1. Introduction: Assessing Racial and Ethnic Differences in Patient Evaluations of Care

Background

Improving the quality of health care and reducing racial/ethnic disparities in health are two principal objectives of current national health policy. Mounting evidence suggests that inequalities in the quality of care received by subgroups of the population contribute to the disparities in health we observe (Fiscella, Franks, Gold, & Clancy, 2000). To improve the quality of health care for racial and ethnic minorities and thereby reduce disparities in health, reliable and valid measures of health care are needed, particularly measures that are applicable across many different racial/ethnic and linguistic groups.

Largely a result of the consumer movement, patient evaluations of health care have emerged as one of the most important commonly collected indicators of quality of care. Patient satisfaction – one type of patient evaluation – is widely acknowledged by investigators and policy makers as an essential outcome of health care, distinct from the efficacy of care (Cleary & McNeil, 1988). Further, patient evaluations of health care have been linked to several important health-related behaviors including the initiation of malpractice litigation (Penchansky & Macnee, 1994; Vaccarino, 1977), disenrollment from health plans and providers (Allen & Rogers, 1997; Newcomer, Preston, & Harrington, 1996; Schlesinger, Druss, & Thomas, 1999), and adherence to medical regimens, including keeping follow-up appointments with health care providers (Hall, Milburn, Roter, & Daltroy, 1998).
Thus, patient satisfaction has been implicated as both an antecedent and consequence of good health (Marshall, Hays, & Mazel, 1996; Hall Judith A, Roter Debra L, & Milburn Michael A, 1999).

In response to the growing demand for a state of the art survey instruments to assess patient evaluations of health care, the Agency of Healthcare Research and Quality (AHRQ) funded a national effort called the Consumer Assessments of Health Plans Study (CAHPS®) (Crofton, Lubalin, & Darby, 1999). The goal of CAHPS® was to develop reliable and valid measures of patient evaluations of health care that are applicable to patients throughout the life cycle and across a variety of settings. The primary intended use of the CAHPS® surveys was to inform consumers about the experiences of other consumers with the health plans available to them. In response to these objectives, the CAHPS® research consortium (Harvard Medical School, RAND, Research Triangle Institute, and Westat) developed survey instruments applicable to adults and children, in managed care and fee-for-service settings. Because the CAHPS® consortium recognized the growing diversity of the US population, surveys were translated into Spanish (Weidmer, Brown, & Garcia, 1999). In addition to the surveys, scoring algorithms and reporting formats were developed.

Currently, many large providers and purchasers of care routinely assess health care using the CAHPS® survey instruments. Medicare and the Office of Personnel Management survey their beneficiaries yearly (Schnaier et al., 1999). Many state Medicaid programs including California, Texas and Washington State have adopted the CAHPS® surveys as part of their routine quality assurance and quality improvement
strategy (Brown, Nederend, Hays, Short, & Farley, 1999). The National Council on Quality Assurance, the largest accrediting body of Health Maintenance Organizations, requires health plans to administer the CAHPS® surveys for accreditation (National Committee for Quality Assurance, 2000).

Patient evaluations of health care can yield important insights about how well different subgroups within populations are being served by the health care system. Patient evaluations have been successfully used to assess the quality of medical care services among Hispanic, Asian, American Indian, and African American patients (Morales, Cunningham, Brown, Liu, & Hays, 1999; Murray-Garcia, Selby, Schmittdiel, Grumbach, & Quesenberry, 2000; Meredith & Siu, 1995; Taira et al., 1997; Morales, Elliott, Weech-Maldonado, Spritzer, & Hays).

A strength of patient evaluations is that they can implicitly and explicitly assess the cultural and linguistic appropriateness of health services. They can implicitly assess the cultural and linguistic appropriateness of care because they capture experiences with care from the patient’s perspective, thus they incorporate the cultural lens through which patients experience health care. Patient evaluations can explicitly measure cultural and linguistic appropriateness of care with the inclusion of survey questions asking about domains of quality of care related to cultural and linguistic appropriateness (i.e., interpreter services, non-English patient materials). Thus, patient evaluations may be one of the best tools available to policy makers for assessing and monitoring racial/ethnic disparities in quality of care.
Collecting reliable and valid consumer data in culturally and socioeconomically diverse populations is complex. However, without it, accurate assessments and monitoring of racial/ethnic disparities in care is not possible. Researchers concerned about the quality of survey data have raised methodological concerns about the use of consumer surveys in culturally and linguistically diverse patient populations. In addition to concerns about providing adequate translations into multiple languages (Herdman, Fox-Rushby, & Badia, 1997; Badia, Garcia-Losa, & Dal-Re, 1997; Bullinger et al., 1998), there is concern about cultural differences in the interpretation of questions (Angel & Thoits, 1987), (Liang, Van Tran, Krause, & Markides, 1989; Weissman, Sholomskas, Pottenger, Prusoff, & Locke, 1977) response styles (Hayes & Baker, 1998), and the literacy requirements to comprehend survey questions (Brown et al., 1999). Although methods for empirically testing surveys for measurement equivalence or survey scales across groups are available (Smith Larissa L & Reise Steven P, 1998; Widaman Keith F & Reise Steven P, 1997; Reise Steven P, Widaman Keith F, & Pugh Robin H, 1993), these methods have been rarely applied to patient evaluations of health services.

In this thesis, two large data sources are analyzed for racial/ethnic differences in patient evaluations of health care. The data sources are the National CAHPS® Benchmarking Database (NCBD) 1.0 and the United Medical Group Association (UMGA) study database (Hays, Brown, Spritzer, Dixon, & Brook, 1998). The NCBD 1.0 is an aggregation of CAHPS 1.0 survey results from across the United States. The NCBD project is administered by QMAS with finding from the AHRQ and the Health Care Financing Administration (HCFA). Both adult and child
survey results from Medicaid and commercial settings are included in NCBD 1.0. The UMGA database contains survey results from a probability sample of patients receiving care from 63 physician groups located on the west coast of the United States. The UMGA database only contains results from adult survey respondents. A particular strength of this database for conducting cross-cultural research is that it includes over 150 surveys completed in Spanish.

This thesis also presents methods for producing reliable and valid survey instruments to assess patient evaluations of care in multicultural settings. A general framework for producing culturally appropriate survey instruments is developed and psychometric analyses are conducted to evaluate the equivalence of scales contained in the CAHPS® and UMGA surveys between racial/ethnic groups. The specific psychometric analyses conducted include an evaluation of the measurement equivalence of the satisfaction ratings from the UMGA database between whites and Hispanics and an evaluation of the factor structure of the CAHPS® 1.0 measures among whites and Hispanics using the NCBD 1.0 database.

In following sections of this chapter, a detailed outline of this thesis is presented and theoretical foundation of patient satisfaction is briefly reviewed. Finally, the implications of patient satisfaction theory for the application of patient evaluation research in multicultural setting are discussed.

**Thesis Outline**
Chapter 2 presents a general framework for producing culturally appropriate survey instruments. Chapter 3 presents an analysis of the readability of the CAHPS® 2.0 survey instruments. Chapters 4 to 6 present three separate studies of racial/ethnic differences in patient evaluations of health care. Chapter 4 is an analysis of the UMGA data focusing on differences in patient evaluations of physician communication among English speaking non-Hispanic whites, English speaking Hispanics, and Spanish speaking Hispanics. Chapter 5 is an analysis of the NCBD 1.0 data focusing on differences in adult patient evaluations among Hispanics, Whites, Blacks, Asians, and American Indians. Chapter 6 is also an analysis of the NCBD 1.0 database, however, it focuses on differences in proxy evaluations of care delivered to Hispanic, white, black, Asian, and American Indian children. Chapter 7 and 8 examine the psychometric properties of patient evaluations of care included in the UMGA and CAHPS® databases. Chapter 7 uses item response theory procedures to test the metric equivalence of UMGA satisfaction rating measures among whites and Hispanics. Chapter 8 examines the factor structure of the CAHPS® 1.0 measures among whites and Hispanics. Chapter 9 summarizes the findings from the investigations conducted in the thesis, drawing out the policy implications of these results.

**Conceptualizing Patient Satisfaction**

Most research on patient evaluations has focused on patient satisfaction and correlates of patient satisfaction. Understanding the theoretical conceptualization of patient satisfaction is important for identifying methodological issues that might arise when patient
satisfaction measures and other patient evaluations are used in multicultural settings. Thus, we begin by reviewing sociological, psychological, and health services research theories pertaining to patient satisfaction.

Several recent reviews have summarized the literature on patient satisfaction. Sherbourne and Hays (1995), Pasco (1983) and van Campen (1995) reviewed patient satisfaction with primary care services, Lebow (1983) and El-Guebaly (1983) looked at satisfaction with mental health services, and Lochman (1983) described satisfaction with medical consultants (van Campen, Sixma, Friele, Kerssens, & Peters, 1995; Pascoe, 1983; Lebow, 1983; el-Guebaly, Toews, Leckie, & Harper, 1983; Lochman, 1983; Sherbourne, Hays, & Burton, 1995). Without exception, these reviews were critical of the existing research on patient satisfaction. Regarding patient satisfaction with ambulatory services, Pasco (1983) noted that there was very little theory or model development, little standardization of measurement instruments, low reliability of instruments, and uncertainty about the validity of instruments. Van Campen confirmed Pascoe’s earlier findings, noting that the research conducted on patient satisfaction lacked sufficient theoretical foundations, and that most of the instruments lacked methodological rigor regarding the reliability and validity of subscales.

Exceptions, however, to the vast majority of atheoretical research on patient satisfaction exist. In her seminal research, Linder-Pelz (1982) used several types of social and psychological theories, included discrepancy theories, fulfillment theories, and equity theories, to formulate hypotheses about the determinants of
patient satisfaction (Linder-Pelz, 1982). These theories fall under the general rubric of the “disconfirmation paradigm” (Zegers, 1968), in which satisfaction is determined by the disparity between a standard (expectancies, values, or norms) and perceived occurrences.

In discrepancy theories, satisfaction is conceptualized as the difference between what actually occurs and what is expected, adjusted for what is expected. Mathematically, discrepancies theories can be formulated as follows:

\[ \text{Satisfaction} = \frac{(E - O)}{E}, \]

where \( E \) is what is expected and \( O \) is what actually occurs. In fulfillment theories, satisfaction is conceptualized as the simple difference between what is expected and what occurs, unadjusted for how much is desired in the first place. Mathematically, fulfillment theories can be formulated as follows:

\[ \text{Satisfaction} = E - O, \]

where \( E \) and \( O \) are as defined above. Finally, in equity theories, satisfaction is a function of whether people perceive they are being treated fairly. Equity theories differ from fulfillment and discrepancy theories in that they stress the importance of interpersonal comparisons between how one is treated and how others are treated rather than intrapersonal comparisons between one’s own expectations and perceptions of what occurs.

Sophisticated conceptual models of patient satisfaction that incorporate disconfirmation theories of satisfaction have been
constructed. Thompson and Suñol (Thompson & Suñol, 1995) recently proposed model of patient satisfaction based on marketing research conducted by Anderson (Anderson Rolph E, 1973) and Parasuraman (Parasuraman, Berry, & Zeithaml, 1991). The assimilation-contrast model of perceptions proposed by Anderson draws heavily from cognitive dissonance theory. In it, he proposes that when perceptions of attribute performance differ only slightly from expectations, there is a tendency for people to displace their perceptions towards their expectations; the assimilation effect. However, there is a point on either side of this range beyond which people can no longer effect displacement but begin to exaggerate the increasing difference between perceptions and expectations; the contrast effect.

Figure 1 (page 21) depicts Anderson’s model. The horizontal axis represents actual or objective attribute performance, the vertical axis represents perceived attribute performance, and the diagonal axis represents expectations. When the difference between expectations and actual attribute performance are small (between arrows), differences between perceptions and actual attribute performance are minimized. On the other hand, when expectations and actual between expectations and actual attribute performance are large (outside arrows), differences between perceptions and actual attribute performance are exaggerated.

Parasuraman’s model (see Figure 2, page 22) posits a zone of tolerance as a range between adequate and desired levels of service expectations. The zone of tolerance in this model corresponds to the assimilation effects proposed in the previous model. Parasuraman’s model takes the additional step of distinguishing between process and outcome expectations. This distinction seems to make sense in the health care
context, where patients might hold different expectations for process and outcomes. For example, the quality of hospital food might have a larger zone of tolerance and lower level of expected service performance than treatment efficacy.

Thompson and Suñol reject the notion of an “objective” measure of attribute performance. In their model (see Figure 3, page 23), attribute performance is judged only by service users on perceptual terms. Initial perceptions of attribute performance are represented by a downward sloping diagonal axis and post-assimilative/contrast perceptions are represented by an upward sloping diagonal axis. A zone of tolerance around predicted expectations is posited, bounded by a minimum predictable level and an achievable normative level, on the assumption that normative expectations will exceed predicted expectations. When initial perceptions exceed predicted expectations within the zone of tolerance, the model posits a smaller amount of satisfaction than predicted by initial perceptions alone due to an assimilation effect. However, when initial perceptions exceed predicted expectations outside the zone, the model posits more satisfaction than predicted by initial perceptions alone due to a contrast effect. Thompson and Suñol propose that the curves represented in their model differ across domains of patient evaluation.

Conceptualizing Expectations

As hinted at in the proceeding section, the ways that expectations are conceptualized vary among researchers. In a recent review of the literature on expectations, Thompson and Suñol identified four types of expectations: predictions, ideals, normative standards,
and unformed expectations (Thompson & Suñol, 1995). Researchers, who conceptualize consumer expectations as predictions, believe consumer expectations are predictions about what is likely to happen during an impending exchange or encounter. For example, Oliver stated, “It is generally agreed that expectations are consumer-defined probabilities of the occurrence of positive and negative events if the consumer engages in some event” (Oliver Richard L, 1981). In contrast, researchers who conceptualize consumer expectations as ideals, refer to expectations as the desires of consumers (i.e., what consumers want rather than what will be offered).

Expectations have also been conceptualized as normative standards. In this case, expectations are about what should or ought to happen during an impending transaction or exchange, rather than what is expected or desired. Normative expectations can be equated with what consumers have been told, or led to believe, or personally deduced that they ought to receive from health services. Normative expectations are related to a subjective evaluation of what is deserved in a situation, and to some extent is also a socially endorsed evaluation.

Finally, Thompson and Suñol (1995) defined a fourth type of expectations, unformed expectations. Unformed expectations occur when consumers are “unable or unwilling, for various reasons, to articulate their expectations, which may be because they do not have any, or find it too difficult to express, or do not wish to reify their feeling, due to fear, anxiety, conformity to social norms, etc. This may be a temporary phenomenon prior to the experience and the gaining of knowledge. It may include ‘taken for granted’ attributes of care” [p.
The authors argue that unformed expectations may be quite common in health care settings, where previously healthy persons may encounter many new aspects of the health care system once they become sick. Thus they may encounter the health care system without preformed expectations.

**Implications for Patient Evaluation Research in Multicultural Settings**

Regardless of how satisfaction is modeled, a person's racial/ethnic background can have an important influence on his/her evaluations of healthcare. All patient satisfaction theories incorporate expectations as determinants of satisfaction, and research on the determinants of expectations suggests that sociodemographic factors including age, gender, and racial/ethnic background influence expectations (Kravitz, 1996).

Past experiences are thought to be important in shaping predictions about future experiences. Thus patient expectations about future contacts with the health care system, conceptualized as predictions, are likely influenced by past experiences with health care and the health care system. Because racial/ethnic minorities tend to be treated at different hospitals than whites (Blacks tend to receive care at teaching hospitals while whites tend to receive care at non-teaching hospitals) (Kahn et al., 1994), expectations about the quality of care may also differ. Thus Blacks and whites may judge current experiences with care differently as a result of different past experiences with care.
A person’s culture shapes both their normative and ideal expectations. For example, the low regard of the Hmong people for western health care has been documented (Fadiman, 1998). An examination of the practices of their traditional healers reveals that they routinely spend up to four hours with each patient during a consultation, render diagnoses without blood tests or extensive personal histories, and that physical examinations of women never include vaginal pelvic exams. Although the Hmong are reported to view western medicine as sometimes helpful, it is easy to see how their expectations about health care would greatly deviate from their experiences, resulting in dissatisfaction. Clearly, comparing patient evaluations given by the Hmong and whites would have different implications than comparisons between Blacks and whites.

Research conducted in this thesis addresses the need for assessing racial/ethnic differences in quality of care, while acknowledging the methodological complexities of making racial/ethnic comparisons. Methods to minimize the potential for biased instruments are discussed, and empirically studies to examine survey scales for bias are conducted. At the same time, studies to assess quality of care differences among racial/ethnic groups are conducted. Although studies to test for differences in expectations across racial/ethnic groups are not conducted in this thesis, this topic is left to future research. However, understanding the determinants of patient evaluations of care is helpful in illuminating the complex issues that arise when studies that make racial/ethnic comparisons are undertaken.
References


Notes: COMMENTS: Comment in: Med Care 1996 Mar;34(3):280-2


Notes: Reviews literature for satisfaction surveys based on 5 criteria: theoretical foundation, containing subscales representing
major aspects of QCPP, reliability and validity, feasibility in population study, and instrument applied in home care setting. Five instruments identified. One theoretically sound.


Figure 1. Assimilation-Contract Model of Perceptions.

Source: Anderson, R. F. (1971)
Figure 2. Zone of Tolerance Model.

Source: Parasuraman, et al., 1991
Figure 3. Assimilation-Contrast Model of Patient Satisfaction

Source: Thompson & Suñol, 1995