Are Public Hospitals Responding to Tangible and Reliable Service-Related Needs of Patients in the New South Africa?

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Understanding the determinants of healthcare satisfaction will lead to the improvement of healthcare quality in developing countries. In this study, in-patients and out- patients' expectations, perceptions and satisfaction related to services' reliability and tangibility provided by public healthcare in South-Africa are measured by using SERVQUAL. The major findings were that all patients demand excellent levels of response, but none of these are currently being met, resulting in dissatisfaction. The findings of this study could be used to guide public hospitals to render healthcare programmes that are more patient-centred; and to increase their efficiency in the context of scarce resources.

INTRODUCTION

Services delivery is becoming increasingly a vital element of national economies, and it is crucial to appreciate the distinguishing qualities of services, as well as the resulting management implications, with the specific focus on healthcare services. The recognition of the poor quality of healthcare delivery in developing countries (World Bank, 2004) has led to the adoption of new efforts to measure and monitor healthcare service quality.

In developing countries, such as South Africa, healthcare is a necessity or a 'basic need', involving a 'physiological cure', rather than 'care' as such, or even the ability to pay; whereas in developed countries, healthcare is often seen as a luxury. In these former countries, health insurance coverage is either not available, or else it is extremely expensive. In 2001, per capita health expenditure in Sub-Saharan Africa was $29, as opposed to the $4887 in the USA. The health budget was only 6% of the GDP in Sub-Saharan Africa, but almost 14% in the USA (Murthy & Okunade, 2008).

There are inequalities in health spending and service levels in the public sector, compared with those in the private healthcare sector in South Africa, where the health budget is approximately 9% of GNP. However, 60% of this is spent on private health. Only 18% of South Africans belong to medical aid schemes, yet the private healthcare system employs two thirds of the physicians (Solomon, 2004) and 85% of the pharmacists (Woolard, 2002). Those without health insurance are dependent on public healthcare services (De Jager & Du Plooy, 2009).

The delivery of quality healthcare services and the integration thereof in healthcare policies is a concern shared by health organisations worldwide (James, 2005:2). Lindelow and Wagstaff (2003) explain that the quality of health services directly influences health outcomes, health-related behaviour and patient satisfaction. In the past decade, in particular, patient satisfaction has become an important

performance indicator and outcome of healthcare (Sohail, 2003; Zineldin, 2006; Akter, Upal & Hani, 2008).

Research into healthcare satisfaction is vital to ensure high-quality care and patient satisfaction, as well as in the optimized use of scarce resources. As this is still limited in South-Africa (Wouters, Heunis, van Rensburg & Meulemans, 2008:210), determining the factors associated with patients' satisfaction is critical for public healthcare providers.

MARKETING STRATEGIES: HEALTHCARE SERVICES

According to Conway and Willcocks (2000), and Rivers and Glover (2008), there is a growing acceptance that marketing principles - and more specifically the application of the marketing perspective - is an accepted way to approach healthcare. This is supported by Kotler and Armstrong (2010). They are of the opinion that good service firms, like manufacturing businesses, use marketing to position themselves strongly in chosen markets. However, some marketing approaches may be different, because of the nature of the services or the tangible products provided.

These authors point out that there is a growing acceptance that marketing is more than simply a commercial tool to be used for commercial gain. Its application is being increasingly utilised by organisations where profit is not the major motive for existence. Managing services and implementing relationship-marketing, as well as internal strategies are some of the applications of marketing to healthcare.

Interactive marketing deals with the relationship that materialises during the consumption of the service process and which involves interaction between systems, physical resources, and employees. Swinehart and Smith (2004) point out that improving internal customer relationships and interactions will reduce redundancy, increase efficiency and satisfaction (Conway & Willcocks, 2000).

FIGURE 1
TYPES OF SERVICE MARKETING
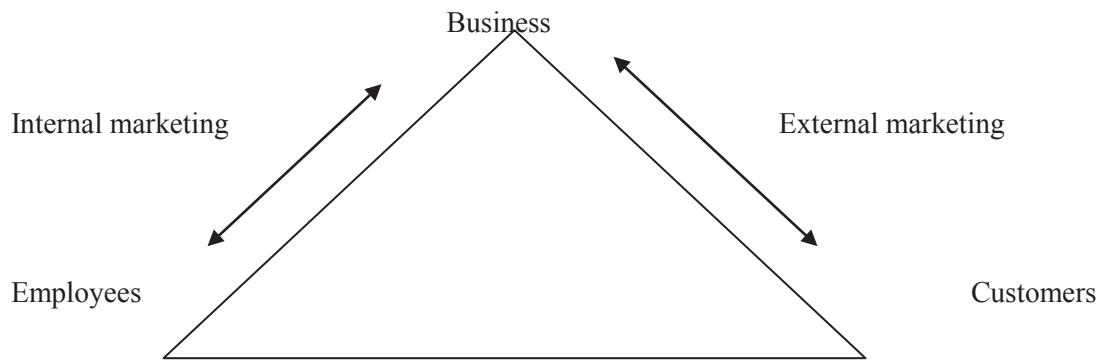
Source: Kotler & Armstrong, 2010

On the other hand, a more strategic approach is required where a relationship-marketing perspective is applied -- to build and maintain a relationship, not only with the resource providers, but also with other customers, including the patient. Patient satisfaction surveys are employed to bridge the gap between the patient and the service provider. These should be done against the background of the intangibility of services, which results in high levels of risk, and the difficulty for the consumer to evaluate the quality, thereby, causing them to rely on personnel information sources, physical evidence and price, rather than on the core service.

Service organisations, in return, react to this by focusing on physical evidence and service quality (Palmer, 2008:11). Service providers in the public healthcare sector should also be aware of the strategic (and management) implications that result from these characteristics.

A further challenge for managers and service providers in public healthcare arises from the fact that these services are provided by public organisations. The application of marketing to public services is unique and challenging compared with services in the private sector (Palmer, 2008: 37). In the public sector, the choice of the buyers and sellers is much more limited. In public healthcare, patients will only receive treatment at the hospital to which they are designated; and public healthcare organizations at various levels serve specific areas and needs, as determined by the policy of the South African government.

The aim of the public sector is not to make a profit; and it does not operate within narrow internal financial limits. Its goals are more diverse with various external stakeholders. Public managers have relatively limited discretion regarding the standards and the ways of service delivery, since these are based on legislation and the policies of the government.

In South Africa, quality public service delivery is the focus of the White paper on the Transformation of Public Services, and is guided by the Batho Pele (a Sotho word meaning "People-First") principle. This philosophy serves as a guideline for public-service delivery in South Africa. It demands that patients should be at the centre of healthcare service delivery that is capable of satisfying the healthcare needs of all South Africans equally.

Continuous evaluation of the quality delivered by public healthcare organisations in South-Africa is therefore essential in implementing the policies of the government effectively and efficiently (Arries & Newman, 2008:41; De Jager, Du Plooy & Ayadi, 2010).

SERVICE QUALITY IN PUBLIC HEALTHCARE

The World Health Organization (Wilkinson et al., 2004 in Sajid & Baig, 2007) define the quality of healthcare in terms of its efficiency, cost effectiveness and social acceptability. Two dimensions of service quality are usually considered in the literature, namely functional and technical quality. Functional quality refers to the service quality, as it is perceived by the customers, while technical quality is the actual output of the service that can be measured objectively.

The technical quality of health care comprises the accuracy of the diagnosis and the prescribed procedures, while functional quality is the manner of delivery of healthcare (Gronroos, 1984). Sohail (2003) notes that patients regard technical quality as being important, but tend to rely on functional quality when evaluating the quality of healthcare, as most patients do not have the necessary knowledge or expertise to evaluate the technical quality. Øvretveit (2004) distinguishes between three dimensions of quality. Patient or client quality -- which is similar to functional quality; professional quality which is related to technical quality; and management quality which refers to the standards for providing services efficiently without waste and following higher-level regulations. This author notes that quality healthcare service does not imply delivering the highest quality of care to all patients, but rather to meeting the needs of those patients most in need, and in a safe and effective way.

Sajid and Baig (2007) oppose the exclusive and unilateral use of technical criteria, such as mortality and morbidity when assessing the competency of public health providers. They claim that the satisfaction of the patient should be the most important criterion when assessing the effectiveness of all public healthcare systems worldwide. In this context, Andaleeb (2010) warns that this is usually not the case in developing countries, where the service experience of patients has – to date -- been largely ignored by healthcare providers.

This is problematic because patients' perceptions of healthcare service quality are likely to influence their usage of the available healthcare, as well as their trust in, and attitude towards treatment. These perceptions might even result in patients avoiding the public healthcare system or availing themselves of such services, only as a measure in last resort. Although patient satisfaction should not be the only

criterion when evaluating service quality, it offers valuable information associated with customer retention and patients' wants and needs.

Investigating patients' satisfaction with healthcare services is seen as a vital and useful tool for the optimum evaluation of healthcare providers. Healthcare quality in the developing countries should be improved for the following reasons: increasing patient dissatisfaction with higher costs (mainly in private hospitals), low quality in public healthcare services, raising service quality in order to increase the income of health workers, the necessity to increase the efficiency and effectiveness of healthcare management, to reduce the exploitation and misuse of medication and medical treatments -- as well as the need to adhere to basic humanitarian principles (Øvretveit, 2004).

The most popular model of service quality is SERVQUAL, a set of 22 structured and paired questions designed to assess customers' expectations of service provision and the customers' perceptions of what was actually delivered to them. This instrument is structured in five dimensions, namely: Tangibles, Reliability, Responsiveness, Assurance, Empathy: (Parasuraman, et al., 1988:35-43).

SERVQUAL is widely used by academics and practitioners to measure service quality --including numerous studies on service quality in the healthcare sector (Akter, Upal & Hani, 2008; Sohail, 2003:201). These dimensions of service quality are also applicable to services in the public healthcare sector. Reliability in healthcare implies that a patient will receive the correct treatment. Responsive health service means that patients receive prompt attention by the hospital staff, and that all patients will be treated equally.

This dimension also implies that the health service is delivered in a polite manner, and that the patient is consulted on the choice of any alternative treatment options. The assurance dimension can be seen as relating to the confidence of the patients in the qualifications and competence of the medical staff. The empathy aspect is reflected by the level of individual attention and care experienced by patients. Tangibles include aspects -- such as the cleanliness and appearance of health facilities and the equipment (Sajid and Baig, 2007).

Quality within healthcare service delivery refers to services that meet set standards, implying excellence, and that satisfy the needs of both consumers and healthcare practitioners -- in a way that adds significant meaning to both parties' healthcare experiences (Arries & Newman, 2008). Zineldin (2006: 61) suggests that quality healthcare should be regarded as the right of all patients; and it ought to be the responsibility of all the staff within healthcare organisations.

Internationally, healthcare quality is still a concern, as reflected by the various studies published recently (Sohail, 2003; Zineldin, 2006; Akter, Upal & Hani, 2008). Zineldin, (2006: 61) comment that health quality models applied in the West are not necessarily applicable in developing countries. He explored how patients in Egypt and Jordan evaluate the quality of healthcare delivered at a number of public and private hospitals. Subsequently health attributes found to be appropriate for hospitals in Egypt and Jordan were identified. Two existing models – namely, the technical/functional and SERVQUAL quality models were adopted to develop a new five-quality (5Q) model for healthcare. This includes technical aspects, a functional infrastructure, interaction and atmosphere qualities and services.

Akter, Upal and Hani (2008) assessed the service quality and satisfaction in suburban public hospitals in Bangladesh. They adopted and applied SERVQUAL to measure the difference between patients' expectations and their perception of the service that was actually delivered according to the following dimensions of service quality: responsiveness, assurance, communication, discipline (adherence to rules and regulations) and baksheesh (additional compensation). It was found that the majority of suburban public hospitals do not meet the patients' expectations on all these dimensions. This inevitably results in dissatisfaction.

The delivery of public healthcare can be improved by tracking these dimensions. Still, despite the importance of customer satisfaction, research on patients' perceptions of the service quality dimension is limited. This can be problematic, as quality of healthcare is a vital consideration in the strategic marketing of healthcare services. Gunawardane (2004) adds that the publications focusing specifically on the "reliability" aspect of a service are even more limited.

The focus of this paper will be on two dimensions: namely, tangibility and reliability. These issues will be discussed in the next section.

HEALTHCARE RELIABILITY

Gunes and Deveci (2002) acknowledge that the concept of reliability differs when measuring performances for physical products and services. They describe the reliability of a service process as its ability to meet the specified performance requirements in a given period of time. Standardized numerical measurements that are often used to evaluate the reliability of tangible goods, such as machines, electronic circuits, cars, and equipment cannot be applied directly in a service context, such as healthcare and education systems.

Gunawardane (2004) notes that an understanding of both technical, as well as functional reliability, is important from a managerial perspective. He explains that these two dimensions can be applied to both products and services. The actual physical performance can be evaluated objectively by measuring the physical error or failure rate of the product or service. Management can use this as an indication of the level of performance, whereas the customers' subjective expectations and perceptions can guide management in establishing the minimum acceptable level of reliability. This is a concept is related to the so-called "zone of tolerance" often documented in the area of perceived service quality (not specifically service reliability) (Parasuraman et al., 1991).

Unlike pure goods, pure services are co-produced with customers; and the production usually involves more human involvement; it adds greater inherent variability to the service production process (Berry & Parasuraman, 1991). The unmanaged variability in the quality of the customers' experience represents a significant threat to the enterprise's sustainability, because customers experience variation, not averages (Fleming, Coffman & Harter, 2005 in Kerfoot, 2007).

This implies that one moody nurse or one disrespectful doctor who interacts with a patient is a potential source of variation from the ideal that would spoil the patient's total perception and future loyalty, behaviour and "word-of-mouth". Performing a service consistently and accurately is central to services' marketing excellence (Berry & Parasuraman, 1991). This potential variability in healthcare services can be minimized by maintaining or improving the reliability (Grönroos, 1990).

Consistent, reliable service quality offers an important benefit to consumers -- inasmuch it limits their expectations, by reducing the need for any recurrence of service recovery. The concept of reliability differs when measuring the performance of physical products and services. The reliability of a service process refers to its ability to meet its specified performance requirements in a given period of time. Performing a service dependably and consistently is central to services' marketing excellence (Berry & Parasuraman, 1991). Several studies examining how patients evaluate heathcare quality found that service reliability is one of the most critical dimensions (Youssef, Jones & Hunt, 1996; Sewel, 1997; Jabnoun & Chaker, 2003).

THE PHYSICAL ENVIRONMENT OF HEALTHCARE

"Atmospherics" refers to the tangible or physical aspects in a service environment that influence customers' purchasing intentions. Hence, service providers can use atmospherics to increase the satisfaction, patronage, and word-of-mouth recommendations of customers (Swan, Richardson & Hutton, 2003). According to Boshoff and du Plessis (2009:248-249), physical evidence comprises the environment in which the service is delivered -- as well as any tangible cues, such as the appearance of the building, interior decoration, uniforms, parking, equipment and facilities.

The physical service environment plays a significant role in customers' evaluation of their service experience, and influences their evaluation of service delivery, as well as service quality perceptions. Physical aspects largely influence the opinions of customers when assessing intangible goods or service, since they often find components of service delivery too complex to evaluate. The physical environment

in healthcare can, for example, communicate empathy and reassurance -- even when the patient is still waiting in the reception area.

There seems to be agreement in the literature that the physical environment, as one of these dimensions, plays a critical role in patients' evaluation of healthcare services. However, several authors (Hutton & Richardson, 1995; Tsai, Wang, Liao, Lu, Sun, Lin and Breen, 2007) comment on the limited empirical research on the physical aspects or tangible environment of public healthcare.

Bakera and Lamb (1992) found that the physical environment in healthcare service delivery has an effect on the communication between patients, doctors and nurses; and it can help to create or even to improve positive attitudes in patients. They suggest that the tangible dimension in healthcare delivery should be to create and enhance positive service quality perceptions, and to guide hospitals in their market segmentation, targeting, and positioning (1992).

Ulrich, Quan, Zimring, Joseph and Choudhary (2004) from the field of architecture explored more recent areas of research on the physical environment in healthcare, including the design characteristics, such as single rooms versus multi-bed rooms, noise levels, lighting, ventilation, ergonomic designs, supportive working environments and layout. They argue convincingly that the physical environment where the healthcare service is delivered can facilitate positive outcomes for patients, as well as for the staff.

Several previous studies have explored the physical environment in healthcare settings. For example, Woodside Frey and Daly (1989) found that the location, equipment and facilities of the hospital were considered as critical issues by patients. Vandamme and Leunis (1993) reported that the most important dimensions defining overall service quality in a public hospital in Belgium were tangibility and assurance.

Hutton and Richardson (1995) found that the physical surroundings and sensory stimuli of healthcare facilities have an impact on patients' behaviour and that a positive experience with this environment will increase their satisfaction, their evaluation of the service quality, and any likelihood to return to this setting in the future. Sohail (2003) found that patients from private hospitals in Malaysia had expectations with regard to modern equipment, the visual appearance of the facilities and the professional appearance. Mostly, these were met because, originally, they had had relatively low expectations.

Kara, Lonial, Tarim and Zaim (2005) empirically categorised healthcare service quality determinants as tangible or intangible. They concluded that there is a real difference between the tangible and intangible factors that influence the service quality. It was found that the intangible factors were more important than the tangible ones in the hospital environment in Turkey. The relative unimportance of tangible factors in the healthcare of developing countries is worth mentioning, since the most valued dimensions were intangible.

The authors suggest that this is most probably due to two factors. Firstly, health services deal with human health and life. Thus, they are basically sensitive to intangible factors -- including reliability, courtesy, responsiveness and empathy. Secondly, the relative importance of intangible factors is influenced by culture and the intrinsic values of a country.

Swan, *et al.* (2003) found that patients in attractive hospital rooms evaluated doctors and nurses more positively and reported higher overall satisfaction compared with those in typical hospital rooms. Tsai, *et al.* (2007) investigated out-patients' perceptions of the physical environment of the waiting areas in a large medical centre in Taiwan. They found that out-patients' satisfaction levels differed significantly in terms of gender, age, visiting frequency, and visiting time.

HYPOTHESIS

Three primary hypotheses are tested for the reliable construct namely:

Hypothesis 1
> Ho: In- and out-patients have the same level of expectations with regard to the hospital's reliable related service construct.

If the Ho hypothesis is accepted, then it can be assumed that equality exists amongst in- and out-patients, and that all patients expect the same level of treatment with regard to reliability. On the other hand, if the Ho hypothesis is rejected, it is assumed that in- and out-patients' inequality exists in terms of their expectations.

Hypothesis 2

Ho: There exist no significant differences between in- and out-patients with regard to the perceived performance of the hospital in terms of reliable hospital services.

Hypotheses 3

Ho: There exist no significant differences between in- and out- patients' satisfaction levels with regard to the hospital's reliable service construct.

If the Ho hypothesis is accepted, then it implies that the expectations of patients are being met, leading to a feeling of satisfaction. On the other hand, if the Ho hypothesis is rejected, then it may be assumed that patients' expectations are not being met, which may lead to a feeling of dissatisfaction. The null hypothesis is tested at a 0.05 significance level.

Three primary hypotheses are tested for the tangibility construct namely:

Hypothesis 1

Ho: In- and out-patients have the same level of expectations with regard to a hospital's tangibility construct.

If the Ho hypothesis is accepted, then it can be assumed that equality exists between in- and out-patients, and that all patients expect the same level of treatment with regard to tangibility. On the other hand, if the Ho hypothesis is rejected, it may be assumed that in- and out-patients' inequality exists in terms of their expectations.

Hypothesis 2

Ho: There exist no significant differences between in- and out-patients with regard to the perceived performance of the hospital in terms of tangibility.

Hypotheses 3

Ho: There exist no significant differences between in- and out patients' satisfaction levels with regard to the hospital's tangible service construct.

If the Ho hypothesis is accepted, then it implies that the expectations of patients are being met, leading to a feeling of satisfaction. On the other hand, if the Ho hypothesis is rejected, then it may be assumed that patients' expectations are not being met, which may lead to a feeling of dissatisfaction. The null hypothesis is tested at a 0.05 significance level.

PURPOSE AND OBJECTIVES OF THE RESEARCH

The purpose of this paper is to examine tangibility and reliability as determinants of service quality in a government-controlled hospital in South Africa.

The objectives of this study are twofold namely:

- To determine if equality exists between in-patients and out-patients for both the service tangibility and reliability constructs in terms of the expectations of patients in a government-controlled hospital in South Africa (expectations).
- To determine if equality exists between in-patients and out-patients for both the service tangibility and reliability constructs provided to patients in a government-controlled hospital in South Africa (perceived performance).
- To determine whether the expectations of in-patients and out-patients on how hospital staff respond to their needs in terms of the tangible and reliability constructs variables, are being met (satisfaction).

In-patients refers to patients admitted in the hospital, while out-patients refers to patients who receive medical consultation and/or treatment without being admitted.

RESEARCH METHODOLOGY

The research methodology that was used for the investigation is subsequently explained. The data analysis illustrates the levels of importance, the perceived performance, and consequently, the satisfaction of these two dimensions of service quality for in- and out- patients of the hospital, namely, tangibility and reliability. The SPSS version 17.0 statistical package was utilised to analyse the data. For this analysis, the Kolmogorov-Smirnov Test was employed, based on the assumption that if the significant values exceed 0.5, normality could not be assumed; and the researchers would have to rely on employing non-parametric analysis techniques. As normality could not be assumed after applying the Kolmogorov-Smirnov Test, the researchers employed the Kruskall Wallis test to test the null hypothesis -- and the alternative hypothesis that there exists no significant difference between the levels of importance and satisfaction between the two groups, respectively; and that there exist significant differences between the two groups of patients.

The Sample Framework, Measuring Instrument, Data Collection and Analysis

A service satisfaction survey was conducted in 2007 amongst patients treated at a provincial hospital in Gauteng, South Africa. The attitudes of the patients were tested regarding pre-identified service quality aspects related to healthcare. A total of 448 patients (205 in- and 242 outpatients) were personally interviewed during the research. Although an attempt was made to select the patients randomly, this was not always possible because some of the patients were not able -- or willing -- to complete the questionnaires. In such cases, substitutes were selected to overcome the problem of non-responses.

The expectations and perceptions of in- and out-patients with regard to the hospital's tangibility-related services are reported in this paper. The two dimensions represented a mirror-image of each other. Similarly, the expectations and perceptions of in- and out-patients with regard to the hospital's reliability-related services are reported in this paper.

A five-point Likert type scale was used to measure the levels of perceived performance of the hospitals, as well as the expectation levels of the patients. Respondents were asked to indicate their evaluation on the scales, in which 1 = Very important (Excellent), and 5 = Not important at all (Not good at all.)

Altogether 11 items were included in the tangible dimension presented by the hospital. Similarly, seven items were used to measure the reliability-related service construct offered by the hospital. An item analysis was carried out to test the reliability of the questionnaire. Overall Cronbach coefficients -- of Alpha of 0.88 and 0.91 -- were measured for expectations and performance, respectively. Data were captured by a trained assistant and analysed using the SPSS version 17 statistical package. Data were analysed after grouping the list of 18 pre-identified service-related variables into two service-related groupings. Only the tangibility and reliable dimensions were analysed for the purposes of this paper.

FINDINGS

Table 1 indicates that the most important variable in the tangibility category is the general condition of the equipment. This variable was rated as being the most important variable, by the in-patients, while the out-patients rated it second. However, no significant differences exist between the two sample groups. The neat appearance of staff members was rated in the second most important position. Out-patients rated it first, while it was rated second by in-patients. No significant differences were measured between the two sample groups. Overall, the cleanliness of the ablution facilities was rated third, while these items were rated second and third by the out-patients and in-patients, respectively.

Overall, the two least-important variables in this category were the convenience of parking and the quality of the cafeteria services. Both sample groups rated these two variables as either the least or second-least important variable.

TABLE 1
TEST FOR DIFFERENCES WITH REGARD TO EXPECTATIONS ON TANGIBILITY CONSTRUCTS

Tangibility:	N	In-patients		Out-patients		Total patients		Exp Kruska
		Mean	Std	Mean	Std	Mean	Std	
General condition of equipment	448	1.71 1	1.01	1.73 2	1.09	1.71 1	1.05	0.984
Visual appearance of Physical facilities	448	1.89 4	1.06	1.95 6	1.11	1.91 6	1.09	0.574
Neat appearance of staff	448	1.79 2	0.91	1.69 1	0.86	1.74 2	0.89	0.242
Convenience of parking	448	3.07 11	1.24	2.6 10	1.65	2.85 11	3.34	0.096
Availability of adequate seating	448	2.22 9	1.29	2.03 7	1.25	2.13 8	1.29	0.059
Quality of cafeteria services	448	2.62 10	1.66	2.62 11	1.71	2.62 10	1.68	0.826
Cleanliness of ablution facilities	448	1.83 3	1.32	1.73 2	1.23	1.79 3	1.28	0.473
Clear and informative signage	448	1.99 7	1.22	1.79 5	1.08	1.89 5	1.16	0.060
Visibility of Staff identity	448	1.96 6	1.2	2.08 8	1.27	2.02 7	1.24	0.471
Cleanliness of corridors	448	1.9 5	1.2	1.74 4	0.86	1.83 4	1.06	0.578
Noise level of corridors	448	2.03 8	1.18	2.32 9	1.32	2.16 9	1.26	0.011

Significant on 0.95 level   Std= Standard deviation

Table 2 indicates the perceived performance of the tangible variables categorised under the construct. The neat appearance of the staff was overall perceived as the best. While in-patients also perceived it best, it was perceived second best by the out-patients. However, no significant differences were measured between the two sample groups. The cleanliness of the corridors was overall perceived second best by the

sample. While the out-patients rated it best, it was rated in fifth position by the in-patients. However, no significant differences were measured between the two sample groups. Overall, the visual appearance of the physical facilities was rated third. While in-patients also rated it third, it was rated fourth by out-patients. No significant differences were, however, measured between the two sample groups.

Overall, the convenience of the parking facilities was rated as the least-best perceived variable in this category. It was rated by both in- and out-patients as the least-best perceived variable.

TABLE 2
TEST FOR SIGNIFICANT DIFFERENCES WITH REGARD TO PERCEIVED PERFORMANCE ON TANGIBILITY CONSTRUCTS

Tangibility:	N	In-patients		Out-patients		Total patients		Prf Kruska
		Mean	Std	Mean	Std	Mean	Std	
General condition of equipment	448	2.05 2	1.1	2.24 6	1.28	2.14 4	1.19	0.143
Visual appearance of Physical	448	2.1 3	1.3	2.14 4	1.12	2.12 3	1.23	0.316
Neat appearance of staff	448	1.91 1	1.06	1.97 2	1.1	1.94 1	1.09	0.570
Convenience of parking	448	3.58 11	1.76	3.63 11	1.69	3.6 11	1.73	0.732
Availability of adequate seating	448	2.78 9	1.57	2.57 8	1.29	2.68 8	1.46	0.541
Quality of cafeteria services	448	3.24 10	1.9	3.1 10	1.71	3.19 10	1.81	0.594
Cleanliness of ablution facilities	448	2.47 8	1.53	2.29 7	1.44	2.39 7	1.49	0.187
Clear and informative signage	448	2.35 6	1.41	2.1 3	1.19	2.24 6	1.33	0.099
Visibility of Staff identity	448	2.16 4	1.24	2.22 5	1.22	2.19 5	1.23	0.437
Cleanliness of corridors	448	2.18 5	1.35	1.95 1	0.1	2.08 2	1.22	0.377
Noise level of corridors	448	2.39 7	1.3	2.66 9	1.3	2.51	1.32	0.012

Significant on 0.95 level   *Std= Standard deviation*

Table 3 indicates the expectations of the sample regarding the reliability-related construct. Overall, it seems as if the availability of doctors in this construct has been indicated as the most important (expected) variable in the construct. It was rated as the most important variable by each respective sample group; and no significant differences were measured between the two groups. Proper medical treatment was overall rated the second most-important variable; and it was rated second and third most-important variable by out-patients and in-patients, respectively.

No significant differences were measured between the two groups. The overall third most- important variable in the reliability construct was the availability of prescribed medicine. It was also rated third and second by the out-patients and in-patients, respectively. The variable that was overall and individually

rated as being least important was the dependability on medical staff. No significant differences were measured between the two sample groups.

TABLE 3
TEST FOR DIFFERENCES WITH REGARD TO EXPECTATIONS
ON RELIABILITY CONSTRUCTS

		In-patients		Out-patients		Total patients		
Reliability:	**N**	**Mean**	**Std**	**Mean**	**Std**	**Mean**	**Std**	**Sig**
Availability of prescribed medicine	448	1.652	1.04	1.51	1.00	1.593	1.02	0.691
Availability of nurses	448	1.663	0.97	1.65	1.01	1.624	1.00	0.193
Availability of doctors	448	1.561	0.93	1.341	0.76	1.451	0.86	0.004
Proper information on condition and treatment to	448	1.695	1.11	1.594	0.94	1.645	1.04	0.238
Proper medical treatment	448	1.663	1.08	1.472	0.91	1.572	1.02	0.033
General trust in medical staff	448	1.86	1.09	1.836	1.17	1,826	1.13	0.927
Dependability of medical staff	448	1.937	1.04	1.847	1.1	1.887	1.07	0.075

Significant on 0.95 level   *Std = standard deviation*

Table 4 indicates the perceived performance of the sample on the reliability construct. Overall, as well as individually, the best perceived variable in this construct was the availability of nurses. Significant differences were however measured between the two sample groups. Overall, the second best-perceived variable measured, was proper medical treatment. It was rated third and second by the out-patients and in-patients respectively.

Significant differences between the two sample groups were measured. The overall third best-perceived variable is the availability of the doctors. It was rated second-best perceived by the out-patients and fifth by the in-patients. No significant difference was measured between the two sample groups. Overall, the least best-perceived variable in the reliability construct was dependability on the medical staff.

TABLE 4
TEST FOR SIGNIFICANT DIFFERENCES WITH REGARD TO PERCEIVED PERFORMANCE ON RELIABILITY CONSTRUCTS

Reliability:	N	In-patients		Out-patients		Total patients		
		Mean	Std	Mean	Std	Mean	Std	Sig
Availability of prescribed medicine	448	2.13	1.24	2.527	1.56	2.286	1.41	0.009
Availability of nurses	448	1.961	1.08	2.161	1.27	2.051	1.18	0.171
Availability of doctors	448	2.155	1.24	2.182	1.29	2.163	1.88	0.334
Proper information on condition and treatment to	448	2.26	1.21	2.344	1.31	2.265	1.26	0.306
Proper medical treatment \	448	2.032	1.05	2.263	1.41	2.142	1.24	0.412
Competence of medical staff (General trust in	448	2.144	1.07	2.385	1.41	2.254	1.25	0.309
Dependability on medical staff	448	2.247	1.11	2.466	1.38	2.347	1.25	0.234

Significant on 0.95level   Std = standard deviation

TABLE 5
TEST FOR SIGNIFICANT DIFFERENCES BETWEEN EXPECTATIONS AND PERCEIVED PERFORMANCE OF RELIABILITY

Reliability:	In-patients				Out-patients				Total patients		
	Em	Pm	Em – Pm	Sig	Em	Pm	Em-Pm	Sig	Em	Pm	Em-Pm
Availability of prescribed medicine	1.65	2.1	-0.455	0.0001	1.51	2.52	-1.017	0.0001	1.593	2.286	-0.696
Availability of nurses	1.66	1.96	-0.301	0.0001	1.6	2.16	-0.563	0.0001	1.624	2.051	-0431
Availability of doctors	1.56	2.15	-0.597	0.0001	1.34	2.18	-0.846	0.0001	1.451	2.163	-0.717
Proper information on condition and treatment	1.69	2.2	-0.516	0.0001	1.59	2.34	-0.755	0.0001	1.645	2.265	-0.625
Proper medical treatment	1.66	2.03	-0.374	0.0001	1.47	2.26	-0.451	0.0001	1.572	2.142	-0.574
General trust in medical staff	1.8	2.14	-0.343	0.0001	1.83	2.38	-0.552	0.0001	1.826	2.254	-0.431
Dependability of medical staff	1.93	2.24	-0.312	0.0001	1.83	2.46	-0.634	0.0001	1.887	2.347	-0.463

Em = Expectations mean   Pm = Perceived performance mean   Significant on 0.95 level

Significant differences exist between expectations and perceived performance for both in- and out-patients on all reliability variables (Table 5). This is an indication that expectations had not been met. The overall smallest deviation between expectations and perceived performance was measured in terms of both the availability of nurses and the competence of the medical staff. In both cases, in-patients were less dissatisfied with the two variables. In terms of the availability of nurses, it was rated in fourth position in terms of overall expectations in this construct.

In the case of the competence of the medical staff, it was rated in sixth position in terms of expectations. The overall third-smallest gap was measured in terms of the dependability of the medical staff. It was however rated in last position in terms of expectations. In-patients were less dissatisfied compared with out-patients.

The variable in this category that was rated overall as the most unsatisfactory, was the availability of doctors. In-patients indicated the highest level of dissatisfaction with regard to this variable. Significant differences exist between the expectations and the perceived performance levels for both in-and out-patients on all tangibility variables (Table 6). This is an indication that expectations have not been met.

TABLE 6
TEST FOR SIGNIFICANT DIFFERENCES BETWEEN EXPECTATIONS AND PERCEIVED PERFORMANCE OF TANGIBILITY

Tangibility:	In-patients				Out-patients				Total patients		
	Exp Mean	Prf Mean	Gap	Kruska Gap	Exp Mean	Prf Mean	Gap	Kruska Gap	Exp Mean	Prf Mean	Gap
General condition of equipment	1.71	2.05	-0.34 5	0.0001	1.73	2.24	-0.51 10	0.0001	1.71 1	2.14 4	-0.43 7
Visual appearance of Physical facilities	1.89	2.1	-0.21 3	0.0001	1.95	2.14	-0.19 2	0.0001	1.91 6	2.12 3	-0.21 3
Neat appearance of staff	1.79	1.91	-0.12 1	0.0001	1.69	1.97	-0.28 4	0.0001	1.74 2	1.94 1	-0.2 2
Convenience of parking	1.07	3.58	-2.51 11	0.0001	2.6	3.63	-1.03 11	0.0001	2.85 11	3.6 11	-0.75 11
Availability of adequate seating	2.22	2.78	-0.56 8	0.0001	2.03	2.57	-0.54 9	0.0001	2.13 8	2.68 8	-0.55 8
Quality of cafeteria services	2.62	3.24	-0.62 9	0.0001	2.62	3.1	-0.48 9	0.0001	2.62 10	3.19 10	-0.57 9
Cleanliness of ablution facilities	1.83	2.47	-0.64 10	0.0001	1.73	2.29	-0.56 10	0.0001	1.79 3	2.39 7	-0.6 10
Clear and informative signage	1.99	2.35	-0.36 6	0.0001	1.79	2.1	-0.31 5	0.0001	1.89 5	2.24 6	-0.35 6
Visibility of Staff identity	1.96	2.16	-0.2 2	0.0001	2.08	2.22	-0.14 1	0.0001	2.02 7	2.19 5	-0.17 1
Cleanliness of corridors	1.9	2.18	-0.28 4	0.0001	1.74	1.95	-0.21 3	0.0001	1.83 4	2.08 2	-0.25 4
Noise level of corridors	2.03	2.39	-0.36 6	0.0001	2.32	2.66	-0.34 8	0.0001	2.16 9	2.51 9	-0.35 5

*Em = Expectations mean   Pm = Perceived performance mean   *Significant on 0.95 level*

The overall smallest deviation between expectations and perceived performance is measured in terms of the visibility of staff identities, where out-patients are less dissatisfied than in-patients. This variable was rated seventh in terms of expectations, and fifth in terms of perceived performance of the hospital's tangibility-related services.

The overall second smallest deviation between expectations and perceived performance is the neat appearance of staff members. In-patients are less dissatisfied with this variable. In terms of the total sample's expectations it was also rated in second position.

The variable in this category that was perceived most dissatisfied was convenience of parking. In-patients indicated the highest level of dissatisfaction with regard to this variable. This variable was rated less important in terms of expectations, however.

CONCLUSIONS AND MANAGEMENT IMPLICATIONS

According to numerous newspaper reports, service delivery in public hospitals is under suspicion. The purpose of this paper was, thus, to examine reliability and tangibility as determinants of service quality in government-controlled hospitals in South Africa. The results of the investigation hold important implications for future planning and development in the South African healthcare industry -- and more specifically in public hospitals. Service managers should take cognisance of the most important service quality issues identified in this investigation.

The overall-most important variable in the service tangibility category was the general condition of equipment, while the neat appearance of staff members was overall rated second-most important variable, followed by the cleanliness of the ablution facilities in third position. In terms of perceived performance, the neat appearance of the staff was overall perceived best, while the cleanliness of the corridors was overall perceived second best by the sample. Overall, the visual appearance of the physical facilities was rated third. Expectations were, however, not met -- which resulted in dissatisfaction. The overall two least-important variables in this category were the convenience of parking and the quality of the cafeteria services.

In terms of their expectations, the availability of doctors and the availability of medical treatment for patients were identified as the two most-important variables of service reliability. The availability of nurses and proper medical treatment were rated first and second in terms of perceived performance of the hospitals. However, measurements confirmed that satisfaction was never met. Therefore, it is important to communicate these findings to the respective individuals or groups who are taking responsibility for satisfying patients' needs, particularly in public hospitals.

These tested variables should be broken down into individual components in order to arrive at a better understanding of what is expected by the patients in the reliability-related category.

The importance of these findings is that they contribute towards a constructive paradigm shift that incorporates the benefits of an improved perception of service delivery that is not necessarily limited to the public health sector. Based on the findings of this study, it can be recommended that the public health sector should consider investment in, firstly, an analysis of patients' perceptions of the performance of a hospital on an ongoing and formalised basis; and secondly, of proper staff and management training sessions in order to address issues of dissatisfaction that result from the survey.

With regard to specific outcomes, service managers should be aware of the various gaps in performance in the service-reliability dimension, such as the availability of doctors and nurses.

In conclusion, the findings of this study have clearly identified important positive and negative perceptions regarding healthcare services provided by the hospital under examination. These findings substantiate the conclusion that it is imperative hospital management should take the necessary measures to improve the perceived performance of the hospital. A similar approach could be considered and implemented to satisfy the needs of in-patients and out-patients overall, since no significant differences were found between the two groups.

As the aim of the survey was to identify broad categories of service-related constructs, it is suggested that in areas of noticeably weak performance, steps should be taken to explore more individual aspects under the particular heading of reliability, and to subject these to an extensive investigation.

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