting (j) Appealing atmosphere (k) Clean rooms without foul smell (l) Sufficient waiting areas for patient and patient party (m) Easy to find way in hospital (n) Easy to find care facilities (o) Easy to use amenities

3.1 RESULTS

The internal consistency of the scale was performed through Cronbach's Alpha that was found to be 0.927 for the 15 item scale. Nunnaly (1978) has indicated 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature. To understand the factors of healthscape a factor analysis was performed using the principal component analysis extraction method and rotation method of varimax with Kaiser Normalization. The measure of sampling adequacy Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found to be 0.893 for the 15 items, and Bartlett's Test of Sphericity with significance value of 0.000, an exploratory factor analysis was conducted a shown in table 1. According to Kaiser (1974, cited in Dziuban and Shirkey, 1974) had refined the index further and suggested that anything in the .90s was 'marvelous', in the .80s 'meritorious', in the .70s 'middling', in the .60s 'mediocre', in the .50s 'miserable' and below .5 'unacceptable' and as such our KMO value is 0.893, which is meritorious. Following Hair *et al.* (1998) and Ryu and Jang (2008), eigenvalues that were more than one and variance explained were used to discover the number of factors to extract. From the

15-item scale, three factors were extracted accounting for 75% of variance. The three factors were named as visual appeal and layout, amenities, neatness and hygiene. The first factor visual appeal and layout has 6 items, a second factor amenity has 5 items and third factor neatness and hygiene has 4 items as shown in table 1.

Table 1: Exploratory factor analysis of healthscape items

Healthscape factors (alpha)	Factor Loading	Item to total correlation	Eigen Value	Variance explained		Item mean
				%	Cumulative	
Visual appeal and layout (.921)			7.86	52.382	52.382	
Easy to find care facilities	.928	.893				3.82
Easy to find way in the hospital	.917	.892				3.76
Easy to use amenities	.884	.841				3.82
Physical facilities are visually appealing	.584	.798				4.18
Clean rooms without foul smell	.65	.684				4.12
Appealing atmosphere	.584	.632				4.23
Amenity (.854)			2.49	16.583	68.965	
Sufficient waiting areas	.833	.665				4.32
Availability of required drugs	.789	.674				4.35
Modern and up to date equipment	.762	.750				4.32
Adequacy of different facilities	.757	.681				4.33
Comfortable ambient conditions	.558	.586				4.26
Neatness and hygiene (.882)			1.02	6.844	75.809	
Cleanliness	.835	.755				4.11
Infection free environment and treatment	.807	.831				4.24
Adequate hygienic care and procedures	.75	.817				4.27
Employees dressed neatly	.59	.669				4.37

The factor loadings ranged from 0.586 to 0.892 for the 15 items indicating good correlation and the Cronbach alpha ranged from 0.854 to 0.921, suggesting good internal consistency of items. Corrected item-total correlations were examined for each set of items with the results suggesting that none of the fifteen items needed to be deleted because they were more than 0.50.

The Hypothesis H_{1a} to H_{1O} is examined using the independent sample t test and results are shown in table 2. The results in table 2 indicate that the outpatients scored higher than inpatients on their perception of - 'modern and up to date equipment' supporting H_{1a} ($\alpha<0.001$); 'Infection free environment and treatment' supporting H_{1e} ($\alpha<0.001$); 'Adequate hygienic care and procedures' supporting H_{1f} ($\alpha<0.001$); 'Employees dressed neatly' supporting H_{1g} ($\alpha<0.001$); 'Availability of required drugs' supporting H_{1h} ($\alpha<0.05$); 'Comfortable ambient conditions and proper lighting' supporting H_{1i}

($\alpha<0.001$); 'Sufficient waiting areas for patient and patient party' supporting H_{1l} ($\alpha<0.001$). While there was no significant difference between outpatients and inpatients in terms of – 'Physical facilities are visually appealing' rejecting H_{1b} ($\alpha>0.05$); 'Adequacy of different facilities' rejecting H_{1c} ($\alpha>0.05$); 'Cleanliness' rejecting H_{1d} ($\alpha>0.05$); 'Appealing atmosphere' rejecting H_{1j} ($\alpha>0.05$); 'Clean rooms without foul smell' rejecting H_{1k} ($\alpha>0.05$); 'Easy to find way in hospital' rejecting H_{1m} ($\alpha>0.05$); 'Easy to find care facilities' rejecting H_{1n} ($\alpha>0.05$); 'Easy to use amenities' rejecting H_{1o} ($\alpha>0.05$).

Table 2: Test of Differences for Mean Values of inpatients and outpatients

Item	Patient type	Mean	S.D.	t value	p value	Remarks
Modern and up to date equipment	In patient	4.220	.5427	-2.626	.009	H_{1a} supported
	Outpatient	4.426	.5687			
Physical facilities are visually appealing	In patient	4.140	.5689	-.848	.398	H_{1b} not supported
	Outpatient	4.227	.8585			
Adequacy of different facilities	In patient	4.260	.5617	-1.497	.136	H_{1c} not supported
	Outpatient	4.393	.6888			
Cleanliness	In patient	4.040	.8278	-1.138	.256	H_{1d} not supported
	Outpatient	4.182	.9358			
Infection free environment and treatment	In patient	4.060	.6485	-3.863	.000	H_{1e} supported
	Outpatient	4.420	.6694			
Adequate hygienic care and procedures	In patient	4.080	.5628	-4.873	.000	H_{1f} supported
	Outpatient	4.460	.5397			
Employees dressed neatly	In patient	4.220	.5427	-3.915	.000	H_{1g}
	Outpatient	4.520	.5409			Supported
Availability of required drugs	In patient	4.260	.6296	-1.99	.048	H_{1h} supported
	Outpatient	4.447	.6982			
Comfortable ambient conditions and proper lighting	In patient	4.100	.5774	-3.627	.000	H_{1i} supported
	Outpatient	4.410	.6311			
Appealing atmosphere	In patient	4.165	.5449	-1.521	.130	H_{1j} not supported
	Outpatient	4.300	.7035			
Clean rooms without foul smell	In patient	4.080	.6618	-.661	.509	H_{1k} not supported
	Outpatient	4.160	1.0122			
Sufficient waiting areas for patient and patient party	In patient	4.140	.6670	-3.796	.000	H_{1l} supported
	Outpatient	4.500	.6742			
Easy to find way in hospital	In patient	3.640	.9377	-1.476	.142	H_{1m} not supported
	Outpatient	3.880	1.3279			
Easy to find care facilities	In patient	3.740	.8483	-1.021	.309	H_{1n} not

	Outpatient	3.836	1.2752			supported
Easy to use amenities	In patient	3.780	.9275	-.359	.72	H_{1o} not
	Outpatient	3.836	1.2609			supported

4.0 DISCUSSION

The healthscape consists of three dimensions – 'Visual Appeal and Layout' having 6 items, 'Amenity' has 5 items and Neatness and Hygiene has 4 items. As there are no studies with which our study could be compared, there is a need to examine these factors in other teaching hospitals.

Primarily, it is important to note than outpatients and inpatients have difference in terms of their perception towards the healthscape. As seen in the results in Table 2, out of the fifteen variables examined for the healthscape in the present study, outpatients displayed higher mean scores in all the fifteen variables when compared to inpatients of which seven were statistically significant - 'modern and up to date equipment', 'Infection free environment and treatment', 'Adequate hygienic care and procedures', 'Employees dressed neatly', 'Availability of required drugs', 'Comfortable ambient conditions and proper lighting', 'Sufficient waiting areas for patient and patient party' signifying that outpatients have good amount of time to understand the service environment compared to the inpatients.

Though there are no statistical significance in the other eight variables - 'Physical facilities are visually appealing', 'Adequacy of different facilities', 'Cleanliness', 'Appealing atmosphere', 'Clean rooms without foul smell', 'Easy to find way in hospital', 'Easy to find care facilities', 'Easy to use amenities', among the outpatients and inpatients, these should not imply as least influential. The explanations for these results could be due to the limitation of a smaller sample size of 100 respondents.

5.0 SCOPE FOR FUTURE STUDY

Future research could expand the concept of the present study to focus among outpatients and inpatients in different setting such as corporate and public hospital. Further healthscape comparisons could also be made in terms of gender which may be meaningful for the specialized hospitals such as birthing centers, rehabilitation centers and so on.

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