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Stability of Patient Perception of Quality of Hospital Care over Time

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The purposes of this study were to determine patient attitudes toward the quality of Hospital care, and to assess whether those attitudes remained stable over time. Theoretical constructs to measure patient satisfaction with hospital care were tested. From among the family of models available, the multiattribute utility model (MAU) was chosen. This approach employs a structured list of attributes to which patients respond by indicating relative importance (weight) and utility of each attribute. Patients diagnosed with myocardial infarction were selected from nine hospitals. Through self-administered questionnaires, using tradition Likert-type scales, data were collected from 164 patients at two points in time: one month, and five months following discharge. Analyses were conducted to determine how stable satisfaction was over time. Results from univariate and multivariate analysis showed that, at least for myocardial infarction, patient satisfaction with care is not necessarily stable over time. Studies of patient attitudes toward quality of care depend upon the time following discharge that those attitudes are measured.

1. Introduction

A number of studies have investigated the incorporation of patient values into medical decision making [1-6]. Little research has been done, however, regarding the stability of values and preferences over time. Christensen-Szalanski [7] demonstrated that a sample of values may not be representative of long-term preferences. The study involved attitudes of pregnant women toward pain and anesthesia one month pre- and one month post-partum. Ware, Snyder, Wright, and Davies [8] developed a survey instrument designed for use in broader studies. The questionnaire assessed attitudes toward skill of providers, and availability, timeliness, and cost of care. The survey was administered twice, approximately two years apart, and demonstrated that satisfaction with care was, indeed, relatively stable over time. This broad population study may not, however, hold when applied to a specific cohort of patients with a life threatening illness. Nelson *et al.* [9] have urged further research.

Quality of care is a term that is rarely defined by those using it. Yet everyone claims to understand what it means [10]. Donabedian defined quality care as "that kind of care which is expected to maximize an inclusive measure of patient welfare, after one has taken account of the balance of expected gains or losses that attend the process of care in all its parts" [11]. He argued that to conduct any measurement without a definition of what quality of care means is to "court disaster."

Researchers in the field agree that to develop a usable definition of quality of care, it is necessary to enumerate the elements that belong to it [8,11-15]. The elements which are important to patients and determine patient satisfaction include: 1) the technical component ("curing" function), 2) interpersonal aspects ("caring" function), 3) availability, 4) accessibility, and 5) continuity.

Studies of quality of care are of very real practical importance to clinical practice. Patient compliance with treatment has been shown to depend strongly on how satisfied the patient is with the quality of the physician's

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work, and how well the hospital meets the patient's needs and wants [9]. The higher the perceived quality, the higher the probability that the patient will return, and/or recommend the same hospital to others. This underscores the importance of when, following an episode of care, patients' attitudes are measured.

From among the family of models in decision science that could be used to evaluate quality of care and patient satisfaction, the investigators applied the multiattribute utility (MAU) model [16-18]. This is "a widely accepted and frequently applied tool for assisting decision makers in making choices among complex alternatives that vary on multiple conflicting objectives" [19]. The evaluation task is broken down into attributes. Each is evaluated; tradeoffs among attributes are quantified as importance weights, or other scaling factors. The model is widely used in the health science literature to capture patient judgments [20-22], to measure the value of life [23], or to evaluate treatment [24]. Attribute values may be summed to obtain final scores [25,26]. Utility indices have been shown to be highly reliable and valid for evaluating severity of illness [27]. The process concords with psychological theories [28,29].

The first step in the process is to solicit the set of attributes, and to structure the problem as a value tree. The next step is to ascertain the value of each attribute. Finally, the values are aggregated across attributes in proportion to assigned weights, or utilities to obtain an overall utility. The process is illustrated in Figure 1.



Figure 1. Framework to Measure Patient Satisfaction

The attributes for this study were drawn from the Patient Judgments of Hospital Quality (PJHQ) questionnaire designed by Meterko, Nelson, and Rubin [30]. Six quality scales correspond, roughly, to the sequence of events that patients experience as they enter the hospital, receive care, and are discharged. The authors of the instrument assume that, when patients rate hospital care, they distinguish among types of services. Values for each attribute are solicited on a five-point Likert-type scale. The internal consistency and reliability (Cronbach's alpha) for each measure is good to excellent. All of them exceeded the minimum 0.70 criterion recommended by Nunnally [31] for hypothesized constructs. The six attributes are listed in Table 1.

Table 1

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Table 1 Attributes of quality care

Admitting	Efficiency of the admitting procedure. Courtesy of admitting staff to individual needs, comfort, and feelings.
Nursing Care	Nurses' caring and curing. Courtesy and respect, friendliness and kindness. Skill of nursing.
Medical Care	Doctors' caring and curing. Courtesy and respect, friendliness and kindness. Ability to diagnose problems, thoroughness of examinations, skill in treatment, scientific knowledge.
Information	Information given by nurses about daily procedures, and by doctors about illness and treatment.
Hospital Rooms	Amount of peace, quiet, and comfort.
Discharge	Discharge procedure efficiency, and coordination of care after discharge.

2. Methods

Nine community hospitals located in four states in the United States participated in the study: Florida (three hospitals), Georgia (three hospitals), South Carolina (one hospital), and Tennessee (two hospitals). All of these hospitals were managed by a national proprietary hospital chain, and constituted a homogeneous sample.

Patients discharged alive from these nine hospitals with a primary discharge diagnosis of myocardial infarction were administered a questionnaire at 1-2 months, and again at 4-5 months post-discharge. (Ratings immediately post-discharge are said to reflect patient gratitude, and were, therefore, not used in this study.)

The diagnosis of myocardial infarction was selected for several reasons. First of all, there exist previous studies which indicate a wide variation in satisfaction with care. Secondly, the process of care related to myocardial infarction is quite standard [32]. Thirdly, information provided to patients with myocardial infarction is relatively more important than it is in other illnesses.

In addition to the questionnaire, demographic data and disease specific symptoms were gathered from hospital medical records. Completion of the questionnaire took approximately 20 minutes. Patients who had not returned completed questionnaires were sent a postcard two weeks after the original mailing. Remaining non-respondents were then contacted by phone, and interviewed briefly.

Eligibility criteria were discharge with one or more of the diagnostic codes ICD-9-CM 410.X or 411.X after a hospital stay of at least five days. From that population, persons with any diagnosis of mental disorder were excluded, as were patients discharged against medical advice.

A total of 164 patients were identified. Of these, 111 completed the first questionnaire; 21 were interviewed by telephone, for a response rate of 80.5 percent. Of these 132, 80 completed the second questionnaire; 32 were interviewed by telephone. The net response rate following the two mailings was 68.3 percent. It was not possible to ascertain whether patients who did not respond were still living.

The majority of the 132 respondents to the first questionnaire were men; mean age was 62.2 years. Study patients stayed an average of 9.5 days in the hospital; 45 percent of them had previously been hospitalized for myocardial infarction. Forty-eight percent of the patients were Medicare recipients; 27 percent and 14 percent, respectively, belonged to major commercial insurers and to Blue Cross. These background variables were tested for differences between respondents and non-respondents. None were found.

3. Results and Discussion

The first observation was the percent of patients who moved from one satisfaction score to another from the first to the second measurement. The majority of patient attitudes toward the six attributes were stable-54.4 percent to 81.4 percent, with an average of 66.0 percent. Nevertheless, there were a substantial number of patients whose attitudes were unstable, and who were generally less satisfied five months after discharge than they were one month following discharge. In particular, attitudes toward efficiency of both the admission and discharge procedures significantly deteriorated. Except for the attribute related to the skill and information provided by physicians, the other attributes deteriorated as well, but not significantly.

In order to understand better patients' perceptions of the relative importance of the dimensions of care, rank orders of attributes were tabulated. The Wilcoxon test revealed that none of the distributions differed

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