

TESTING A SYSTEMS RESEARCH ORGANIZING MODEL
FOR BEHAVIORAL HEALTH

by

Karen Joyce Saewert

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SIGNED Karen Joyce Lauwert

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DEDICATION

In the beginning I had a desire to achieve. I took the plunge. In the days, weeks, months, and years ahead there were days when I felt lousy, grumpy, lonely, and utterly exhausted. There were days when I felt small and insignificant and when everything seemed out of my reach. There were days when just getting started seemed impossible while trying to balance competing demands and priorities. Feelings of frustration and anxiety at times left me to question how much longer I was going to be able to hang in there, prompting me to ask others to remind me why I decided to do this. Along the way I have found some new wrinkles, a few extra pounds, and had more than my share of bad hair days. However, persistence ruled.

Now is the time for me to look back and see what I have accomplished and to realize I have accomplished something great. In this end there is a new beginning. In this end I have a desire to achieve.

I dedicate this dissertation to the belief that it is never too late to buy green bananas.

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ABSTRACT

The purpose of this multifaceted research project was to explain and predict mental health outcomes through testing of a systems research organizing model using pre-existing behavioral health consumer-oriented data. Community Partnership of Southern Arizona provided the setting for the participation of its members in the statewide 2001 Mental Health Statistics Improvement Program Consumer Perception Survey. The sample for this study consisted of 214 adult member survey respondents.

The Systems Research Organizing Model for Behavioral Health (SROM-BH) provided the conceptual framework for examining client risk adjustment characteristics and cost and access factors that interact with consumer participation processes to affect consumer perception of quality and health related quality of life. The American Academy of Nursing's Quality Health Outcomes Model and The University of Arizona Nursing Systems Core's System Research Organizing Model informed the development of the SROM-BH that extends this work through its adaptation for use within the context of behavioral health.

Composite indices were developed for five model variables, implying that composites or latent variables can be developed from existing data when there is fastidious attention to theory and the conceptual definitions of the constructs. Eight hypothesized positive predictor and three unhypothesized negative predictor relationships were supported. Three hypothesized positive predictor relationships were not supported. Consumer participation in treatment planning, the intervention of interest in this study had an effect (either direct or indirect) on all five outcome variables.

Reexamination of model relationships with a larger sample and continued testing of the survey instrument for psychometric performance is recommended. Further model testing using separate scales or methods is needed in order to reduce method effect and to determine the full strength of the findings. Use of structural equation modeling may offer a more precise test of the theoretical framework, strengthen support for instrument subscale construct validity through confirmatory factor analysis, and may provide an opportunity for analysis of recursive paths. Further development of recovery authentication, a concept developed as a result of this study, may contribute to a broadened understanding of opportunities to promote recovery and moderate the loss of self that is associated with mental illness.

CHAPTER I

INTRODUCTION

The purpose of this multifaceted research project was to explain and predict mental health outcomes through testing of a systems research organizing model using pre-existing behavioral health consumer-oriented data. The aims of this study were to:

1. examine the existing behavioral health data for feasibility of its use in model testing,
2. test model relationships related to mental health outcomes, and
3. examine the application and usefulness of a systems research organizing model for behavioral health.

From past to present, nursing has recognized quality outcomes. The notion of outcomes has existed in health care since Florence Nightingale's experience in the 1800s with improving mortality rates among British soldiers, yet it is only within the past decade that outcomes became a concept critical to contemporary health care delivery (Jennings & Staggers, 1999).

Nightingale ascribed to the philosophy that elements of the environment (structure) could be manipulated (process) to maximize the likelihood of recovery (outcome). Although the determination of quality of care has had visibly documented support from those within and regulating health care for the last three decades, the focus of concern has been with the input systems side of the equation, rather than the throughput (process) or output (customer outcomes) with little done to look at all aspects simultaneously as a whole entity (Nielsen, 1992). The organizing framework used in this

study captures the conceptually complex nature of health care quality and recognizes the individual quality components as well as their dynamic interrelatedness.

Databases used in building predictive models are often transactional, that is, data were collected for reasons other than the modeling effort currently being envisioned (Hobbs, 2001). This research extends the usefulness of transactional data obtained from an existing state mental health agency database. Through use of secondary data, this research project:

1. transforms data into information and knowledge for future decision-making and research applications,
2. discovers (uncovers) and tests (validates) relationships between system (context), intervention, client, and outcome variables,
3. assists in data examination efforts and contributes to the important work of assessing and improving the quality of behavioral healthcare services in Arizona, and
4. demonstrates the usefulness of a dynamic systems research organizing model for behavioral health.

An examination of both public and private mental health sectors reveals a lack of comprehensive mental health care monitoring systems (Kamis-Gould, 1987; Rosenheck & Cicchetti, 1998; Sorensen, Zelman, Hanbery, & Kucic, 1987). An absence of a common database for evaluating outcomes reflects a lack of system-level thinking in both policy and clinical arenas (Mitchell, 1993). Lack of comprehensive monitoring systems, in combination with shrinking health care budgets and rapid health care organizational

change, leaves mental health care vulnerable to disproportionate cutbacks in funding and reductions in quality (Rosenheck & Cicchetti, 1998).

Over the last decade, the Mental Health Statistics Improvement Program (MSHIP) Ad Hoc Advisory Committee of the Center for Mental Health Services has invested in activities directed at the development and testing of a consumer-oriented healthcare report card focused on people with serious mental illness and mental health service treatment outcomes. National developments suggest that the program: (a) offers a suitable philosophical framework, (b) proposes standards for a minimum core of mental health data for the total field, (c) emphasizes agency-level development and use of data systems, and (d) possesses the capacity to further management objectives in both the private and public sectors (Kamis-Gould & Waizer, 1992). The authors further emphasize the potential value of the performance indicators derived from the MHSIP content to serve as a tool that would further quality of care through transformation of data into a meaningful and useful consolidated management tool.

The State of Arizona, as a result of the participation of its Regional Behavioral Health Authorities (RBHAs), has made a significant contribution to this effort through involvement in the MHSIP16-State Indicator Pilot Project funded by the Substance Abuse and Mental Health Services Administration during the time period of September 30, 1998 through September 29, 2001. Contribution to this effort included data collection organized across the domains of access, quality/appropriateness, structure, and outcome (Figure 1).

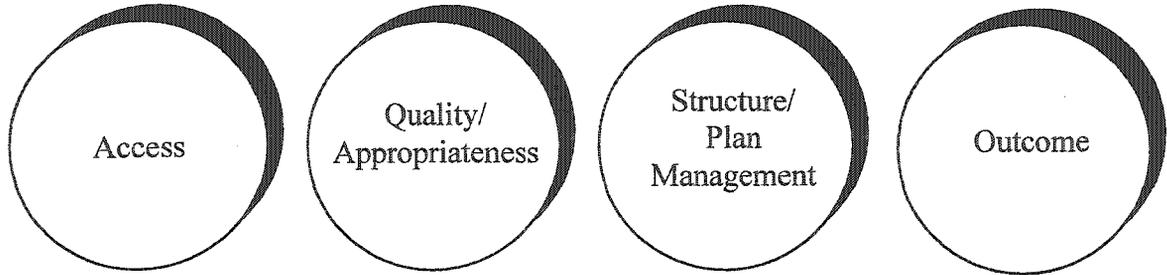


Figure 1. Organizing model for the State of Arizona Mental Health Statistics Improvement Project pilot data.

The healthcare enterprise, characterized as data rich while knowledge poor, lacks judgment with regards to the hidden potential of healthcare data (Abidi, 1999). The use of secondary data extends the pool of knowledge to make maximal use of data and compels researchers to cautiously scrutinize the way in which conclusions drawn from empirical data are used to build knowledge (Clarke & Cossette, 2000). Careful analysis of the MHSIP pilot data can provide the State of Arizona and its RBHAs opportunity for refinement of the measurement indicators to ensure their usefulness in providing stakeholders with reliable methods and data for use in evaluating mental health services and outcomes. Sound information resulting from such efforts provides the vehicle for linking knowledge, clinical management, policy development, advocacy, and research in the manner needed for mental healthcare policy and planning (Kamis-Gould & Waizer, 1992).

As background and support for this research, a review is presented of relevant concepts related to the societal demand for public accountability in the delivery and outcomes of healthcare services. Consumer-oriented report cards, behavioral health consumer-oriented report cards, and mental health services research is considered.

Consumer participation, the basis for the theoretical model presented in Chapter 2, will also be discussed.

Societal Demand for Public Accountability

Increased demand and national attention for public accountability in the practice of medicine, nursing, and other clinical disciplines is a hallmark of the current healthcare environment (Badger, 1998). This interest extends globally to an international concern for quality measurement as well as recognition of its early developmental stages (Bickman & Salzer, 1997).

Changes in the U. S. health care system over the last decade include (a) development of new organizational structures, (b) changed economic incentives, (c) privatization, (d) growth of managed care, and (e) the emergence of quality management practices (Herman, Regner, Erickson, & Yang, 2000). Chance (1997) delineates the concern with defining and measuring quality care as attributable to a number of factors that stem from economic (health care industry consumption of more core consumer dollars), legislative (description and evaluation of professional practice), and professional health care issues (responsibility for all professions to upgrade and improve the quality of the services they render).

An unprecedented interest in service outcomes and other performance indicators under the rubric of measuring quality of care is being experienced. This interest is punctuated by government and citizenry concerns about the absence of accountability and perceived lack of consumer orientation (Bickman & Salzer, 1997) and emphasis on healthcare data as the root of patient care and financial decision making in the healthcare

industry (Fletcher, 1998). Outcomes have become a concept critical to contemporary health care delivery (Jennings & Staggers, 1999). Davies (2001) states,

A single feature has dominated the vast majority of research on quality in the last two decades of the 20th century: the use of explicit measures to document and quantify the structures, processes and outcomes of health care. These explicit measures are used to describe wide variability, make inferences about the extent of quality failings and to estimate the consequences of these failings” (p. 243).

Today’s reality is that data reign supreme. Data and research techniques must be applied in a pragmatic way to affect the destiny of health care institutions and protect patients by ensuring that outcomes are optimized (Jennings, 1999). This reality signifies the importance of patient-centered outcome measures as the *de rigueur* of the new generation of health research (Kane, 1997a) and mandates our willingness to look through new lenses and examine what we are doing in service to patients who deserve no less (Jennings, 1999). Responding to this demand for accountability, report cards have emerged as a new tool to achieve better-informed consumer choice and improved health plan performance.

Functions of Report Cards

Report cards typically measure the resources and organizational arrangements in place to deliver care, the processes of care, services utilization, treatment outcomes, and patient satisfaction data. The report card approach to measuring quality of care has prompted concerns related to the absence of evaluative studies to determine validity or reliability, potential for inaccurate or misleading information sources, selection of indicators that may not adequately measure quality, and lack of verification mechanisms to ensure accuracy of reported results (Jones, Jennings, Moritz, & Moss, 1997; U. S.

General Accounting Office, 1994). Additional issues have been raised about the accuracy of reported information, the actual link between report card measures and treatment quality, and the standardization of measures used across plans and providers (Hall & Flynn, 1997; Hibbard & Jewett, 1996).

Report card information must be used appropriately and judiciously. Although report cards and other performance measurements serve as important tools by which information about quality and costs can be quantified and shared with the purchasers and users of the clinical care delivery system, they are only one part of an overall effort to focus on quality and enhance accountability (Badger, 1998). Nevertheless, these initiatives might provide information that would not have been otherwise forthcoming (Carlson, 1995). Ultimately, the most important factor in improvement of quality of care is that quality is, in fact, being evaluated (Bailit, Lewis, Hockheiser, & Bush, 1975; Chance 1997).

Consumer-Oriented Report Cards

Meisenheimer (1991) refers to the client or recipient of health care services as the *raison d'être*, the focal point, of all health care providers. It is predicted that the patient's voice will prevail during the next era in the evolution of health care in the United States (Jennings & Staggers, 1999) as the era of consumer sovereignty begun in the 1990s takes hold, fueled and ignited by economic, political, social, ethical, and legal pressures commencing in the 1960s (Meisenheimer, 1991).

Patients are an important source of information, some of which only they can provide (Kane, 1997b) although their role has been historically minimal and considered

external to the health care delivery process. Consumer concepts of quality have primarily focused on interpersonal and direct experience of care as opposed to less direct measures of cost and access. Hibbard and Jewett (1996) conjecture that this may change after new sources and types of quality information are made accessible to the public. It is believed that the saliency and conception of quality will evolve as consumers are exposed to new quality information (Epstein, 1995).

Behavioral Health Consumer-Oriented Report Cards

Mental health consumers have become increasingly involved in evaluating the quality of psychiatric care and applying sophisticated data strategies to affect system reform in the past decade (Campbell, 1997). Asking consumers of mental health services how they are doing in a wide range of domains is an integral part of an outcome assessment program (Eisen, 2000).

A discussion of report cards in the public mental health setting must take into consideration the Mental Health Statistics Improvement Program report card (DeLiberty, 1998). In response to the focus on increased accountability throughout the early 1990s, the Center for Mental Health Services, through the Mental Health Statistics Improvement Program, supported consumer research efforts to define and measure outcomes that were meaningful to the recipients of services (Campbell, 1997). As a result, a consortium of professionals and consumers were convened as a task force of the Mental Health Statistics Improvement Project in 1994, proposing a program and indicators for use in evaluating the performance of public mental health providers (Rosenheck & Cicchetti, 1998). Additional opportunities for optimal communication of mental health service

consumer needs to report card developers, inclusion of mental health outcome measure in existing report cards, and increased consideration of mental health treatment are needed (Hall & Flynn, 1997). Actions such as these have the potential to facilitate a process that will enable mental health consumers and professionals to embrace the concept that consumer involvement in quality-of-care monitoring is useful, cost-effective, and a consumer's right (Campbell, 1997).

The public mental health system can use the process of contributing client-oriented perspectives to the development of outcomes in order to improve mental health service delivery (DeLiberty, 1998; Merwin & Mauck, 1995). By drawing on consumer knowledge the culture of the mental health care system, the role of its participants, and the engineering of information systems can change in ways that promote opportunities for individual and systems decision to be made in different and more effective ways (Campbell, 1997).

Outcomes Research

Outcomes research refers to systematic inquiry (Jennings, 1995) that differs from more traditional clinical research largely through attention to a wider range of patient-centered outcomes (Kane, 1997a) to generate data to evaluate the effect of current care (Ray, 1999). While the urgency of cost containment in the current health care delivery environment threatens to dominate, the primary focus of outcomes evaluation is quality (Jones, Jennings, Moritz, & Moss, 1997).

Mitchell (1993) promotes outcomes as the hallmark of understanding the effectiveness of individual care and, by extension, systems of care. To consider outcomes

as relevant to systems of care and individual provider therapies, the utility of outcomes data must be enhanced. This will require (a) selection of meaningful, reliable, and valid outcome indicators that are feasible to implement across multiple levels of care; (b) standardization of outcome indicators and their operational definitions; (c) representative sampling; (d) accurate and complete data collection; (e) appropriate data analytic techniques; and (f) understandable feedback of results to stakeholders (Eisen, 2000).

Mental Health Services Research

Although its potential usefulness is just being tapped, the demand for empirical effectiveness data about mental health services is high (Eisen, 2000). Growing emphasis on mental health consumer values, community care, broadened measurement of outcomes, and adoption of managed care presents tremendous challenges for mental health services delivery and the way in which its quality and performance are measured (Campbell, 1997; Herman, Regner, Erickson, & Yang, 2000; Merwin & Mauck, 1995).

Faced with increasing external pressure to practice from an outcome perspective, assessment of clinical outcomes is rapidly becoming a routine part of clinical operations across the spectrum of mental health services (Eisen, 2000; Merwin & Mauck, 1995). As a result of responding to state and federal mandates requiring the collection and storage of data, state mental health authorities generally have enormous data banks, but suffer from a lack of capacity to analyze and mine the data effectively (Bevilacqua, Morris, & Pumariega, 1996).

Consumer Participation

One of the key concerns in mental health services is how to improve outcomes of care. Increased consumer participation has been linked to improved outcomes. In both health and mental health services, research indicates that such involvement is correlated with positive outcomes, fosters a collaborative and trusting relationship, and supports the consumer's ability to make decisions and act responsibly (Mental Health Statistics Improvement Program, 1996). This important link serves as the basis for the initial theoretical model presented in Chapter 2.

Potential for New Research Generation

A shift in research activity toward outcomes research may allow the investigation of healthcare quality to develop from *ad hoc* collections of descriptions into a more mature and coherent field with a holistic view of systems change (Davies, 2001). Subsumed in this shift is the examination of best use of data to link accountability and control with problem identification, causation, and explanation of variation in order to constructively address and bring about improvements. It is argued that efforts such as these possess the capacity to explain quality failings and facilitate the design of testable interventions at the individual and organizational level directed at effecting health care quality improvement.

Research Aims

There were three basic aims to this research project:

1. to examine the existing behavioral health data for feasibility of its use in model testing,

2. to test model relationships related to mental health outcomes, and
3. to examine the application and usefulness of a systems research organizing model for behavioral health.

The aims were both substantive and methodological. In order to assess the substantive aim of this study, the existing behavioral health consumer-oriented data was examined for feasibility of use in model testing and the ability to develop composite indices for model variables (Aim 1). In the interest of explaining and predicting behavioral health outcomes, the substantive aim (Aim 2) was to assess the structural relationships among a system of variables, assessing the impact of consumer participation on system (context) and outcome variables. Of particular interest was the impact of consumer participation in treatment planning on consumer perception of access, consumer perception of quality, and health related quality of life measures. The third aim focused on the application and feasibility of using the Systems Research Organizing Model for Behavioral Health (SROM-BH). Specific research questions and hypotheses are posed after presentation of the initial theoretical model in Chapter 2.

Summary

Nurses have an extraordinary opportunity to contribute to the scientific basis of nursing practice by pursuing patient outcomes focused research (Jennings, 1991). The low volume of psychiatric nursing research focused on any particular outcome challenges the ability to demonstrate responsiveness to societal demands for outcome accountability and make a contribution to the conceptualization, empirical validation and selection of relevant outcomes of care (Merwin & Mauck, 1995). Challenges to the mental health

services research agenda include responding to a perceived lack of consumer orientation focused on people with serious mental illness and mental health service treatment outcomes. Reliable data are needed by consumers, mental health advocacy groups, healthcare purchasers, providers, and state mental health agencies for use in evaluating and improving the quality of mental health services and outcomes. Projects that provide opportunities for collaborative research initiatives have the potential to provide assistance to these agencies in using data already collected in new, effective, and meaningful ways.

CHAPTER II

CONCEPTUAL FRAMEWORK

This chapter begins with attention to the importance of theory development and the use of conceptual frameworks in health care quality outcomes research. For purposes of this study, a definition of behavioral health care quality is proposed. This chapter introduces the Systems Research Organizing Model for Behavioral Health (SROM-BH) developed for use in this study. Discussion of the two conceptual frameworks informing its development (American Academy of Nursing's Quality Health Outcomes Model and The University of Arizona Nursing Systems Core's Systems Research Organizing Model) is presented. In order to provide a conceptual orientation to the SROM-BH, each conceptual domain is discussed.

Theory Development and Use of Conceptual Frameworks

“Without adequate theory, observations remain isolated from each other and from a broader sweep of understanding. . . .in the absence of some organizing framework, the interrelatedness and relative importance of material facts remains obscure” (Davies, 2001, p. 247). Jennings (1991) similarly concludes, “findings will be weakened if studies are not based on the sophisticated conceptual models and designs that are essential to proper exploration of the array of phenomena involved with outcomes” (p. 68).

Strong theory has the ability to (a) assist in the organization of data (provide a matrix within which observations can be placed, connected, and interpreted); (b) provoke speculation and the creation of new hypotheses; and (c) help direct further observation

efforts toward prolific parts of the system (Davies, 2001). In this way, theory and data become intertwined.

Merwin and Mauck (1995) urge increased use of conceptual models to guide the development of outcomes research. “Careful planning, based on a clear conceptual model of the expected relationships among the variables of interest, is necessary” (Kane, 1997a, p. x) and “the model used to guide patient outcomes research [should] be a carefully conceived blend of comprehensiveness and parsimony” (Jennings, 1991, p. 63). This research project developed and used a dynamic multidimensional model to take into account the complex conceptual challenges surrounding behavioral health outcomes research.

Health Care Quality

Neilsen (1992) suggests that theory development related to the phenomena of quality of care is based on the assumptions that quality care is a desirable aspiration for all health care providers and that the meaning of quality care is not necessarily shared among, or between the providers or recipients of care. Important to this discussion is an examination of the notion of health care quality.

While quality is considered an esoteric and personal concept (Redfern, 1993) society attaches importance to the word, equating it with excellence and a belief that the best service or object available is being received (Taylor & Hausmann, 1988). Quality of care, long talked about in the health care industry, has become a political, legal, and regulatory buzzword (Scearse, 1989).

The construct of quality care has not been well conceptualized within the realm of professional practice and reflects a significant variation in the meaning of quality among clinical practitioners, administrators, and patients accompanied by the absence of consensus regarding the criteria or conditions that must be met to determine if quality patient care has occurred at the patient, hospital, or community level (Neilsen, 1992).

Brown (1992) states,

the environment of health care, consumer movements, and external pressures have stimulated great interest in defining quality care. . . . Empirical evidence to define quality is in its infancy, whereas the theoretical propositions abound. Until the health care industry can agree on quality dimensions and concepts, the concept of quality care will remain elusive. (p. 73)

Micheletti, Shlala, and Goodall (1998) define quality as “the degree to which healthcare services increase the likelihood of desired health outcomes consistent with professional knowledge” (p.2). For the purposes of this research, quality is defined as the degree to which behavioral healthcare services (interventions) increase the likelihood of desired consumer focused behavioral health care outcomes.

Health Care Quality Model Development

There is no single theoretical framework for quality health care although a number of conceptual frameworks inform quality measurement related activities (Herman, Regner, Erickson, & Yang, 2000). The general literature characterizes the triad of structure (having the right things), process (doing the right things), and outcomes (having the right things happen) as the key components of quality (Jennings & Staggers, 1999; Neilsen, 1992). Over time, the evaluation of quality has shifted emphasis among

these individual components with outcomes the current focal point (Jennings & Staggers, 1999).

Although current attention is targeted on outcomes it is believed that the most accurate assessment of outcomes will occur through a more integrative view of quality that would result by examining structure, process, and outcomes, as well as their interrelationships, simultaneously (Jennings & Staggers, 1998; 1999). Attree (1996) emphasizes that investigation of the various elements of health care quality needs to incorporate the inter-relationship and inter-dependence of these multiple dimensions as well as perspectives. Studies examining the interactive aspects of these components are critical to the improvement of health services (Jones, 1991) and are better suited to address the complex reality of patient care and ensure more thorough answers to important care questions (Jennings, 1991).

Quality Health Outcomes Model

The American Academy of Nursing Expert Panel on Quality Health Care has proposed a dynamic quality health outcomes model, incorporating the time-honored structure-process-outcome framework while challenging the notion that there is any single direct connection linking interventions and outcomes (Mitchell, Ferketich, Jennings, & American Academy of Nursing Expert Panel on Quality Health Care, 1998). Intending to more closely align with the dynamic processes of patient care and outcomes than other current models, the Quality Health Outcomes Model suggests that (a) interventions are affected by both system and client characteristics in producing desired outcomes, (b) the connection between system and client indicates the hypothesis

that no single intervention acts directly through either system or client alone, and (c) the effect of an intervention is mediated by client and system characteristics without independent direct effects (Mitchell, et. al, 1998).

Systems Research Organizing (SRO) Model

Seeking explication of systems theory for nursing science, Nursing Systems Core faculty and students at The University of Arizona adopted the American Academy of Nursing's Quality Health Outcomes Model, but proposed adaptations to "build consistency into measuring and evaluating complex concepts, dynamic relationships, and the interaction among them, which are of primary interest to nursing systems researchers" (Brewer, 2002, p. 118). The resultant SRO Model, reflecting similarity to the Academy's Quality Health Outcomes Model, is a dynamic model grounded in the triad of structure-process-outcome, while specifically recognizing the influence of context and client characteristics on the intervention-outcomes relationship (Doyle & McEwen, 2002).

The SRO Model incorporates the nursing metaparadigm concepts of person, environment, health and nursing which is a distinction from traditional systems research (Doyle & McEwen, 2002) as well as health care quality related research. Historically the relationships among the components of the nursing metaparadigm have not been linked to the components of quality (Nielsen, 1992). This philosophical perspective distinguishes it from the perspective espoused by the Quality Health Outcomes Model (Donabedian's traditional structure-process-outcome linear model). Three adaptations further differentiate the SRO Model from the Academy's Quality Health Outcomes Model: (a) the placement of the client domain in a different temporal position, (b) change in the

structural domain concept of “system” to the environmental domain concept of “context”, and (c) the addition of a reciprocal direction of influence between intervention and outcome domains.

Systems Research Organizing Model for Behavioral Health (SROM-BH)

Because the SRO Model is context sensitive, the assumption tested addressed the capacity for direct application or adoption of the use of the SRO Model’s four concepts as a research framework for studying interventions within behavioral health services. The



Figure 2. Systems research organizing conceptual model for behavioral health.

concepts in the SROM-BH (Figure 2) reflect an adoption of the aforementioned model for application within the context of behavioral health. The SROM-BH addresses client, system (context) and interventions related to consumer-oriented behavioral health

outcomes. Both the Academy's Quality Health Outcomes Model and the SRO Model reflect two-way arrows to indicate a reciprocal direction of influence between domains. These reciprocal influences are not reflected in the SROM-BH for reasons related to data availability and the exploratory nature of this research project.

Using the SROM-BH, this study examined client risk adjustment characteristics (client) and cost and access (system/context) factors that interact with consumer participation (intervention) processes to affect consumer perception of quality and health related quality of life (outcomes) using data from an existing consumer-oriented public mental health service agency database.

Client: Risk Adjustment Measures

Measures used in this study were adjusted for age, gender, ethnicity, geographic area, severity, and service type risk factor dimensions. The purpose of risk adjustment is to “minimize biases imposed by variability in patient or community characteristics that may influence scores on performance measures, independent of provider performance” (Rosenheck & Cicchetti, 1998, p. 89). “Variations in outcomes...can be due [to] many factors including clients’ psychiatric diagnosis, type treatment, level of care provided, age, sex, race, co-morbidity, and treatment provider” (Ohio Department of Mental Health, 2001, ¶ 1).

In their examination of the influence of an active psychiatric disorder on patient satisfaction with health care, Herman, Ettner, and Dorwart (1998) hypothesized that patients with psychiatric disorders would be less satisfied with their health care due to the adverse effects of these conditions on mood and cognition. They emphasized the

importance of case mix adjustment when comparing satisfaction ratings and identified the need for the development of quality measures less susceptible to subjective biases.

Iezzoni (1995) as cited by Rosenheck and Cicchetti (1998) emphasizes, “Statistical risk adjustment, although widely recognized as a profoundly imperfect solution, is essential to the legitimacy of any observational outcome measurement system” (p. 96). While it is impossible to measure or control all variables that influence patient outcomes, it is essential to choose a model to guide patient outcomes research that is sufficiently complex to ensure that these important questions are comprehensively examined (Jennings, 1991) and that incorporates consideration of the potential effects of patient attribute risk factors (Kane, 1997d).

“The need for greater efficiency in publicly funded mental health services has led to a search for patient attributes that predict resource use and outcome” (Kisely, Preston, & Rooney, 2000, p. 1009). The credibility of a study may rest on testing for the effects of potential intervening risks factors (Kane, 1997d) and is particularly important for outcome assessment when individuals are not randomly assigned to different treatments (Eisen, 2000).

Intervention: Consumer Participation

The intervention variable of interest considered in this study was consumer participation. “Intervention or treatment refers to actions or techniques used in particular situations to elicit desired outcomes” (Jennings, 1991, p. 62). Isolating the effects of these interventions or treatments lies at the heart of outcomes research and requires sensitivity

to the possibility that the effects of treatment are mitigated by other variables (Kane, 1997c).

Sabin and Daniels (1999) stress the importance of two fundamental reasons for wanting meaningful consumer and family involvement in behavioral health care: (a) quality can be neither defined nor improved without consumer and family involvement; and (b) consumers, families, and the public cannot be expected to trust health care systems that do not hold themselves accountable.

Geller, Brown, Fisher, Grudzinska, and Manning (1998) conducted a national survey to determine the extent of consumer empowerment in U.S. state and territory public health systems. Geller et al. (1998) define consumer empowerment as the status in which psychiatric clients: (a) form their own independent social networks not dependent on professional for social support; (b) use professionals for technical assistance to make better decisions themselves in environments where they exercise full participation in decisions affecting their own lives; (c) participate in treatment with professionals and paraprofessionals as collaborators, not as passive people receiving treatment, where they are seen as the primary informants about what is wanted and needed from providers; (d) are respected for the legitimacy of their points of view, which are not written off as just product of their illness; (e) use resources from the entire community and not just the formal mental health system; (f) operate within a health-promoting system; (g) have significant input beyond their individual treatment into decision making at program, agency, community, state, and federal levels; (h) achieve a sense of self-responsibility; and (i) are sure that consumer empowerment is more than just a buzzword. They

conclude: “research should focus on how consumers in state or county mental health authorities influence policies, contribute to dialogue, and represent the consumer perspective” (1998, p. 500).

Context: Cost and Access

The contextual variables of interest in this study were cost and access. Access to mental health services as well as the impact of cost containment on the delivery of mental health services represents an increasing concern to patients, providers, payers, and advocates for the mentally ill (Weissman, Pettigrew, Sotsky, & Regier, 2000). A better understanding of access, utilization, and costs contributes to the sound management of mental health systems (Mental Health Statistics Improvement Program, 1996).

Cost control and access are receiving the primary emphasis in the current health care reform debate prompting basic questions as to whether cost control and access achievement can be achieved without a significant price to pay in terms of quality of care (Barondess, 1994). The health care system which operated until the late 1960s under the assumption that health care was beyond economic consideration has been forcibly transformed into a health care environment characterized by competition, demands of high quality, and serious economic constraints (Spitzer, 1998). Factors which stem from economic, legislative, and professional health care issues stimulate (a) professional accountability for service delivery, (b) demonstration of the value and benefits of goods and services, and (c) professional responsibility to upgrade and improve services to society as a whole (Chance, 1997). This transformation is considered to be far more comprehensive and revolutionary than was ever previously envisaged (Spitzer, 1998).

“The quantity of care, that is, the access and subsequent use of services, must be considered when making judgments regarding quality” (Meisenheimer, 1991, p. 41). Fiesta (1992) asserts that the changing economics of healthcare will lead to a changing standard of care measurement as a result of the direct impact both cost and technology have upon the definition of what is a reasonable standard of care. Fleming (1990) states, “the truth is that nobody really is sure to what extent costs can be cut while at the same time maintaining or improving quality” (p.487). According to Sisk (1998):

the areas of most interest for assessing the influence of competition are those where greater sensitivity to cost threatens to undermine quality or promises to improve it: aspects of quality that overlap with access to care, interpersonal aspects of quality, technical aspects of quality, care for vulnerable populations, and differential enrollment by plans. (p. 691)

The timeliness and convenience of access to services is a major value in the public mental health system and represents a significant factor in ensuring that persons receive needed services (Mental Health Statistics Improvement Program, 1996).

Outcomes: Consumer Perception of Quality and Health Related Quality of Life

Outcome measures addressed in this study were consumer perception of quality and health related quality of life measures. Outcomes are (a) the end results of care, (b) the consequences of the various things we do, and (c) what happens because of our delivery structure and process (Jennings, 1995). Outcomes possess tremendous potential for (a) affording ways to improve care, (b) increasing professional accountability, (c) revamping healthcare practices based on objective data, and (d) making powerful health care decisions (Jennings, 1995; Jennings & Stagers, 1999). The Mental Health Statistics Improvement Program (1996) considers consumer perception of outcomes to be the most

direct measure of the consumer's perception of the effectiveness of services.

Consumer perception of quality. Jennings and Staggers (1999) assert, "all individuals involved in examining quality...need to accept that the components of quality will vary depending on the stakeholder. An obligation exists to acknowledge explicitly from whose perspective quality is being examined" (p. 19). Donabedian (1980) emphasized quality is ultimately defined by the consumer, and stressed the need for providers of health care services to strive to attain the highest levels of consumer satisfaction since it is an element of psychological health. In a study conducted to examine service characteristics, needs, and outcomes of adult consumers with severe mental disability served in a public mental health setting, Roth and Crane-Ross (2002) concluded:

more subjective measures of treatment quality, such as consumers' perceptions that their needs are met and that they have say over their services, may play a significant role in improving symptomatology and quality of life outcomes for consumers served in a community setting. (p. 55)

The consumer's perspective of mental health services, a dimension of outcome, is necessary for scientific reasons because many unsolved problems in research involve the "black box" of consumer responses to service delivery (Howard, Clark, Rayes, Hines-Martin, Weaver, & Littrell, 2001). Research suggests that quality of care factors such as sensitivity to and respect for the consumer and the consumer's perception of the competence of staff will determine a consumer's willingness to remain in treatment (Mental Health Statistics Improvement Program, 1996).

Health related quality of life. The concept of quality of life is complex with most misunderstandings and difficulties arising from uncertainty about which aspect (ranging

from health status and functional capabilities, to material considerations or the person's own inner experience) of the concept is being considered (Dazord, Astolfi, Guisti, Rebetez, Mino, Terra, & Brochier, 1998). The increasing emphasis on measuring health related quality of life over the last decade has been prompted by a broadening approach to the definition of health and a recognition that traditional methods of evaluation can be limited in the type of data they provide as well as recognition that the patient's perspective needs to be considered when the success of a particular intervention is being judged (Staniszewska, 1999). Caron, Tempier, Mercier and Leouffre (1998) suggest it would be useful to identify which components of mental health interventions relate to quality of life. Quality of life measures selected for use in this study were level of functioning, symptom relief, and recovery authentication.

Level of functioning and symptom relief. Treatment success can be denoted by improvement in functioning or in maintenance of functioning level and the ability to respond to problems, crisis, and everyday situations (Mental Health Statistics Improvement Program, 1996). Treatment services are also expected to provide relief from the symptoms associated with mental illness.

Recovery authentication. Mental health providers and systems should offer services that promote and support the process of recovery and help people manage their illnesses and participate in their communities (Mental Health Statistics Improvement Program, 1996). Recovery authentication, the perception of staff belief in the consumer's capacity to grow, change, and recover has the potential to promote recovery and to enhance the consumer's sense of personhood. Dignity, self-respect, self-mastery, self-

esteem, and self-worth are subsumed in the concept of personhood. Personhood is related to a sense of the loss of self that is associated with mental illness and is considered to be a critical and emergent concept and goal in the treatment of mental illness (Mental Health Statistics Improvement Program, 1996).

Initial Theoretical Model

“Outcomes research is not simply about developing mathematical models to explain observed phenomena. It is intended to explore causal pathways” (Kane, 1997a,

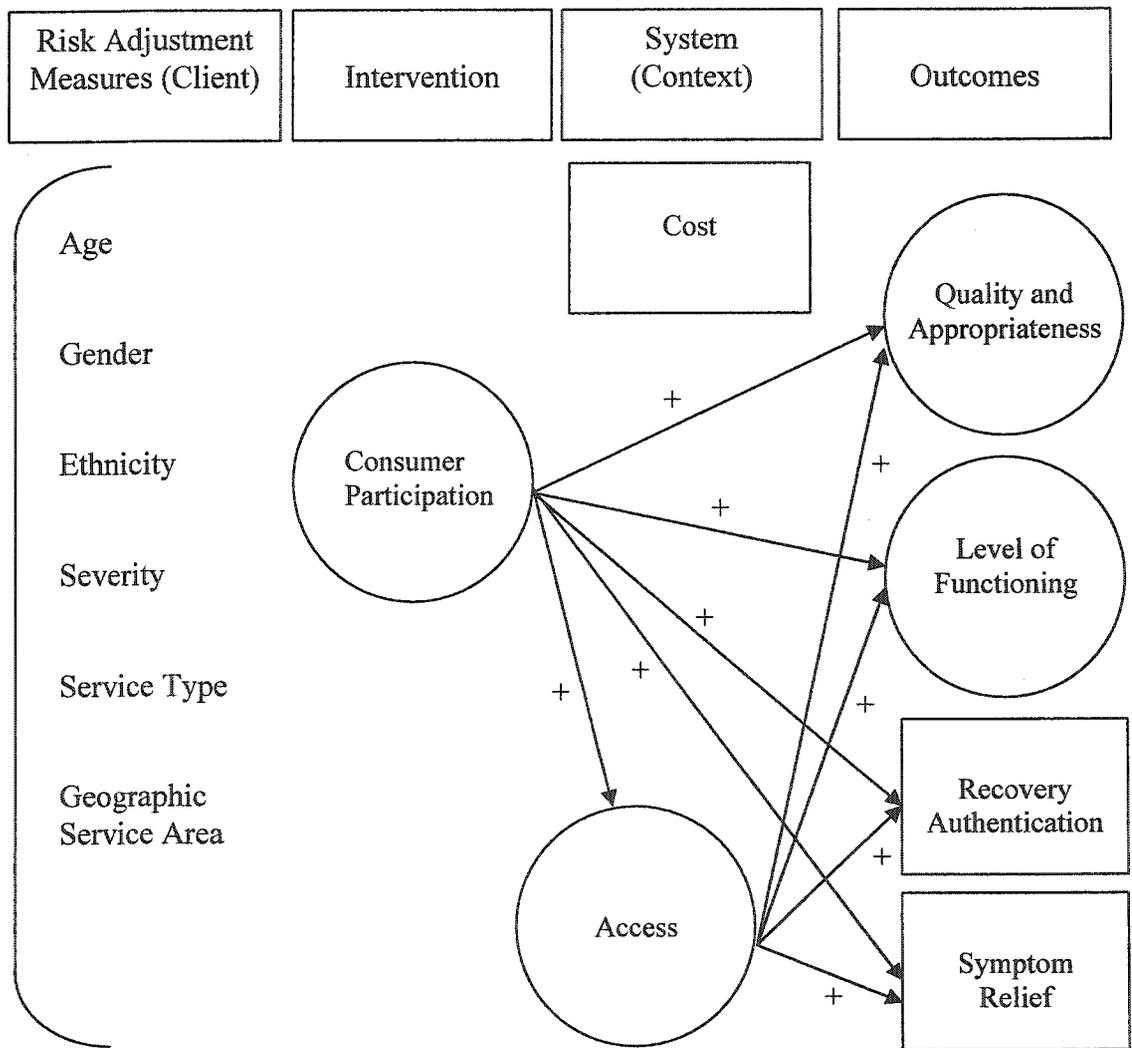


Figure 3. Initial theoretical systems research organizing model for behavioral health.

p. x). Merwin and Mauck (1995) suggest that the use of complex research designs and statistical analysis is necessary to assist in identifying and understanding multiple structural factors which combine to differentially affect diverse outcomes. Figure 3 reflects a transformation of the SROM-BH (Figure 2) into a causal modeling framework used in this study for empirical testing.

Research Questions

The research questions for this project addressed both the methodological and substantive aims of the study (Table 1):

Table 1.

Research Aims and Question.

Research Aim	Research Question
1. To examine the existing behavioral health consumer-oriented data for feasibility of use in model testing.	1. Can composite indices be created for model variables?
2. To test model relationships related to mental health outcomes.	2. What is the effect of client risk adjustment measures on level of intervention, contextual variables, and outcomes?
3. To examine the application and usefulness of a systems research organizing model for behavioral health.	3. Does the adapted SRO model adequately explain behavioral health client outcomes?

In addition to the research questions several hypotheses were tested as they relate to the second research aim (To test model relationships as related to mental health outcomes).

The research hypotheses for this study were:

1. Clients who perceived greater participation in care will have a greater perception of access and better outcomes.
2. Clients who perceived greater access will have a greater perception of better outcomes.
3. Cost of services, as measured by entitlement status, will not have an impact on outcomes.

Since there is limited evidence of the effect of client risk factors, no hypotheses were posed for these relationships; however, they were explored through the development of research question 2.

Summary

The SROM-BH used in this study provided the conceptual framework for examining client risk adjustment characteristics (client) and cost and access (system/context) factors that interact with consumer participation (intervention) processes to affect consumer perception of quality and health related quality of life (outcomes). Individual quality components as well as their interrelatedness were recognized. This dynamic model, applied in the behavioral health setting, is grounded in the triad of structure-process-outcome, while specifically recognizing the influence of context and client characteristics on the intervention-outcomes relationship.

CHAPTER III

METHODOLOGY

Research Design

This research was designed to discover and test relationships among behavioral health related intervention, system (context), and outcome variables, risk adjusted for client characteristics. A descriptive theoretical model design using secondary data was used in this study. Use of an existing data set provided an opportunity to answer new questions and to make the maximum use possible of research data (Clarke & Cossette, 2000, p. 109).

In this chapter, the study's methodology and its application to State of Arizona MHSIP pilot data is explicated. A description of the specific measurement variables is provided. Attention is given to both primary and secondary data collection and analysis. Protection of human subjects procedures are also reviewed.

Research Setting and Data Source

Community Partnership of Southern Arizona (CPSA), a regional behavioral health authority (RHBA) within the State of Arizona, collaborated with the Arizona Department of Health Services, Division of Behavioral Health Services (ADHS/DBHS) to provide the setting for participation of its members in the statewide 2001 Mental Health Statistics Improvement Program (MHSIP) consumer perception survey. This data served as the operational database for this research project. The data model (SROM-BH) directed the structure of this project's data warehouse and informed the selection of consumer perception survey data based on the variables of interest.

Research Sample and Unit of Analysis

The sample for this study was adult members receiving public mental health services through Community Partnership of Southern Arizona (CPSA). Outcomes under investigation were assessed at the individual consumer level. The unit of analysis was the individual behavioral health care service consumer.

Primary Data Collection

Sample Criteria

The Arizona Department of Health Services, Division of Behavioral Health Services (ADHS/DBHS) selected sample sizes stratified by regional behavioral health authority and program at an alpha of .05 with a power of 80%. Upward sample size adjustments were made based on historical regional behavioral health authority (RBHA) response rates for open and active cases that included any current member receiving services within 120 days prior to sample selection. The two geographic service areas served by Community Partnership of Southern Arizona (CPSA) were combined to obtain the representative sample per population served.

Table. 2

Community Partnership of Southern Arizona Adult Population and Sample by Program

Program	Population	Sample Size	% of Population
Substance Abuse	899	553	61.5
General Mental Health	1202	593	49.3
Persons with Serious Mental Illness	2259	618	37.4
Total	4360	1764	40.5

The Arizona Department of Health Services, Division of Behavioral Health Services (ADHS/DBHS) submitted the selected representative sample to Community Partnership of Southern Arizona (CPSA) from which to select members. Community Partnership of Southern Arizona (CPSA) was responsible for verifying active status and accuracy of mailing addresses. A computer software random selection function was used to select random samples for each adult member population group. A sample of 1764 (40.5%) was selected from a population of 4360 adult members. Sample sizes for each adult member program population are identified in Table 2.

Instrumentation

The adult member survey (Appendix A) was written in both English and Spanish. The survey consisted of two parts. The first part of the survey contained 28 items addressing consumer perception of the four Mental Health Statistics Improvement Program (MHSIP) domains: general satisfaction (3 items), accessibility (6 items), quality and appropriateness (11 items), and outcomes (8 items). Distribution of the survey items across the four organizing domains is presented in Table 3.

Table 3.

Distribution of CPSA Consumer Perception Survey Items Across MHSIP Domains

Domain	CPSA Survey Item
General Satisfaction	<ul style="list-style-type: none"> • I liked the services that I received. • If I had other choices, I would still get service from this agency.

Table 3. (continued)

Domain	CPSA Survey Item
General Satisfaction	<ul style="list-style-type: none"> • I would recommend this agency to a friend or a family member.
Accessibility	<ul style="list-style-type: none"> • The location of services was convenient (parking, public transportation, distance, etc.) • Staff was willing to see me as often as I felt was necessary. • Staff returned my calls within 24 hours. • Services were available at times that were good for me. • I was able to get all my services I thought I needed. • I was able to see a psychiatrist when I wanted to.
Quality and Appropriateness	<ul style="list-style-type: none"> • Staff here believe I can grow, change, and recover. • I was given information about my rights. • I felt comfortable asking questions about my treatment medication. • I felt free to complain. • Staff encouraged me to take responsibility for how I live my life.

Table 3. (continued)

Domain	CPSA Survey Item
Quality and Appropriateness	<ul style="list-style-type: none"> • Staff told me what side effects to watch out for. • Staff respected my wishes about who is and who is not to be given information about my treatment. • I, not staff, decided my treatment goals. • Staff was sensitive to my cultural background (race, religion, language, etc.). • Staff helped me obtain the information I needed so that I could take charge of managing my illness. • I was encouraged to use consumer run programs (support groups, drop-in centers, crisis phone line, etc.)
Outcomes	<ul style="list-style-type: none"> • I deal more effectively with daily problems. • I am better able to control my life. • I am better able to deal with crisis. • I am getting along better with my family. • I do better in social situations. • I do better in school and/or work. • My housing situation has improved. • My symptoms are not bothering me as much.

The second part of the survey contained five additional items (Table 4). Three of these five items addressed consumer perception of treatment planning using a five point Likert type scale. The remaining two items addressed the use of primary care and/or emergency room services used binary option responses. No assessment of psychometric properties was reported for the survey instrument.

Table 4.

Additional CPSA Consumer Perception Survey Items

CPSA Survey Item

- In the last year, did you see a doctor or nurse in a hospital emergency room?
 - In the last year, other than going to a hospital emergency room, did you see a doctor or nurse for a health for a health check-up, physical exam or because you were sick?
 - Developing my service/treatment plan was a useful experience.
 - My service/treatment plan has been useful in achieving my treatment goals.
 - My service/treatment plan deals with the problems that are bothering me.
-

Distribution

The 1764 adult member surveys, produced in both English and Spanish, were distributed by mail. Letters from Community Partnership of Southern Arizona (CPSA) and the Arizona Mental Health Association accompanied the surveys to encourage participation. A reminder post card was sent to the sampled adult members two weeks following the mailing date of the survey. The survey window of time for completion and return was six weeks.

Survey Response and Respondent Demographics

Adult sample response rates by program are summarized in Table 5. An overall response rate of 12.2% (214) was achieved. Undeliverable surveys were limited to 0.34% (15). The sample drawn was reflective of the population for which it was drawn for race, gender, and entitlement status (Community Partnership of Southern Arizona, 2001).

Table 5.

Adult Sample Response Rates by Program

Program	Sample	Responses	Response Rate
Substance Abuse	553	46	8.3%
General Mental Health	593	92	15.5%
Persons with Serious Mental Illness	618	76	12.3%
Total	1764	214	12.1%

Race and ethnicity. Of the 214 adult survey respondents, 77.6% (166) self-identified as White, 6.5%(14) as Black, 0.5%(1) as Asian, 3.7%(8) as Native American, and 9.8% as other. Race data was missing for 1.9% (4) of the adult survey respondents. Hispanics were subsumed under the white racial grouping. Ethnicity data was dichotomized as either Hispanic or Non Hispanic or Latino, with 32.2% (69) respondents self-identifying as Hispanic and 45.4% (97) as Non Hispanic or Latino. Ethnicity data was missing for 22.4% (48) of the adult survey respondents.

Gender. Of the 214 adult survey respondents, 41.1% (88) were male and 58.4% (125) were female. Gender data was missing for 0.5% (1) of the adult survey respondents.

Entitlement status. The Title XIX Program (Medicaid) is a public health care insurance program for people and families with low incomes that pays for medical and behavioral health care. Of the 214 adult survey respondents, 57% (122) were receiving public health care insurance program services.

Age. Adult survey respondent age ranged from 19 to 85 years with a mean age of 44.6 (SD = 13.49). Of the 214 adult survey respondents, 1.9% (4) were between the ages of 18 and 20, 14.5% (31) between the ages of 21 and 30, 36.4% (78) between the ages of 31 and 45, 40.7% (87) between the ages of 46 and 64, 3.7% (8) between the ages of 65 and 74, and 3.7%(8) 75 years of age and older.

Primary Data Analysis

Community Partnership of Southern Arizona (CPSA) compiled program, entitlement status, gender, ethnicity, race and person completing the survey form descriptive profiles of the adult member respondents. Descriptive comparisons of overall general satisfaction, accessibility, quality and appropriateness, and outcomes mean scores were conducted. These same descriptive comparisons were completed for adult members receiving entitlement monies. No statistical comparisons of these groups were conducted.

Research Sample and Unit of Analysis

The sample for this study is the adult member Consumer Perception Survey respondents receiving public mental health services through Community Partnership of Southern Arizona (CPSA). Outcomes under investigation were assessed at the individual consumer level. That is, the unit of analysis was the individual behavioral health care service consumer.

Secondary Data Analysis

Data elements available from the CPSA Consumer Perception Survey were identified. A systematic review of survey items was conducted in consultation with an instrumentation expert. Data were examined for patterns of missing data. Content validity assessment was conducted for the reorganization of selected state of Arizona Mental Health Statistics Improvement pilot project Consumer Perception Survey items across the SROM-BH domains under investigation in this study (Table 6).

Table 6.

CPSA Consumer Perception Survey Items Organized Across SROM-BH Domains

SROM-BH Domain: Indicator	CPSA Survey Item
Intervention: Consumer Participation in Treatment Planning	<ul style="list-style-type: none"> Developing my service/treatment plan was a useful experience. My service/treatment plan has been useful in achieving my treatment goals. My service/treatment plan deals with the problems that are bothering me. I, not staff, decided my treatment goals.
System (Context): Consumer Perception of Access	<ul style="list-style-type: none"> The location of services was convenient (parking, public transportation, distance, etc.). Staff was willing to see me as often as I felt was necessary.

Table 6. (continued)

SROM-BH Domain: Indicator	CPSA Survey Item
System (Context):	<ul style="list-style-type: none"> ● Staff returned my calls within 24 hours.
Consumer Perception of Access	<ul style="list-style-type: none"> ● Services were available at times that were good for me. ● I was able to get all my services I thought I needed. ● I was able to see a psychiatrist when I wanted to.
Outcomes:	<ul style="list-style-type: none"> ● I liked the services that I received from this agency.
Quality and Appropriateness	<ul style="list-style-type: none"> ● If I had other choices, I would still get services from this agency. ● I would recommend this agency to a friend or a family member. ● I felt comfortable asking questions about my treatment medication. ● I felt free to complain. ● I was given information about my rights. ● Staff encouraged me to take responsibility for how I live my life. ● Staff told me what side effects to watch out for. ● Staff respected my wishes about who is and who is not to be given information about my treatment.

Table 6. (continued)

SROM-BH Domain: Indicator	CPSA Survey Item
Outcomes: Quality and Appropriateness	<ul style="list-style-type: none"> • Staff was sensitive to my cultural background (race, religion, language, etc.). • Staff helped me obtain the information I needed so that I could take charge of managing my illness. • I was encouraged to use consumer-run programs (support groups, drop-in centers, crisis phone line, etc.)
Outcomes: Level of Functioning	<ul style="list-style-type: none"> • I deal more effectively with daily problems. • I am better able to control my life. • I am better able to deal with crisis. • I am getting along better with my family. • I do better in social situations. • I do better in school and/or work • My housing situation has improved.
Outcomes: Recovery Authentication	<ul style="list-style-type: none"> • Staff here believes that I can grow, change, and recover.
Outcomes: Symptom Relief	<ul style="list-style-type: none"> • My symptoms are not bothering me as much.

Additional data elements included age, gender, ethnicity, severity, program service type, geographic service area, entitlement status, and cost (Table 7). Age, as a continuous variable, was used. Gender was dummy coded to control for the effects of being male. Ethnicity was dummy coded to control for the effects of being White, Table 7.

Measures of Other Model Variables

Model Variable	Survey Item
Age	Age (actual)
Gender	Gender
Ethnicity	Ethnicity
Severity	<ul style="list-style-type: none"> • In the last year, did you see a doctor or nurse in a hospital emergency room? • In the last year, other than going to a hospital emergency room, did you see a doctor or a nurse for a health check-up, physical exam or because you were sick?
Service Type	<ul style="list-style-type: none"> • Program (substance abuse, general mental health, persons with serious mental illness)
Geographic Service Area	Geographic Service Area (urban vs. rural)
Cost	Entitlement Status

non-Hispanic. Three items were selected to serve as proxy variables for severity. Two items addressed consumer utilization of emergency room services (risk-reduction strategy) and primary care services (health promotion and risk-prevention strategy). These two items were dummy coded to control for the effects of non-utilization of these services. The third item addressed the consumer's service type and was dummy coded to control for the effects of persons with serious mental illness. Geographic service area was dummy coded to control for the effects of rural location. Entitlement status was selected to serve as a proxy for the cost contextual variable dummy coded to control for the effects of Title XIX status.

The psychometric analysis methods and criteria for determination of significance are presented in Table 8. All statistical analyses were performed using SPSS version 11.5 for Windows.

Table 8.

Psychometric Analysis Methods and Significance Criteria

Analysis Method	Significance Criteria
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	$\geq .70$
Bartlett's Test of Sphericity	$<.05$
Factor Analysis	Eigenvalue ≥ 1.0
	% Variance Explained $\geq .30$
	Factor Loadings $\geq .40$
	Factor Loading Difference $\geq .20$
Cronbach's Alpha	$\alpha \geq .70$

Psychometric analysis of the survey instrument and subscales was performed using Cronbach's alpha and factor analysis with principal axis factoring and varimax rotation. Factor analysis was explored for purposes of data reduction and to support the underlying theoretical structure of the subscales and confirm the existence of a single factor for each. Dummy coding procedures were used for risk adjustment measures.

Three different and equally important analyses were conducted as a part of this research project. Although structural equation modeling was considered, regression analysis was selected as this study's methodology due to the beginning stages and exploratory nature of this study. Multiple regression analysis with the stepwise method was performed to assess hypothesized causal relationships as specified in the initial theoretical model. A second regression equation for each dependent variable for all preceding variables in the model was performed in order to test for unhypothesized relationships. Statistical significance was set at an alpha of .05.

Human Subjects

The Community Partnership of Southern Arizona 2001 Consumer Perception Survey data was identified as an appropriate data set for use in conducting this study. Access to this data was negotiated and access procedures were completed (Appendix B). Human subjects review through The University of Arizona Human Subjects Review Committee was performed prior to study commencement (Appendix C).

Summary

A descriptive theoretical model design using secondary data was used in this study. This research was designed to discover and test relationships among a system of

behavioral health related intervention, system (context), and outcome variables, risk adjusted for client characteristics. All measures were assessed at the individual level for psychometric properties.

CHAPTER IV

RESULTS

Research Question One

The first aim of this research project was to examine the existing behavioral health consumer-oriented data for feasibility of use in model testing. The purpose of this section is to discuss the research findings related to the first research question that asked: Can composite indices be created for model variables? Factor analysis was explored for purposes of data reduction and to obtain support for the underlying theoretical structure of four subscales: Consumer Participation in Treatment Planning, Consumer Perception of Access, Consumer Perception of Quality and Appropriateness, and Level of Functioning.

Consumer Participation in Treatment Planning

Consumer participation in treatment planning subscale analysis is presented in Table 9. Factor analysis supported a single composite index for this intervention variable. Four survey items loaded on one factor. Factor loadings ranged from .692 to .906. These four survey items account for 72.5% of the total variance. All significance criteria were met.

Table 9.

Consumer Participation in Treatment Planning Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.784
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	1

Table 9. (continued)

Cumulative % Variance Explained	72.451
Subscale Mean	9.5476
Subscale Standard Deviation	3.5238
Survey Item	Factor Loadings
Developing my service/treatment plan was a useful experience.	.906
My service/treatment plan has been useful in achieving my treatment goals.	.903
My service/treatment plan deals with the problems that are bothering me.	.885
I, not staff, decided my treatment goals.	.692

Consumer Perception of Access

Consumer perception of access subscale analysis is presented in Table 10. Factor analysis supported a single composite index for this contextual variable. Six survey items

Table 10.

Consumer Perception of Access Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.883
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	1
Cumulative % Variance Explained	63.704
Subscale Mean	13.3260
Subscale Standard Deviation	5.2312

Table 10. (continued)

Survey Item	Factor Loadings
The location of services was convenient (parking, public transportation, distance, etc.)	.615
Staff was willing to see me as often as I felt was necessary.	.868
Staff returned my calls within 24 hours.	.820
Services were available at times that were good for me.	.836
I was able to get all my services I thought I needed.	.777
I was able to see a psychiatrist when I wanted to.	.846

loaded on one factor. These six survey items account for 63.7% of the total variance.

Factor loadings ranged from .615 to .868. All significance criteria were met.

Quality and Appropriateness

Consumer perception of quality and appropriateness subscale analysis is presented in Table 11. A single composite index for this outcome variable was not Table 11.

Quality and Appropriateness Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.883
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	2
Cumulative % Variance Explained	56.770

Table. 11 (continued)

Survey Item	Factor 1 Loadings	Factor 2 Loadings
I liked the services that I received from this agency.	.864	.200
If I had other choices, I would still get services from this agency.	.858	.228
I would recommend this agency to a friend or family member.	.814	.276
I felt comfortable asking questions about my treatment medication.	.623	.406
I felt free to complain. *	.512	.479
Staff encouraged me to take responsibility for how I live my life.	.104	.685
I was given information about my rights.	.283	.678
Staff told me what side effects to watch out for.	.184	.671
Staff respected my wishes about who is and who is not to be given information about my treatment.	.235	.667
Staff was sensitive to my cultural background (race, religion, language, etc.)	.385	.635
Staff helped me obtain the information I needed so that I could take charge of managing my illness.	.317	.589
I was encouraged to use consumer-run programs (support groups, drop-in centers, crisis phone lines, etc.). **	.431	.513

* .033 factor loading difference

** .082 factor loading difference

supported. Twelve survey items loaded on two factors. Two survey items loaded on both factors with a factor loading difference of less than .20 and posed the question as to whether to retain these two survey items. A decision, based upon item content, loading and the theoretical model of the study, was made to retain each item with the factor they were most closely related to conceptually. The first factor was composed of items that measured an affective response to service and care delivery. The second factor was composed of items that measured consumer perception of the quality and appropriateness of staff actions, support, and interventions. Two subscales were formed to address affective response and staff support consumer perceptions of quality.

Quality and Appropriateness: Affective Response

Quality and appropriateness affective response subscale analysis is presented in Table 12. Factor analysis supported a single composite index for this outcome variable. Five survey items loaded on one factor. These five survey items account for 65.5% of the Table 12.

Quality and Appropriateness Affective Response Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.818
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	1
Cumulative % Variance Explained	65.519
Subscale Mean	10.0437
Subscale Standard Deviation	3.9542

Table. 12 (continued)

Survey Item	Factor Loadings
I liked the services that I received from this agency.	.848
If I had other choices, I would still get services from this agency.	.850
I would recommend this agency to a friend or family member.	.853
I felt comfortable asking questions about my treatment medication.	.756
I felt free to complain.	.731

total variance. Factor loadings ranged from .731 to .853. All significance criteria were met.

Quality and Appropriateness: Staff Support

Quality and appropriateness staff support subscale analysis is presented in Table 13. Factor analysis supported a single composite index for this outcome variable. Seven Table 13.

Quality and Appropriateness Staff Support Response Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.808
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	1
Cumulative % Variance Explained	48.346
Subscale Mean	14.6732
Subscale Standard Deviation	4.4910

Table 13. (continued)

Survey Item	Factor Loadings
Staff encouraged me to take responsibility for how I live my life.	.685
I was given information about my rights.	.688
Staff told me what side effects to watch out for.	.718
Staff respected my wishes about who is and who is not to be given information about my treatment.	.657
Staff was sensitive to my cultural background (race, religion, language, etc.)	.652
Staff helped me obtain the information I needed so that I could take charge of managing my illness.	.774
I was encouraged to use consumer-run programs (support groups, drop-in centers, crisis phone lines, etc.)	.685

survey items loaded on one factor. These seven survey items account for 48.3% of the total variance. Factor loadings ranged from .652 to .774. All significance criteria were met.

Level of Functioning

Level of functioning subscale analysis is presented in Table 14. Factor analysis supported a single composite index for this outcome variable. Seven survey items loaded on one factor. These seven survey items account for 72.7% of the total variance. Factor loadings ranged from .710 to .915. All significance criteria were met.

Table 14.

Level of Functioning Subscale Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.918
Bartlett's Test of Sphericity	< .001
Number of Components Extracted	1
Cumulative % Variance Explained	72.663
Subscale Mean	17.1721
Subscale Standard Deviation	6.3045
Survey Item	Factor Loadings
I deal more effectively with daily problems.	.894
I am better able to control my life.	.915
I am better able to deal with crisis.	.876
I am getting along better with my family.	.783
I do better in social situations.	.905
I do better in school and/or work.	.864
My housing situation has improved.	.710

Summary

Factor analysis was explored for purposes of data reduction and to obtain support for the underlying theoretical structure of four subscales: Consumer Participation in Treatment Planning, Consumer Perception of Access, Consumer Perception of Quality and Appropriateness, and Level of Functioning. Results of factor analysis provided

Table 15.

Summary of Reliability and Variance Explained

Scale	# Items	# Items Retained	α	
Survey as a Whole	31	31	.9577	
Subscale	# Items	# Items Retained	α	%Variance
Consumer Participation	4	4	.8682	72.451
Access	6	6	.8812	63.704
Affective Response	5	5*	.8664	65.519
Staff Support	7	7*	.8206	48.346
Level of Functioning	7	7	.9345	72.663

*retained survey item with factor loading difference < .20

support for the creation of composite indices for five subscales: Consumer Participation in Treatment Planning, Consumer Perception of Access, Consumer Perception of Quality and Appropriateness: Affective Response, Consumer Perception of Quality and Appropriateness: Staff Support, and Level of Functioning. Reliability and total variance explained for the 31-item survey and each of the five subscales is presented in Table 15.

Research Question Two

The second aim of this research project was to test model relationships related to mental health outcomes. The purpose of this section is to discuss the research findings related to the second research question that asked: What is the effect of client risk adjustment measures on level of intervention, contextual variables, and outcomes?

Multiple regression analyses were performed using the stepwise method to assess hypothesized and unhypothesized relationships in the model. Statistical significance for path regression weights was set at $p \leq .05$.

Hypothesized Predictor Relationships

Model testing supported eight hypothesized predictor relationships. Access was not found to be a significant predictor of level of functioning or symptom relief. Consumer participation in treatment planning was not found to be a significant predictor of recovery authentication. A summary of the significant hypothesized positive predictor relationships is presented in Table 16.

Consumer participation in treatment planning was a significant positive predictor of access ($\beta = .68, p = < .001$). Consumer participation in treatment planning accounted for 46% of the variance in consumer perception of access.

Consumer participation in treatment planning ($\beta = .24, p = < .001$) and consumer perception of access ($\beta = .61, p = .008$) were significant positive predictors of consumer perception of quality and appropriateness (affective response). Consumer participation in treatment planning and consumer perception of access accounted for 64% of the variance in consumer's affective response to the quality of service care and delivery.

Consumer participation in treatment planning ($\beta = .37, p = < .001$) and consumer perception of access ($\beta = .45, p = < .001$) were also significant positive predictors of consumer perception of quality of service care and delivery (staff support). Consumer participation in treatment planning and consumer perception of access accounted for 55%

of the variance in consumer perception of quality of service care and delivery (staff support).

Consumer participation in treatment planning ($\beta = .73, p = .001$) was a significant positive predictor of level of functioning. Consumer participation in treatment planning accounted for 53% of the variance level of functioning.

Table 16.

Summary of Significant Hypothesized Predictor Relationships

Dependent Variable	Independent Variable	Standardized Coefficients		Adjusted R Square
		Beta	Significance	
Access	Consumer Participation	.68	< .001	.46
Affective Response	Access	.61	.008	.64
	Consumer Participation	.24	< .001	
Staff Support	Access	.45	< .001	.55
	Consumer Participation	.37	< .001	
Level of Functioning	Consumer Participation	.73	.001	.53
Recovery	Access	.63	< .001	.39
Authentication				
Symptom Relief	Consumer Participation	.45	< .001	.20

Consumer perception of access ($\beta = .63, p = < .001$) was a significant positive predictor of recovery authentication. Consumer perception of access accounted for 39% of the variance in recovery authentication.

Consumer participation in treatment planning ($\beta = .45, p = < .001$) was a significant positive predictor of symptom relief. Consumer participation in treatment planning accounted for 20% of the variance in symptom relief.

Unhypothesized Predictor Relationships

Model testing supported three unhypothesized predictor relationships. Rural geographic service area ($\beta = -.24, p = .007$) and non-utilization of emergency room services were significant negative predictors ($\beta = -.20, p = .023$) of consumer participation in treatment planning. Rural geographic service area and non-utilization of emergency room services accounted for 8% of the variance in consumer participation in treatment planning. Persons with serious mental illness program designation was a significant positive predictor of cost ($\beta = .41, p = < .001$) and accounted for 16% of the variance in cost. A summary of the significant unhypothesized predictor relationships is presented in Table 17.

Table 17.

Summary of Significant Unhypothesized Predictor Relationships

Dependent Variable	Independent Variable	Standardized Coefficients		Adjusted R Square
		Beta	Significance	
Consumer Participation	Rural Geographic Service Area	-.24	.007	.08
	Non-Utilization of ER Services	-.20	.023	
	SMI Program	.41	< .001	
Cost	SMI Program	.41	< .001	.16

Summary

Multiple regression analysis was performed using the stepwise method to assess hypothesized and unhypothesized relationships in the theoretical model. Eight hypothesized positive predictor and three unhypothesized negative predictor relationships were supported at a significance level of $p \leq .05$. Model testing did not support three hypothesized positive predictor relationships.

Research Question Three

The third aim of this research project was to examine the application and usefulness of a systems research organizing model for behavioral health. The purpose of this section is to discuss the research findings related to the third research question that asked: Does the adapted SRO model adequately explain behavioral health client outcomes? The empirical model resulting from model testing is presented in Figure 4.

Significant Hypothesized Predictors

Consumer participation in treatment planning was found to be a significant positive predictor of five model variables: consumer perception of access, consumer perception of quality and appropriateness (affective response), consumer perception of quality and appropriateness (staff support), and symptom relief. Consumer perception of access was found to be a significant positive predictor of three model variables: consumer perception of quality and appropriateness (affective response), consumer perception of quality and appropriateness (staff support), and recovery authentication.

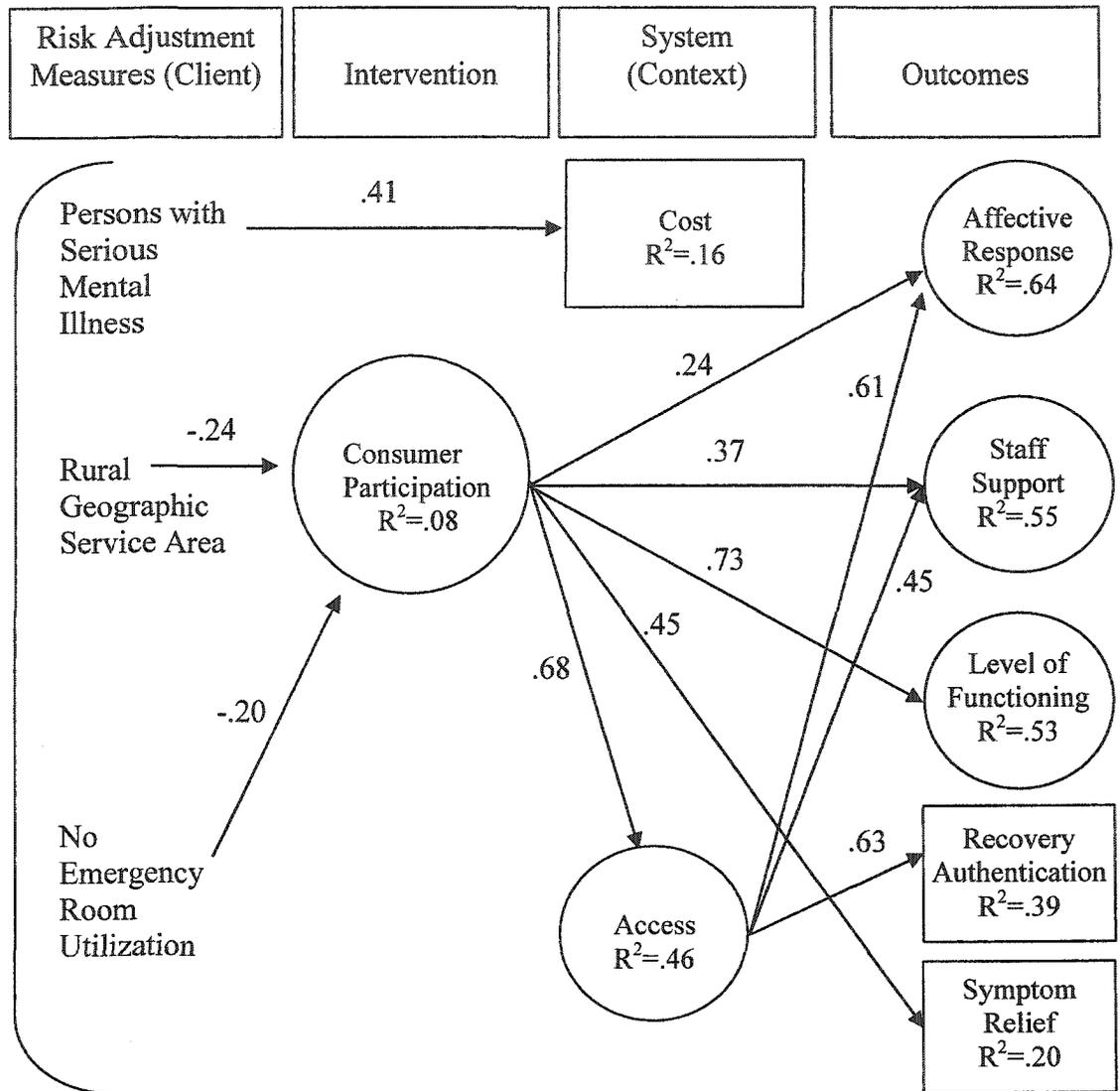


Figure 4. Empirical systems research organizing model for behavioral health.

Total Effects of Consumer Participation in Treatment Planning

An examination of the causal path coefficients for the consumer perception of quality and appropriateness (affective response) and consumer perception of quality and appropriateness (staff support) outcome variables suggests that consumer perception of access is a stronger direct predictor of these two outcomes than consumer participation in treatment planning. However, the strong direct effect ($\beta = .68, p = < .001$) of consumer

participation in treatment planning on consumer perception of access must be considered, and total effects of consumer participation in treatment planning on all outcomes calculated. Calculation of the total effects of consumer participation in treatment planning on each of the outcomes is presented in Table 18.

Table 18.

Total Effects of Consumer Participation in Treatment Planning on Outcomes

Outcome	Effects		
	Direct	Indirect	Total
Consumer Perception of Quality and Appropriateness: Affective Response	.24	.42	.66
Consumer Perception of Quality and Appropriateness: Staff Support	.37	.31	.68
Level of Functioning	.73	—	.73
Recovery Authentication	—	.43	.43
Symptom Relief	.45	—	.45

Significant Unhypothesized Predictors

Three client characteristic risk adjustment factors were found to be significant predictors. Rural geographic service area and non-utilization of emergency room services were negative predictors of consumer participation in treatment planning. Serious mental illness program designation was a positive predictor of cost as measured by entitlement status.

Summary

The adapted SRO model supported the identification of 11 predictor relationships at a significance level of $p \leq .05$. The identification of at least one positive predictor variable was identified for each outcome specified in the model. Consumer participation in treatment planning, the intervention of interest in this study had a direct effect on four of the five outcome variables. Consumer participation in treatment planning had an indirect effect on recovery authentication through consumer perception of access. As a result of this indirect effect, consumer participation in treatment planning had an effect (either direct or indirect) on all five outcome variables. Consumer perception of access had a direct effect on three of the five outcome variables. Use of statistical risk adjustment methods resulted in the identification of two client characteristic risk adjustment factors as negative predictors of consumer participation in treatment planning and one as a positive predictor of cost as measured by entitlement status.

CHAPTER V

IMPLICATIONS

This multifaceted research project was designed to discover and test relationships among a system of behavioral health variables risk adjusted for client characteristics. A descriptive theoretical model design using secondary data was used. The aims were both substantive and methodological:

1. Existing behavioral health consumer-oriented data was examined for feasibility of use in model testing and the ability to develop composite indices for model variables (Aim 1).
2. Structural relationships among the system of variables were assessed (Aim 2) with a focused interest on the relationship between consumer participation in treatment planning and model outcomes.
3. Application and feasibility of using the Systems Research Organizing Model for Behavioral Health (SROM-BH) was addressed (Aim 3).

Factor analysis and multiple regression data analytic methods were used. All measures were assessed at the individual level.

The purpose of this chapter is to present a discussion, organized by research question, relating the study findings to the purpose of the research. Study limitations are presented as well as recommendations for further study and research.

Research Aim One

The purpose of this section is to discuss the implications of findings related to the first research questions that asked: Can composites be created for model variables?

Through the processes of content validity assessment and factor analysis the pattern of relationships among consumer perception survey items was examined in an effort to see if the pattern of relationships could be explained by a smaller number of underlying constructs. As a result, five distinct subscales representing consumer perceptions were formed. Each subscale exhibited internal consistency: $\alpha = .87$ for Consumer Participation in Treatment Planning, $\alpha = .88$ for Consumer Perception of Access, $\alpha = .87$ for Consumer Perception of Quality and Appropriateness (affective response), $\alpha = .82$ for Consumer Perception of Quality and Appropriateness (staff support), and $\alpha = .94$ for Level of Functioning. A single composite index was created for each of the five constructs and used in modeling testing. These results imply that composites or latent variables can be adequately developed from existing data when there is fastidious attention to theory (content validity of items) and the conceptual definitions of the constructs. This in turn opens up the potential for research and theory building from existing data sets to extend and build knowledge through the comprehensive use of available data.

Research Aim Two

The purpose of this section is to discuss the implications of findings related to the second research questions that asked: What is the effect of client risk adjustment measures on level of intervention, contextual variables, and outcomes? With limited evidence of their effect, no specific hypotheses were formed related to client risk adjustment measures. The impact of client risk factors were explored through multiple regression analyses performed to assess hypothesized and unhypothesized relationships in the model. There were no significant direct effects of client risk adjustment measures

on any of the outcomes measures. Three research hypotheses addressing the intervention, contextual, and outcomes variables were proposed and are discussed individually.

Hypothesis One

Clients who perceived greater participation in their care were hypothesized to have a greater perception of access and better outcomes. Study findings are consistent with the research literature that links consumer participation to improved outcomes. This important link served as the basis for the initial theoretical model tested in this study. The findings suggest that consumer participation in treatment planning is a direct positive predictor of access and a positive predictor (directly or indirectly) of all individual quality and appropriateness and health related quality of life outcome measures in the model. These findings support the hypothesis that clients who perceived greater participation in their care have a greater perception of access and better outcomes.

Model testing supported two unhypothesized predictor relationships related to consumer participation in treatment planning. Rural geographic service area ($\beta = -.24$, $p = .007$) and non-utilization of emergency room services were significant negative predictors ($\beta = -.20$, $p = .023$). These findings may suggest that rural service locations pose barriers to timely and convenient access to services and the opportunity to participate in treatment planning activities. While conjecture at best, perhaps the relationship between non-utilization of emergency room services and decreased likelihood of participation in treatment planning reflects a lack of a client's ability or willingness to seek out and engage in the use of available health care services. It is also

possible that there is another variable involved, not accounted for in the model, producing a spurious correlation.

Hypothesis Two

Clients who perceived greater access were hypothesized to have a greater perception of better outcomes. The influence of the strong and direct positive effect ($\beta = .68, p = < .001$) of consumer participation in treatment planning on consumer perception of access should be acknowledged in the interpretation of these findings. Model testing also supported unhypothesized relationships related to two client risk adjustment measures and consumer participation in treatment planning: geographic service area ($\beta = -.24, p = .007$) and non-utilization of emergency room services ($\beta = -.20, p = .023$).

Study findings provide partial support for the hypothesis that clients who perceive greater access have greater perception of better outcomes. Results of model testing suggest that consumer perception of access is a direct and positive predictor of both quality and appropriateness (affective response and staff support) outcomes measures and one health related quality of life outcome measure (recovery authentication). No significant predictor relationships were found between consumer perception of access and level of functioning and symptom relief.

A possible explanation takes into consideration an individual client's "locus of the experience" related to these measures. Levels of functioning and symptom relief are more reflective of outcome measures more internally generated through the process of a client's evaluation of "self" in relation to the measures. In contrast, affective response,

staff support, and recovery authentication represent outcome measures more externally generated through the process of a client's evaluation of "others" in relation to service environment, care and delivery. This interpretation suggests that in this model, consumer perception of access may be limited in its effect on outcomes to consumer perception of service environment, care and delivery measures versus measures reflective of health care quality of life (level of function and symptom relief).

Hypothesis Three

Entitlement status was selected as a proxy variable for the cost contextual measure and was dummy coded to control for the effects of a client's participation in a public health care insurance program for people and families with low incomes. An unhypothesized positive predictor relationship between service type associated with persons with serious mental illness and cost was identified. The results of model testing suggest that individuals with serious mental illness will reflect greater participation in a public health care insurance program.

Cost of services, as measured by entitlement status, was hypothesized to not have an impact on outcomes. Model testing supported the hypothesis and identified no significant predictor relationships between cost and outcomes. A cautious extrapolation suggests that it may be possible to view these findings favorably given that model testing did not support a negative predictor relationship between a client's participation in a public health care insurance program and perception of any outcome measures.

Research Aim Three

The purpose of this section is to discuss the implications of findings related to the third research question that asked: Does the adapted SRO model adequately explain behavioral health client outcomes? The adapted SRO model supported the identification of 11 predictor relationships. At least one positive predictor variable was identified for each outcome specified in the model. Consumer participation in treatment planning, the intervention of interest in this study had a direct effect on four of the five outcome variables. Consumer participation in treatment planning had an indirect effect on recovery authentication through consumer perception of access. As a result of this indirect effect, consumer participation in treatment planning had an effect (either direct or indirect) on all five outcome variables. Consumer perception of access had a direct effect on three of the five outcome variables. Use of statistical risk adjustment methods resulted in the identification of two client characteristic risk adjustment factors as negative predictors of consumer participation in treatment planning and one as a positive predictor of cost as measured by entitlement status. Relationships identified in this research should be viewed as preliminary due to the small sample size, availability of data, and the exploratory nature of this study.

Study Limitations

Response Rate

The overall response rate was low (12.2%). This low response rate resulted in efforts by Community Partnership of Southern Arizona and other State of Arizona RBHAs in cooperation with the Department of Health Services, Division of Behavioral

Health Services (ADHS/DBHS) to select an alternative survey methodology for use with the 2003 Consumer Perception Survey in an effort to increase the response rate, representativeness of the sample, and the generalizability of findings.

Instrumentation

The Consumer Perception Survey used by Community Partnership of Southern Arizona and other State of Arizona RBHAs in 2001 was a relatively untested tool for gathering data. Baseline psychometric performance of the Consumer Perception Survey was not previously reported. The 2003 version of the Consumer Perception Survey has also been changed, warranting careful examination of what may be limited opportunities for comparison with 2001 survey results.

Item Redundancy

The strength of the relationships and variance explained in this study may be related to a method effect. Correlations are always higher when the same method is used for data collection. Items used in this study were a part of the same method, that is, the survey questionnaire. Responses on one item may have influenced the responses on other items.

Generalizability

Both the Academy's Quality Health Outcomes Model and the SRO Model reflect two-way arrows to indicate a reciprocal direction of influence between domains. These reciprocal influences are not reflected in the SROM-BH for reasons related to data availability and the exploratory nature of this research project.

Future Research

The study limitations provide opportunities for future research. Consideration should be given to the reexamination of model relationships with a larger sample and continued testing of the survey instrument for psychometric performance. Further model testing using separate scales or methods is needed in order to reduce method effect and to determine the full strength of the findings. Use of structural equation modeling may offer a more precise test of the theoretical framework. Structural equation modeling may also strengthen support for instrument subscale construct validity through confirmatory factor analysis. Identification of reciprocal relationships in the SROM-BH and the use of structural equation modeling may also provide an opportunity for analysis of recursive paths. Finally, further development of recovery authentication, a concept developed as a result of this study, may contribute to a broadened understanding of opportunities to promote recovery and moderate the loss of self that is associated with mental illness.

Summary

This project has provided an opportunity to contribute to the scientific basis of nursing practice by its focus on client outcomes research. It has offered beginning contributions to the conceptualization, empirical validation and selection of relevant outcomes of behavioral health care. This study also provided the investigator with a valuable opportunity to collaborate with Community Partnership of Southern Arizona in this research initiative seeking to give voice to the behavioral health care consumer and improve the quality of mental health services and outcomes.

This research project developed and used a dynamic multidimensional model to take into account the complex conceptual challenges surrounding behavioral health outcomes research. A descriptive theoretical model using secondary data was used. Composite indices were developed for five model variables: Consumer Participation in Treatment Planning, Consumer Perception of Access, Consumer Perception of Quality and Appropriateness (affective response), Consumer Perception of Quality and Appropriateness (staff support), and Level of Functioning. Eight hypothesized positive predictor and three unhypothesized negative predictor relationships were supported. Three hypothesized positive predictor relationships were not supported. Consumer participation in treatment planning, the intervention of interest in this study had an effect (either direct or indirect) on all five outcome variables.

APPENDIX A

Adult Consumer Perception Survey



Planning & Research Department
4575 East Broadway
Tucson, Arizona 85711

Switchboard: 520/325-4268
FAX: 520/318-6935

Dear Consumer

CPSA is conducting a survey of individuals receiving behavioral health services in Pima, Cochise, Graham, Greenlee and Santa Cruz Counties.

The survey is designed to get an idea how the customers who have used our services feel about the services they have received, and whether those services are making a difference in their life. For this survey to be successful, we need your cooperation – so please complete the enclosed form and return it in the self-addressed, stamped envelope as soon as possible. And be assured that your responses are confidential and will be clumped with the Responses of 600 other individuals who are receiving the survey.

As you can see, for most of the items on the survey, you are asked to rate your agreement or disagreement with statements about our services. A final item allows you to give us your own comments.

Thank you for taking the time to fill out and return the survey promptly. We appreciate your help and input. If you have any questions regarding this survey, please contact Carla Proaño at 325-4268 or 1-800-959-1063.

Sincerely,

Noel Gonzalez, Ph.D., NCC, CPHQ
Director, Performance Improvement and Quality Management
Community Partnership of Southern Arizona



Mental Health
Association
of Arizona

Michael Silver, M.S.H.A.
President, Board of Directors

Cheryl Collier Becker
Executive Director

March 13, 2001

Dear Friends:

In our effort to effect positive changes in the current behavioral health service delivery system, the Mental Health Association of Arizona together with the Arizona Department of Health Services, Division of Behavioral Health Services, are jointly seeking your participation in the enclosed consumer survey.

The survey asks about you or your child's experience with the mental health and substance abuse service system as well as your thoughts of how these services have helped you or your child's daily activities. Your responses will be confidential and remain anonymous. Although a code has been included in the survey, it will solely be used for tracking duplicate responses.

Please take a few minutes to respond to the survey questions to the best of your knowledge. I would also like to encourage you to say a few words about how you feel changes should be made.

Thank you for your participation and unwavering support to help improve the service system. Please feel free to call the Mental Health Association of Arizona if we can be of help to you or your family.

Sincerely,

A handwritten signature in cursive script that reads "Cheryl Collier".

Cheryl Collier
Executive Director



28403

2001 STATEWIDE ADULT CLIENT PERCEPTION SURVEY

[To be completed by RBHA]	
RBHA ID:	Survey Tracking Number:
Facility ID:	Name of Service Agency:
Telemedicine:	Program:
	Entitlement Status (as of 10/01/00 i.e. TXIX, TXXI or Non- TXIX/TXXI)

(English version)

Please help us improve our program by answering a few questions about the services you are currently receiving or have received. We are interested in your honest opinion. All responses are confidential. Your current and/or future services will not be affected because of your participation in this survey.

After you have completed the survey, please fold and return it in the attached envelope before April 30, 2001

Thank you

*Please fill in the blank or check your answer to the following questions:
PLEASE USE PEN OR PENCIL*

Information about the Person Receiving Services:

Age

Sex Male Female

Race White Black Asian Native-American Other

Ethnicity Hispanic Not Hispanic or Latino

Person Completing This Survey Is:

- The person who is directly receiving services
 Other Parent/Guardian Friend Relative (Uncle, Aunt, Cousin, Grandparent, etc.)

Please continue to answer questions on the next page.



28403

PART II. Please mark your answer by filling in the bubbles completely.

1. I like the services that I received here.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

2. If I had other choices, I would still get services from this agency.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

3. I would recommend this agency to a friend or a family member.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

4. The location of services was convenient (parking, public transportation, distance, etc.).

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

5. Staff were willing to see me as often as I felt was necessary.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

6. Staff returned my calls within 24 hours.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

7. Services were available at times that were good for me.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

8. I was able to get all my services I thought I needed.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

9. I was able to see a psychiatrist when I wanted to.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

10. Staff here believe I can grow, change, and recover.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

11. I felt comfortable asking questions about my treatment medication.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

12. I felt free to complain.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

13. I was given information about my rights.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

14. Staff encouraged me to take responsibility for how I live my life.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

Please continue to answer questions on the next page.



28403

15. Staff told me what side effects to watch out for.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

16. Staff respected my wishes about who is and who is not, to be given information about my treatment.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

17. I, not staff, decided my treatment goals.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

18. Staff were sensitive to my cultural background (race, religion, language, etc.).

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

19. Staff helped me obtain the information I needed so that I could take charge of managing my illness.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

20. I was encouraged to use consumer-run programs (support groups, drop-in centers, crisis phone line, etc.).

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

21. I deal more effectively with daily problems.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

22. I am better able to control my life.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

23. I am better able to deal with crisis.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

24. I am getting along better with my family.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

25. I do better in social situations.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

26. I do better in school and/or work.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

27. My housing situation has improved.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

28. My symptoms are not bothering me as much.

Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

Please continue to answer questions on the next page.



PART III. Please mark your answer by filling in the bubbles completely.

1. In the last year, did you see a doctor or nurse in a hospital emergency room?

- Yes No Do not remember

2. In the last year, other than going to a hospital emergency room, did you see a doctor or nurse for a health check-up, physical exam or because you were sick?

- Yes No Do not remember

3. Developing my service/treatment plan was a useful experience.

- Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

4. My service/treatment plan has been useful in achieving my treatment goals.

- Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

5. My service/treatment plan deals with the problems that are bothering me.

- Strongly Agree Agree I am Neutral Disagree Strongly Disagree Not Applicable

PART IV. Please use the space below to write any other comments or suggestions you have. PLEASE PRINT.

**THANK YOU FOR YOUR COOPERATION
AND TIME IN COMPLETING THIS SURVEY!!!**



Planning & Research Department
4575 East Broadway
Tucson, Arizona 85711

Switchboard: 520/325-4268
FAX: 520/318-6935

Estimado Cliente

CPSA está conduciendo un estudio de satisfacción para individuos quienes están recibiendo servicios de salud mental en los condados de Pima, Graham, Greenlee y Santa Cruz.

Este estudio fue diseñado para poder saber como se sienten los clientes quienes han usado nuestros servicios de salud mental sobre esos servicios y si sienten que estos servicios le han hecho una diferencia en sus vidas. Para que este estudio sea eficaz, necesitamos su cooperación, así es, que por favor tome unos momentos en llenar la forma que sigue y enviarla en el sobre estampillado lo mas pronto posible. Se le asegura que sus respuestas serán confidenciales y solo se usarán en forma agregada junto con las otras 600 respuestas de otros individuos cuales también han recibido esta forma.

Como ve, para muchas de las preguntas en la forma, le preguntamos que indique con un número cuanto Ud. está de acuerdo o desacuerdo con lo dicho en sobre los servicios de salud mental. Una pregunta final le permite ha Ud. darnos sus comentarios.

Muchas gracias por tomar el tiempo en llenar y regresar pronto esta forma. Le agradecemos su ayuda y sus sugerencias. Si acaso tiene algunas preguntas sobre este estudio, por favor, llámele a Carla Proaño al 325-4268 o 1-800-959-1063.

Sinceramente,

Noel C. González, Ph.D., NCC, CPHQ
Director, Performance Improvement and Quality Management
Community Partnership of Southern Arizona



**Mental Health
Association
of Arizona**

Michael Silver, M.S.H.A.
President, Board of Directors

Cheryl Collier Becker
Executive Director

Estimados Amigos

En nuestro esfuerzo de efectuar cambios positivos en el actual sistema de salud mental, la Asociación de Salud Mental de Arizona junto con el Departamento de Salud del Estado de Arizona/División de Salud Mental buscan su participación en la encuesta de servicios que acompaña esta carta.

En esta encuesta se le pregunta sobre su o su hijos experiencia con el sistema de servicios de salud mental y tratamiento para el abuso de sustancias y drogas, incluyendo sus pensamientos de como estos servicios le han ayudado en su vida cotidiana. Sus respuestas son confidenciales y se mantendrán anónimas. Se ha incluido un código en la encuesta que se usará solamente para localizar respuestas repetidas.

Por favor, tome unos minutos y conteste las preguntas de la encuesta dandonos su opinión honesta. También me gustaría animarle a que comparta su opinión, en sus propias palabras, sobre los cambios que se deberían hacer.

Favor llame a la Asociación de Salud Mental en Arizona (Mental Health Association), sí a usted o a su familia le podemos ayudar.

Gracias mil por su participación y por su apoyo firme para mejorar el sistema de servicios.

Sinceramente,

Cheryl Collier
Executive Director



A United Way
Primary Partner Agency

6411 East Thomas Road • Scottsdale, AZ 85251 • 480-994-4407 • 800-MHA-9277 • Fax: 480-994-4744

An affiliate of the National Mental Health Association • A 501(c)(3) non-profit organization serving Arizona since 1954

**2001 ENCUESTA ESTATAL DE PERCEPCIÓN DE
CLIENTES ADULTOS**

6185

(Antes de empezar con la encuesta, esta sección de la forma debe ser completada por el personal de la Asociación
Regional de Salud Mental (RBHA) por sus sitios en inglés)

(To be completed by RBHA)

RBHA ID:	Survey Tracking Number:
Facility ID:	Name of Service Agency:
Telemedicine:	Program:
	Entitlement Status (as of 10/01/00 i.e. TXIX, TXXI or Non- TXIX/TXXI)

(Spanish version)

Por favor ayúdenos a mejorar nuestro programa al contestar unas pocas preguntas con respecto a los servicios que está recibiendo actualmente. Estamos interesados en su opinión honesta. Todas las respuestas son confidenciales. Sus servicios actuales y futuros no se verán afectados por su participación en esta encuesta.

Cuando termine de llenar la encuesta, por favor dóblela y devuélvala en el sobre adjunto antes de
Abril 30, 2001

Gracias

Llene los espacios en blanco o marque sus respuesta a las siguientes preguntas:

Información sobre la Persona que Recibe Servicios:

Edad Sexo Masculino Femenino Raza Anglo-Sajón Negro Asiático Nativo-Americano OtroEtnicidad Hispano No Hispano o Latino**La Persona que Completa esta Encuesta es:** La persona que está recibiendo los servicios directamente Otro Padre/Tutor Amigo/a Familia (Tío, Tía, Primo, Abuelo, etc)

Por favor, continúe contestando las preguntas en la próxima página.



6185

Parte II. Por favor, marque su respuesta llenando los círculos totalmente

1. Me gustan los servicios que he recibido aquí.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

2. Si tuviera más opciones, yo seguiría recibiendo servicios en esta agencia.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

3. Yo recomendaría esta agencia a un/a amigo/a o un miembro de la familia.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

4. La localidad de los servicios es conveniente (estacionamiento, transporte público, distancia, etc)
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

5. El personal estaba dispuesto a verme tan seguido como fuera necesario.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

6. El personal me regresó la llamada en 24 horas.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

7. Los servicios estaban disponibles a las horas que eran conveniente para mí.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

8. Recibí todos los servicios que necesitaba.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

9. Pude ver al psiquiatra cuando quería.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

10. El personal aquí cree que yo puedo crecer, cumplir y recuperarme.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

11. Me sentí a gusto al preguntar sobre mis medicinas de tratamiento.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

12. Me sentí que podía quejarme.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

13. Me dieron información sobre mis derechos.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

14. El personal me animaron a tomar responsabilidad sobre como vivo mi vida.
 Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

Por favor, continúe contestando las preguntas en la próxima página.



6165

15. El personal me informaron cuales eran los efectos secundarios que deberia tener cuidado.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

16. El personal respetaron mis deseos de a quien/ quien no se le daria informacion sobre mi tratamiento.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

17. Yo, no el personal, decidí mis metas de tratamiento.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

18. El personal respetó mi tradiciones y cultura (raza, religion, lenguaje, etc.)

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

19. El personal me ayudó a obtener la informacion que necesitaba para que yo pueda hacerme cargo de dominar mi enfermedad.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

20. Me animaron a usar programas guiados por consumidores (grupos de apoyo, centros de visitas, lineas telefonicas de crisis, etc)

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

21. Puedo enfrentarme a mis problemas diarios, más efectivamente.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

22. Puedo controlar mejor mi vida.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

23. Puedo enfrentarme mucho mejor a las crisis.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

24. Me llevo mucho mejor con mi familia.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

25. Estoy mejor en situaciones sociales.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

26. Estoy mejor en la escuela y/o en el trabajo.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

27. Mi situación de vivienda ha mejorado.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

28. Mis síntomas no me han molestado mucho.

Si, definitivamente Si, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

Por favor, continúe contestando las preguntas en la próxima página.



8185

Parte III. Por favor marque sus respuestas llenando el círculo totalmente.

1. El año pasado ¿vió usted a un doctor o enfermera en la sala de emergencia de un hospital?

- Sí No No me acuerdo

2. El año pasado, no contando con su visita a la sala de emergencia, ¿vió usted a un doctor o enfermera para un examen de salud, examen físico o porque estaba enfermo/a?

- Sí No No me acuerdo

3. Desarrollar mi plan de servicio/tratamiento fue una experiencia de mucho beneficio.

- Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

4. Mi plan de servicio/tratamiento ha sido beneficioso en alcanzar la meta de mi tratamiento.

- Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

5. Mi plan de servicio/tratamiento está relacionado con los problemas que me molestan.

- Sí, definitivamente Sí, de acuerdo Neutral No estoy de acuerdo Definitivamente no No aplica

Parte IV. Por favor, use el siguiente espacio si tiene usted algún otro comentario o sugerencia.

**GRACIAS POR SU COOPERACIÓN
Y SU TIEMPO EN COMPLETAR ESTA ENCUESTA!!!**

APPENDIX B

Letter of Permission



Member Services, 800-771-9889

4575 E. Broadway • Tucson, Arizona 85711 • Administration 520-325-4268 or 800-959-1063 • Fax 520-318-6935

Building on community strength and spirit.

Dear Ms. Saewert:

You have permission to use quantitative data from the Community Partnership of Southern Arizona (CPSA) 2001 *Consumer Perception Survey* for your dissertation research, *Testing a Systems Research Model for Behavioral Health*. These data are to be kept confidential and to be used only by you for purposes of your dissertation research. You will not have access to any personal participant information. All participant personal identifiers have been removed from the data file. A copy of all publications that result from the use of these data is requested.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Berren", written over a horizontal line.

Michael Berren, Ph.D.
Director
System Development & Evaluation

Member Services: 800-771-9889 or 520-325-2093

The Community Partnership of Southern Arizona received funding from the Arizona Department of Health Services and the Substance Abuse and Mental Health Services Administration. An ADA/EEO/AA employer.

APPENDIX C

Human Subjects Approval

Human Subjects Protection Program
<http://www.hsb.arizona.edu>

THE UNIVERSITY OF
ARIZONA
TUCSON ARIZONA

1350 N. Vine Avenue
P.O. Box 245137
Tucson, AZ 85724-5137
(520) 626-6721

29 May 2003

Karen J. Saewert, Ph.D. Candidate
Joyce A. Verran, Ph.D.
College of Nursing, Room 429
PO BOX 210203

RE: TESTING A SYSTEMS RESEARCH ORGANIZING MODEL FOR BEHAVIORAL HEALTH

Dear Ms. Saewert:

We received documents concerning your above cited project. This study involves secondary analysis of existing data (to be provided by Community Partnership of Southern Arizona without personal identifiers). Therefore, regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101(b) (4)] exempt this type of research from review by our Institutional Review Board.

Exempt status is granted with the understanding that no further changes or additions will be made to the procedures followed (which we have on file) without the review and approval of the Human Subjects Committee and your College or Departmental Review Committee.

Thank you for informing us of your work. If you have any questions concerning the above, please contact this office.

Sincerely,



Rebecca Dahl, R.N., Ph.D.
Director
Human Subjects Protection Program

RD/js

cc: Departmental/College Review Committee

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