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Quality Evaluation in Professional Knowledge-Intensive Services

ABSTRACT

The purpose of this study is to describe and analyse the evaluation of quality in professional knowledge-intensive services in a private hospital. Research was conducted through a mail survey. In total, 240 questionnaires were delivered. The final number of returned questionnaires was 198–a response rate of 83 per cent. First, a theoretical framework for the surgical-service process was created. Second, on the basis of this theoretical framework, using data-reduction methods through the employment of factor analysis, the underlying structures of service-quality dimensions were constructed. The findings indicate that there is a close interplay and interdependence between the quality dimensions of curing and caring. Consequently, the distinction between curing and caring is by no means absolute. Surgical procedure can be seen as an overriding category in which both medical techniques and relational abilities are needed.

INTRODUCTION

In practically all advanced nations the service sector has become the largest element of the economy and the significance of services in modern society is indisputable. Services account for a very large part of economic activity and the service sector constantly increases its share of gross domestic product (GDP), employment, and international trade. Services account for

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roughly two-thirds of GDP in developed countries and almost one-half of GDP in developing countries (Lowendahl, 2000).

Health care is a notable business in the service sector. In most industrial countries, health care accounts for approximately 10 per cent of the GDP (Guidelines…, 1999). Health care can be differentiated into private and public sectors. In this context, the term 'private sector' refers to those health-care service providers who are not directly controlled by the state or the local authorities, and who are engaged in economic activities as defined in relevant legislation.

The present study concentrates on surgical services provided by the private health-care sector, in which business organisations provide additional and complementary medical services. This topic is very interesting because the growth in this sector is approximately 5 per cent a year, and private health care is increasingly important in providing crucial medical services, especially with respect to out-patient treatment and doctor's consultations (Guidelines…, 1999).

The purpose of this study is to describe and analyse the evaluation of quality in professional knowledge-intensive services in a private hospital. First, the study discusses medical services as professional services. Second, the article reviews relationships in medical services. Third, a theoretical framework for understanding the surgical-service process and its quality dimensions is created. Fourth, a description of the data collection and statistical methods used in the study is presented. Fifth, quality dimensions in the surgical-service process are derived by factor analysis. Finally, conclusions and managerial implications based on the study are provided.

MEDICAL SERVICES AS PROFESSIONAL SERVICES

Services are heterogeneous and extremely difficult to define in general terms. Several classifications of the features of services have been presented in the marketing literature, but most commonly services are distinguished from manufacturing industries on the basis of four generic characteristics. These are (i) inseparability or simultaneity (production and consumption of services are at least partly simultaneous, and customers participate in the production process to some extent); (ii) intangibility (immaterial character); (iii) heterogeneity (less standardised than products); and (iv) perishability (cannot be stored) (Arnerup-Cooper and Edvardsson, 1998; Lowendahl, 2000; Mudie and Cottam, 1999; Zeithaml and Bitner, 2002).

Gummesson (1995) has strongly criticised the four generic characteristics of services, especially the last three. Services can sometimes be very concrete, especially in the case of health care (for example, surgery). Gummesson (1999) has also argued that certain services (such as banking) are quite standardised. Perishability of services is also under critique. Gummesson (1999) has pointed out that services can be stored within systems or people. It seems that the

key characteristic of services is inseparability. The simultaneity of consumption and production in services requires interaction between the customer and the service provider and emphasises the importance of long-term relationship between them. Indeed, interaction between two parties is a key concept in services marketing and management (Glynn and Lehtinen, 1995; Gummesson, Lehtinen and Grönroos, 1997).

Services are very heterogeneous–some being highly knowledge-intensive, such as research and development, whereas others are not at all knowledge-intensive (Aharoni, 1993; Alvesson, 1995; Lowendahl, 2000). In the majority of earlier studies, medical services have been included in the group of professional services–a subcategory within the service industry, as often portrayed in the marketing literature (Grönroos, 2000). The categorising of services is, however, somewhat problematic, and some overlapping among the categories is inevitable (Hellman, 1996; Lowendahl, 2000).

Professional services are, themselves, very heterogeneous. The number and diversity of professional service firms have increased substantially over the past two decades. The literature suggests that professional services have certain common characteristics (Lovelock, 1983; Lowendahl, 2000; Roe, 1998; Yorke, 1990). Distinctive features are complexity, expertise, competence, and demanding problem-solving activity. Professional services are provided by qualified experts with a substantial fund of specific knowledge, which is based on education, experience, and special skills. An industry-specific code of ethics, which regulates the service provider's conduct, is typical of professional services. Societal acceptance is referred to as one of the basic characteristics of professional services. The literature further suggests that professional services are strictly confidential and that a high degree of customer uncertainty is often involved in purchasing and evaluating professional services (Alvesson, 1995; Halinen, 1994).

The management of professional services is ordinarily built upon relationships, rather than upon transactions. Marketing professional services includes the establishment, maintenance and development of long-term customer relationships, so that individual and organisational objectives are met (Gummesson, 1996; Sheth and Parvatiyar, 1995).

A medical service can be defined as a health-care service intended to influence a person's health, directly or indirectly, through procedures executed by medically educated personnel. Medical service providers are organisations, institutions, and clinics, in which medically educated staff produce these services in interaction with patients. Supply of these services is concentrated in hospitals, clinics, and other premises devoted to the provision of health-related services. Sometimes it can be difficult to distinguish clearly between different activities in health-care services. In hospitals, a medical service can be a long and complex chain of linked services and other activities intended to provide certain services, such as a surgical procedure (Gummesson, 2000).

Despite often being portrayed as part of the professional services framework, medical services are not like educational or management services, for instance. Medical services are special in the sense that the whole idea of 'business' in relation to this area is relatively new. Medical services have long been thought of as being a non-profit and non-commercial activity and, despite recent growth in the private medical sector, the word 'business' has not been easily associated with medical services. Sensitivity and value considerations are significant aspects of medical services. Indeed, marketing activities, such as advertising, must be carried out with considerable care and caution (Ojasalo, 1999).

From ancient times people have sought out professional services for their personal health. To receive these types of services, customers must usually physically enter the service process. That is, medical services are professional services in which patients usually visit the service facility in person. Patients are usually actively involved with the service provider and its personnel throughout the entire service process (Lovelock and Wright, 2002; MacStravic, 1988).

RELATIONSHIPS IN MEDICAL SERVICES

From the technical point of view, many patients are not always convinced that they are given proper medical treatment. From the relationship point of view, many patients can feel that they are not treated with appropriate respect and that there is no satisfactory two-way communication with medical staff. The patient's interactive role in medical treatment has increasingly come into focus, but this role has often been reduced to communication and single issues– such as being punctually received by the doctor (Gummesson, 1991; 2000).

In medical services, in particular, the relationship between the customer and the service provider is important. This fact has always been evident in the Nordic school of research into services marketing, and it has gradually become more apparent as the relationship aspect of buyer-seller interactions is studied (Brown, Fisk and Bitner, 1994; Glynn and Lehtinen, 1995).

Relationships are composed of higher-level and lower-level components. Higher-level components can be divided into increasingly small lower-level components. Various components of relationships have been identified in different relational contexts and several concepts have been used to describe them (Liljander and Strandvik, 1995; Holmlund, 1997).

Ojasalo (1999) has identified assignment and interaction as hierarchical lower-level components of a relationship in the context of professional services. Liljander and Strandvik (1995) have classified interactions into acts, episodes, and relationships. Holmlund (1996) has further developed and refined interactions into more detailed aggregation levels. She has categorised interactions into actions, episodes, sequences, and relationships, which, taken together, constitute the partner base of a focal service provider. Lower levels of interaction are embedded

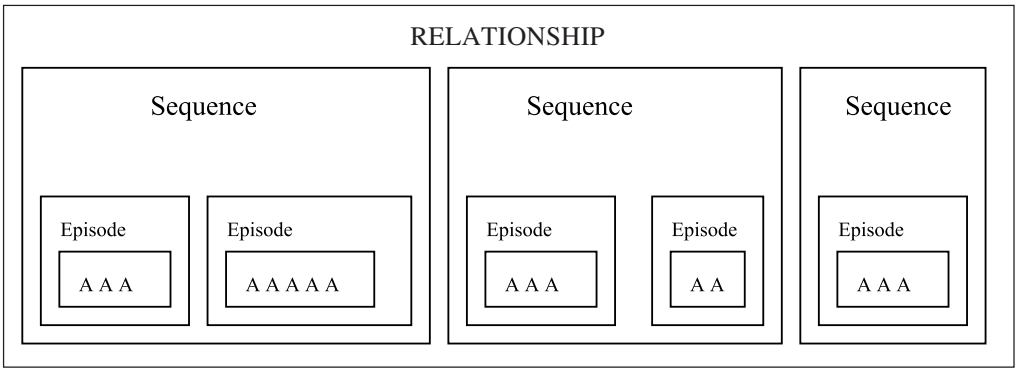
in higher levels, because they are part of the aggregated higher levels in a hierarchical order. This categorisation into five levels–actions, episodes, sequences, relationship, and partner base–encompasses the whole relationship at several levels of interaction, and also encompasses subsequent actions and episodes (Holmlund, 1996). The fifth level of partner base is principally applicable to situations in which network partners are required in business relationships, whereas the other four are appropriate to the analysis of relationships in general. This novel way of dividing relationships into several layers on different levels of aggregation gives the marketer an instrument detailed enough to be used in the analysis of interactions between service providers and their customers (Grönroos 2000).

The most detailed type of interaction is comprised of actions, which form the lowest hierarchical level of interactions. Actions can be concerned with any kind of exchange element–including products and services, information, money and social contacts. Interrelated actions can be grouped into interactions on a higher episode level. Episodes are defined as several interconnected actions, and represent a minor natural entity on the next hierarchical level within the relationship. Interrelated episodes can, in turn, be grouped into a sequence. The completion of a sequence constitutes a vulnerable period of time in a relationship during which the parties can make crucial evaluations. A relationship refers to the level of analysis encompassing the entire relationship. Consequently, this level is comprised of all sequences which, in turn, are comprised all episodes which, in turn, consist of all actions within a relationship (Holmlund, 2001).

A distinction between episode-dominated and relationship-dominated services can be made–according to whether the service is of a discrete nature, whereby the customer makes a separate decision each time regarding which service provider to use, or of a continuous nature, whereby the customer makes a contract about service delivery with the service provider. There are also services which fall between discrete and continuous services. Such services might be of a long duration but be composed of discrete components, as is the case with medical services. These services can consist of many episodes and acts which, taken together, can be described as a relationship. A distinction can also be made according to how often the service is consumed. Services of a discrete type, which are seldom used, can be said to be episode-dominated. In some other cases, relationships grow in importance (Liljander and Strandvik, 1995).

Based on individual aggregation levels, Holmlund (1996) has proposed a comprehensive framework for understanding and analysing ongoing interactions in a relationship. The framework is equally valid for describing and analysing relationships in both consumer markets and business markets (Grönroos, 2000). This framework consists of a continuous flow of actions, episodes, and sequences–which form the relationship. Figure 1 illustrates the categorisation of the aggregation levels of a relationship (Holmlund, 1996).

Figure 1. Different interaction levels in a relationship



The lowest level of interactions consists of actions (designated as 'As' in Figure 1). They are the smallest unit of analysis in the interaction process (Holmlund, 1997). In the service management literature, actions are often called 'moments of truth' (Normann, 2000). An examples of an action could include a telephone call as part of the appointment procedure for a doctor's consultation.

Interrelated actions form a minor element of a relationship. These interrelated actions are called episodes. Every episode involves a series of actions. In medical services, an episode can be a preliminary examination before a surgical procedure. Interrelated episodes can be grouped into a sequence, which is a more extensive entity on an interaction level. A sequence can involve a certain period of time, and sequences can overlap, so that episodes belonging to one sequence can also be part of another sequence (Holmlund, 2001). In the context of this study, a surgical procedure can be understood as a very significant and important sequence.

The final and most aggregated level of interaction is the relationship level. Several sequences form a relationship. Sequences can follow each other directly, can overlap, or can follow after longer or shorter intervals (Holmlund, 1997). A surgical procedure can have a lasting effect on the development of a relationship. However, there can be several of these processes (for example, repeated surgery) depending on the character of the disease. The nature of the overall relationship simultaneously affects the perceptions of the actions, episodes, and sequences taking place within the relationship. A satisfied patient can evolve into a true advocate for the company and give a powerful word-of-mouth endorsement for the private hospital (MacStravic, 1985; Winsted, 2000). Some medical services can involve a series of dyadic relationships, whereas others are more complex and involve a number of different actors.

THE PRODUCTION AND CONSUMPTION OF SURGICAL SERVICES

The need for a surgical service starts with the observation of a disorder and, if successful, ends with a healed wound and no further complications. The process can continue for several months. It is evident that in surgical services the patient is an essential part of the production and consumption process, and that this necessitates a close relationship between the service provider and the patient. The doctor has significant discretion in meeting customer needs. However, a focus on the technical core service alone cannot be considered sufficient (Gummesson, 2000).

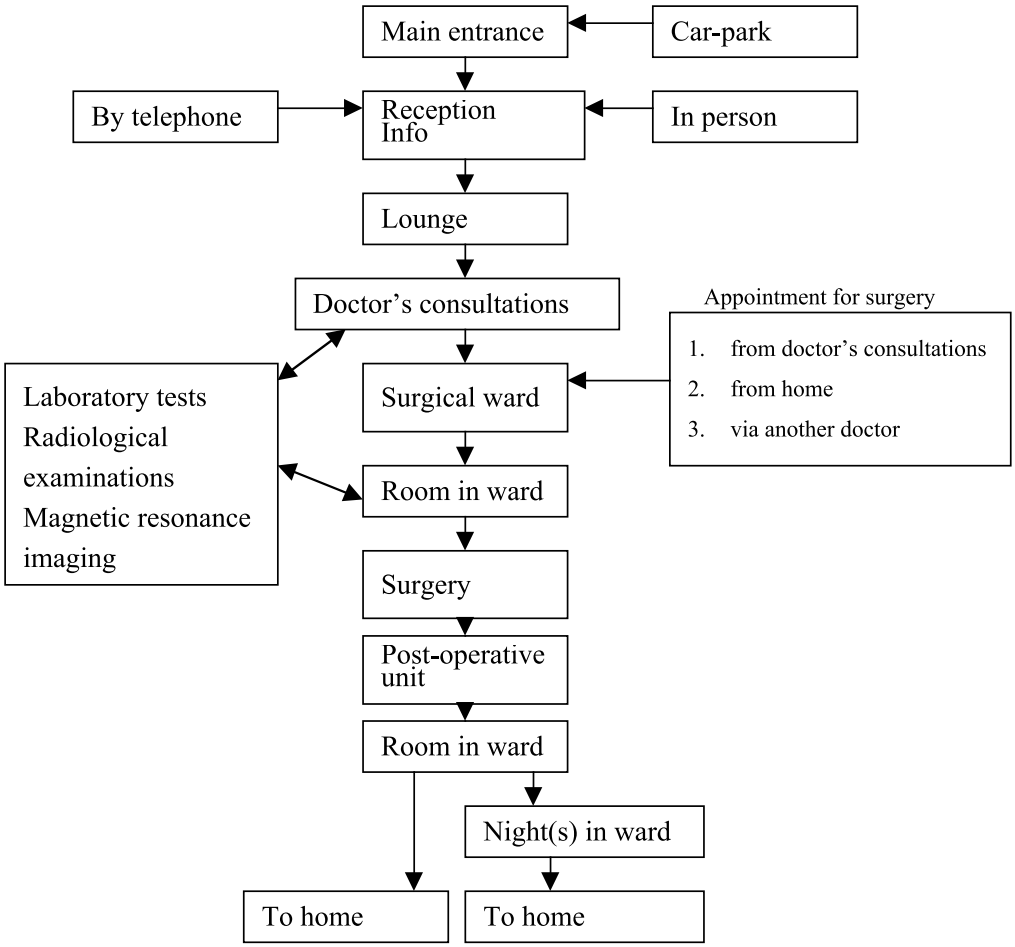
In surgical services, patients often want to choose the doctor who operates on them. This is one of the major reasons for surgical patients choosing private hospitals. In an earlier study (MacStravic, 1994) concerning the customer's selection of the medical service provider for surgical operations, the doctor's reputation and skills were the most important elements in the decision-making. In such cases, it appears that doctors in a way personify this distinctive service. It is evident that, in private surgical services, customer satisfaction is a substantial factor in building strong customer equity, and that word-of-mouth recommendations and referrals are crucial (MacStravic, 1985; Winsted, 2000).

In surgical services, the patient is the direct recipient of a service and the physical presence of a patient is a pre-requisite for a series of quite tangible operations to be carried out (Lovelock and Wright, 2002; MacStravic, 1988). Surgical services are delivered by highly educated people, and are usually closely linked to the development of scientific knowledge within the relevant area of professional expertise. These services involve a high degree of customisation and a high degree of discretionary effort and personal judgment on the part of the experts delivering the service (Alvesson, 1995; Lowendahl, 2000).

Surgery is a broadly defined discipline in which different fields of medicine are applied in various complex situations and processes. Typical surgical procedures in a private hospital might involve orthopaedic surgery, eye surgery, plastic surgery, gynaecology, urology, and dental surgery. Despite the differences in types of surgical procedures, the surgical-service process follows basically the same formula, and involves a highly complex chain of interlinked and embedded services. The surgical-service process is essential to the overall surgical service and, to some extent, standardises it. Yet, in the end, it must always be, at least in part, 'custom-made'–because no human is exactly like another. Figure 2 illustrates the surgical-service process in a private hospital.

Patients usually follow a standard procedure when coming to the hospital premises. After the decision to conduct a surgical procedure has been made, there are basically three different options for making an appointment for the procedure–(i) directly from the doctor's own office after the consultations; (ii) from home, based on telephone discussions; or (iii) through another

Figure 2. The surgical-service process in a private hospital



doctor's advice. When arriving for the operation, the patient reports personally at reception, and is directed to the appropriate ward. In the ward, the patient has an appointment with the personnel, and receives information in preparation for the operation. The actual procedure in the operating room is then conducted, after which the patient is moved to the immediate post-operative unit. Soon thereafter the patient is moved back to the ward, where the patient (depending on the operation) remains under surveillance and care for a number of hours or days. Before leaving, an examination is made, and additional information is provided. Depending on the case, further post-operative checks are conducted in the days or weeks following the operation.

The patient's opinion of a service is influenced by both the service-production process and the service-consumption process. Lehtinen (1983) has proposed that the service-production process consists of customer, contact, and physical resources. The surgical service-production process includes the patient, the surgical-production facilities, human and non-human production resources, and the servicescape. It is evident that hospitals, with their many floors, rooms, and sophisticated equipment, communicate heavily through physical evidence and physical surroundings. Bitner (1992) has labelled man-made physical surroundings as 'servicescapes'. Elements of the servicescape that affect patients include both exterior attributes (such as signs and parking) and interior attributes (such as design, equipment, and décor) (Zeithaml and Bitner, 2002). In hospitals, servicescapes are elaborate environment–often very complicated, with many elements and technical equipment. A patient's hospital room can be designed to enhance patient comfort and satisfaction while simultaneously facilitating employee productivity (Bitner, 1992), and although improvements in hospital servicescapes have been made, medical services are, by their very nature, often cold and frightening (Gummesson, 2000).

The surgical service-consumption process includes the behaviour of nurses and doctors, the manner in which the production facilities are used, and the way in which physical resources, technology and systems support the consumption of the surgical service. The interactive marketing function recognises that every human and non-human component in producing a surgical service, every production resource used, and every stage in the service consumption and production, should be considered as more than operations or human-resource problems (Grönroos, 2000).

Lehtinen (1983) has divided the service process into three phases–joining, intensive consumption, and detachment. In medical services, the joining phase occurs when the patient joins in the service process to consume a core surgical service. The core surgical service is produced in the intensive consumption phase. In surgical services the production and intensive consumption of services are simultaneous processes, with interactions occurring between the patient and the tangible and intangible production resources of the medical service provider (MacStravic, 1988). The intensive consumption phase is followed by the detachment phase, in which the patient leaves the service process.

Surgical services are deeply affected by the impact of auxiliary services in the form of facilitating and supporting services. Facilitating services are used to facilitate the consumption or use of the core service. If facilitating services are lacking, the core service cannot be consumed. Supporting services are auxiliary services that are used to increase the value of the service and/or to differentiate the service from those of competitors (Grönroos, 2000). Most of the time the patient is interacting with parts of the service chain other than the doctor. These are the moments in which the functional abilities of hospital personnel as well as the technical

equipment of the service provider can have a major role. A limited focus on the core service is not sufficient. The actual surgical procedure performed by a surgeon is only one part of a successful medical service (Gummesson, 2000).

In surgical services, the patients also interact with nurses and with doctors other than the surgeon. In some cases, the role of radiological examination, magnetic resonance imaging, and other investigations is emphasised. The anaesthesiologist might be more visible before, during, and after the operation. The roles of all these experts influence the overall service experience. Consequently, it is evident that not all medical encounters are simple dyadic relationships (Winsted, 2000).

QUALITY EVALUATION IN THE SURGICAL-SERVICE PROCESS

The evaluation of quality in the surgical-service process is largely based on the attributes of experience and credence. Experience attributes can be evaluated only during or after the consumption of service. Credence attributes are difficult to evaluate even after the consumption of a service (Brown 2001; Lovelock and Wright, 2002).

The relationship between a doctor and a patient entails high involvement by the patient and involves complex communication patterns. According to Gummesson (1991) the traditional doctor-patient relationship is an example of the unfortunate consequences of service providers' distorted views of quality. Doctors can consider themselves experts and their patients ignorant. Actually, doctors' knowledge is quite limited, even if they know facts about disease that patients do not. Patients have knowledge about themselves and how they feel–knowledge that doctors can have great difficulty in discovering. It might be more realistic to accept that doctors treat patients from both a medical, objective point of view and from a subjective view that is influenced by experience, intuition, empathy, personal chemistry, and mood. Both patients and doctors behave objectively and subjectively, and both are ignorant and knowledgeable to some extent. A key concept is that of interactive production in which quality contributions come from the combined efforts of patient and service provider (Gummesson, 1991).

Researchers from the Nordic school of services have developed various conceptualisations and models for evaluating service quality and for explaining the complex nature of service quality in the context of customer relationships. These models have been mostly static rather than dynamic–especially in the early stages of service research (Grönroos, 1993). However, over time research into service quality has continued, and has gained depth in the dynamic dimension (Roos and Grönroos, 2000). For example, Liljander and Strandvik (1995) have developed measurement of service quality by introducing their dynamic relationship-quality mod-

el. In the context of business relationships, Halinen (1994) and Holmlund (1997) have included a temporal dimension in their studies on agency-client dynamics in professional services and on perceived quality in business relationships.

Grönroos (1982) has suggested in his early static model of service quality that service quality involves technical and functional dimensions that reflect both what is delivered and how it is delivered. Technical quality refers to what the customer is actually receiving from the service provider, and functional quality refers to how the service is delivered (Grönroos, 1993). What customers receive in their interactions with a firm is clearly important to them and their quality evaluation. However, as there are several interactions between the service provider and the customer, the technical quality dimension will not count as the total quality as perceived by the customer. The customer is also influenced by how he or she receives the service and how he or she experiences the simultaneous production and consumption process. Ultimately, final service quality is perceived according to the customer's comparison of his or her expectations and experiences (Grönroos, 1982; 1993). More recently, Grönroos (2000) has sharpened these two fundamental service-quality dimensions and has labelled them as the technical quality of the outcome and the functional quality of the process.

Lehtinen and Lehtinen (1991) have proposed both three-dimensional and two-dimensional approaches to capture service quality in the context of customer relationships. The three-dimensional approach consists of interactive, physical, and institutional quality. The two-dimensional approach is comprised of output and process quality dimensions, including consideration of the dimension of time. The output dimension refers to the technical outcome of service process, whereas the process dimension refers to service consumption and production process–that is, how the service is delivered. Output quality refers to the customer's evaluation of the result of the service-production process. Process quality is based on the customer's personal and subjective judgment (Lehtinen and Lehtinen, 1991; Lehtinen, Ojasalo and Ojasalo, 1996). The overall experience of service quality is formed by the joint and interrelated effects of the output and process quality dimensions (Lehtinen and Lehtinen, 1991).

This two-dimensional framework for general service quality is quite appropriate for evaluating surgical-service quality, because it is based on the natural major interacting parts of the service consumption and production processes–the process itself and its output. The two-dimensional approach to service quality can be considered as a higher level or more abstract approach to service quality than the three-dimensional approach. A further advantage of this two-dimensional approach to service quality is that it also includes the time dimension (Lehtinen and Lehtinen, 1991). This is important because surgical services are processes, and are thus dynamic phenomena. The temporal dimension is vitally important to observe in such a

study, because the evaluation and outcome of the surgical-service process is often a continuous process rather that an instant time activity.

DATA COLLECTION AND ANALYSIS

The population of this study consisted of surgical patients in a private hospital. The non-probability sample was comprised of all surgical patients at one private hospital during a four-month period. Most patients had undergone an orthopaedic surgical procedure. This must be taken into account in interpreting the results.

Empirical data were collected in the form of a mail survey of the surgical patients of one large private hospital in Finland. It was meaningful to utilise a quantitative attribute-based measurement approach to give surgical patients the possibility of considering their answers in peace and in full anonymity after the surgical procedure. In total, 240 questionnaires were delivered retrospectively to the surgical patients. The final number of returned 6-page questionnaires was 198. The response rate was 83 per cent, and no reminders were needed. The original items in the questionnaire were grouped into the joining, intensive consumption, and detachment phases of the surgical-service process of a private hospital. (Orava and Tuominen, 2000).

The quantitative data consisted of 93 variables, which were statistically analysed using the SPSS package. After introductory analysis with frequencies, means and percentages, the empirical material was reduced by means of factor analysis. The aim was to decrease the number of individual 5-point Likert-scale variables, because these alone did not provide a comprehensive, holistic picture of the private hospital's service-quality dimensions.

EMPIRICAL QUALITY DIMENSIONS IN THE SURGICAL-SERVICE PROCESS

In surgical services, the output quality can be referred to as the 'curing' whereas the process quality can be referred as to the 'caring'. Consequently, the two-dimensional approach is appropriate for the surgical-service quality, because the basic needs of the medical health-care consumer are often twofold–medical and psychosocial. Medical needs relate to the content of the medical expertise and the skills of the provider that are directly needed for the treatment of the patient's illness. Psychosocial needs often relate to the delivery of the medical expertise and are therefore indirectly related to the treatment of the patient's illness (John, 1991). It is evident, however, that there is a tight interdependence and interplay between curing and caring, because curing is very much a mental as well as psychosocial state. Therefore, the distinction

between curing and caring is by no means absolute. The surgical procedure can be seen as an overriding category in which both medical techniques and relational abilities are needed.

Variables were divided between the 'output' and 'process' dimensions of service quality (for the two dimensions, see Lehtinen and Lehtinen, 1991), and the factors were derived in these output and process dimensions. In this study, the output quality with the curing element refers to the medical needs of the patient, whereas the process quality with the caring element refers to the psychosocial needs of the patient and the counselling procedure given by the surgical-service provider. In other words, medical needs should dictate what (the content of delivery) is being delivered to the patient, whereas psychosocial needs should dictate how (the mode of delivery) the surgical service is delivered to the patients.

First, a correlation matrix of the 5-point Likert-scale variables included in the study was formed. According to the results, factor analysis was then employed to reduce the dimensionality of the original criteria to a smaller number of factors by forming a linear combination of the original data while retaining as much variance as possible (Malhotra and Birks, 2000). The Kaiser-Meyer-Olkin measure was 0.70 and Bartlett's test of spherity was 487 (significance 0.00). Varimax rotation was employed. Five factors were isolated (based on eigenvalues over 1) and the percentage of variance explained was 61 per cent. Table 1 presents the first set of five quality factors.

The first four factors in Table 1 are labelled as 'Supporting services', 'Professional expertise', 'Physical evidence and servicescape', and 'Pleasantness'. Finally, a factor entitled 'Surgical procedure' is presented–a single variable, which is correlated negatively with the variable recorded as 'painlessness of operation'. Taken together, these structures form a logical service chain. A successful surgical procedure, combined with elements of professional expertise (of nurses and doctors) and pleasantness (food, and so on), together with well-functioning supporting services (magazines, books, sanitary facilities, and so on), and physical features of the hospital (equipment, signs, information, and so on) describe rather well the varied nature of the concept of quality in the surgical-service process.

The process dimension of service quality was also placed under closer scrutiny, and the factor analysis was conducted to reduce the dimensionality of the original criteria to a smaller number of factors by forming a linear combination of the original data while retaining as much variance as possible (Malhotra and Birks, 2000). Seven factors had eigenvalues over one, but a solution comprised of four factors was identified as the best and most explicit for the purposes of interpretation. In this case, we did not use the cut-off eigenvalue of 1.0 because extra factors had severely diffused factor loadings and they increased only slightly the percentage of variance explained. The percentage of the variance explained was 48 per cent, which must be taken into account in interpretation. Table 2 depicts the second set of four quality factors.

Table 1. The first set of quality factors

Variable	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*	*h2*
Signs & information	0.17	0.06	0.79	-0.06	-0.03	0.66
Entrance	0.31	0.07	0.71	0.01	0.02	0.60
Competence in check-in	0.00	0.71	0.21	0.27	0.15	0.64
Competence in the ward	0.20	0.60	-0.55	0.18	0.43	0.62
TVs/VCRs in the ward	0.23	-0.08	0.35	0.63	-0.10	0.60
Newspapers in the ward	0.50	0.15	0.20	0.13	0.20	0.37
Washing facilities "	0.86	0.10	0.17	0.10	0.01	0.79
Sanitary facilities "	0.86	0.09	0.04	0.09	0.09	0.77
Food served in the ward	0.07	0.13	-0.15	0.77	0.08	0.65
Number of personnel	0.24	0.35	0.07	0.41	0.40	0.52
Painlessness of operation	0.11	0.62	-0.12	0.11	-0.42	0.60
Servicescape	0.27	0.19	0.45	0.22	0.11	0.37
Surgical procedure	0.13	0.03	0.24	0.01	0.82	0.69
Invoicing/payment	0.12	0.67	0.20	-0.23	0.02	0.55
Variance explained (%)	25.00	11.00	9.00	8.00	8.00	
Total variance explained						61%

The four factors in Table 2 are labelled 'Access and front-line personnel', 'Ward personnel', 'Room in the ward' and 'Surgical team'. The first factor is comprised of the elements of parking, reservation, telephone services and receptionists (such as location and access, friendliness, service inclination, and appearance). The second factor is associated with the abilities of the ward personnel (friendliness, openness, trustworthiness, and so on) and is supplemented by the variable 'Obtaining information', which is also one of the duties of the ward personnel. The third factor is clearly associated with the time spent in the room in the ward–that is, service that makes a patient comfortable in a smoothly functioning and pleasant room. The fourth factor is comprised of the abilities of the staff in the operating room–that is, 'how doctors and nurses performed' (from the patient's point-of-view) during the surgical procedure. Verbal communication or the mood of the doctor can be very important to a patient's impression of the operation, as the majority of the surgical operations are done in this private hospital while patients are not under general anaesthesia, and are thus at least partly conscious and able to observe the progress of the operation.

Table 2. The second set of quality factors

Variable	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*h2*
Location & easy to reach	0.43	-0.04	0.08	0.02	0.20
Parking functioning	0.46	0.06	0.15	-0.04	0.24
Opening hours	0.51	0.12	0.21	0.07	0.32
Waiting room	0.53	0.11	0.28	0.08	0.38
Communication on phone	0.72	-0.11	-0.15	0.17	0.59
Friendliness in reservation	0.71	0.00	-0.19	0.27	0.62
Friendliness at check-in	0.71	0.10	-0.01	0.08	0.52
Reservation procedure	0.54	0.13	0.04	-0.14	0.33
Service inclination	0.61	0.32	0.02	-0.06	0.48
Appearance	0.54	0.10	0.32	0.12	0.42
Information prior to surgery	0.02	0.65	0.12	0.13	0.46
Trustworthiness & reliability	0.14	0.77	0.13	0.11	0.64
Openness of information	0.12	0.79	0.17	0.10	0.67
Friendliness in the ward	0.19	0.67	0.08	0.21	0.54
Sympathy & understanding	0.11	0.64	0.17	0.21	0.50
Room's cosiness	0.15	-0.02	0.80	0.25	0.73
Room's functionality	0.06	0.03	0.76	0.29	0.66
Anaesthetic doctor	-0.04	0.14	0.02	0.74	0.57
Anaesthetic nurse	0.21	0.18	0.00	0.71	0.59
Awakening room	0.08	0.24	0.20	0.48	0.33
Information on departure	-0.02	0.55	-0.07	0.05	0.31
Variance explained (%)	23.00	11.00	8.00	7.00	
Total variance explained					48%

Our results indicate that the core surgical procedure must be supplemented by several quality elements in both output and process throughout the whole surgical-service process. We can conclude that there is deep interaction between curing and caring. Success of the surgical procedure is a precondition for excellent surgical service. Conversely, failure in the surgical procedure produces disappointment in the quality of the overall surgical-service proc-

ess. However, it should be noted that surgical procedures can be performed in many ways. There are expensive and cheap operations, operations can be based on different schools of procedure, and knowledge and skills of a specific surgeon and his or her team vary. Consequently, the output and process dimensions are always deeply interrelated. There is certainly interplay between the more technical procedures of surgery and the ways in which the hospital staff and the servicescape relate to the patient. Despite success, the surgical procedure alone might not produce an overwhelmingly good service experience.

In particular, several studies of doctor-patient relationships and patient evaluations of medical services have endorsed the importance of patient-staff interaction and the long-term nature of doctor-patient relationships (Bowers, Swan and Koehler, 1994; Headley and Miller, 1994). In these situations, the interactive element of service provision has a vital role in perceptions of the overall quality of service. Andaleeb (1998) found that three of the five factors leading to customer satisfaction with hospitals had to do with patient-staff interaction. These factors were communication with patients, competence of the staff and staff demeanour. Similarly, Zifko-Baliga and Krampf (1997) found that three of five factors affecting perceptions of the quality of service in hospitals were related to interaction with doctors or other staff. For perceived quality of physicians, these factors were professional expertise, validation of patient beliefs, interactive communication, image and antithetical performance. Finally, the authors concluded that negative emotional evaluations could undermine even the best clinical performance.

CONCLUSIONS AND MANAGERIAL IMPLICATIONS

Our findings indicate that there is a close interdependence between the quality dimensions of curing and caring. Consequently, the distinction between curing and caring is by no means absolute. A surgical procedure can be seen as an overriding category in which both medical techniques and relational abilities are needed. To ensure an excellent surgical service experience, all interrelated quality elements must form a well-functioning and coordinated service chain.

The results of this study strongly support earlier conclusions that have emphasised the importance of patient-staff interaction (Bowers, Swan and Koehler, 1994; Gummesson, 2000; Headley and Miller, 1994; MacStravic, 1988; Taylor and Cronin, 1994). The interactive element of service provision has a vital role in the perception of the overall quality of service. A satisfied patient can grow into a true promoter and give a powerful word-of-mouth endorsement for a private hospital.

It is evident that success of the surgical procedure is a precondition for excellent surgical service. Despite success, the surgical procedure alone might not produce an overwhelmingly

good service experience. A focus on the core surgical procedure alone is not sufficient, because the technical surgical procedure is only a part of the overall surgical service offering. The process-quality dimensions should not be underestimated. They complement and integrate with the output-quality dimensions of a successful surgical service.

The management of medical services must ordinarily be built upon relationships, rather than upon separate transactions. Through a more comprehensive employment of the relationship marketing concept in medical services, the management of single interaction processes can be extended to another level–that of managing the relationships. This shifts the focus from single and perhaps isolated medical encounters to the more comprehensive relationship between patient and doctor. The manifold quality dimensions of the surgical-service process involve a successful surgical procedure combined with deep patient-staff interaction, elements of professional expertise and pleasantness, and versatile supporting services and physical features.

The need for relationship marketing is evident in private hospitals because our findings heavily endorse the importance of patient-staff interactions, and the importance of trusting doctor-patient relationships. To understand more fully the nature of medical encounters, future research is needed in the form of qualitative in-depth interviews about the main events in an excellent surgical service experience. ■

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