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Therapeutic Alliance: Development, Evaluation, and Application of the Kim Alliance Scale

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THERAPEUTIC ALLIANCE: DEVELOPMENT, EVALUATION, AND APPLICATION OF THE KIM ALLIANCE SCALE

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Abstract

The quality of therapeutic alliance between the patient and healthcare provider is a pivotal contributing factor toward optimal healthcare in the current context of rising healthcare costs, shorter hospital stays, and patient's rights. The availability of a well-designed and sound therapeutic alliance instrument can provide understanding and insight into improving the quality of healthcare. The purpose of this study was to develop a reliable and valid therapeutic alliance instrument, to evaluate its psychometric properties, and to explore its usefulness in predicting patient satisfaction. The retroductive triangulation method provided a framework for the development of the instrument, the Kim Alliance Scale (KAS). In a preliminary psychometric testing, a sample of 68 nurses evaluated their alliance with their own healthcare providers from their experiences as patients using a 48-item KAS. The testing resulted in a 30-item KAS having a reliability alpha of 0.94. Initial support was found for convergent and divergent validity. For the subsequent study in an outpatient clinic, data were collected from 297 adult patients. An exploratory principal component factor analysis with orthogonal varimax rotation was performed. The instrument was revised further into a 28-item KAS containing five factors: bonding, connecting, partnering, goal-setting, and alienating. The multidimensionality of the KAS was supported with correlation coefficients among the five factors ranging from 0.32 to 0.67. The internal consistency reliability was estimated with Cronbach's alpha of 0.94 and split-half alphas of 0.88 and 0.89. The convergent and divergent validity were supported. A combination of all the demographic variables accounted for 8 % of the variance in therapeutic alliance. None of the individual demographic variables reached statistical significance in

predicting therapeutic alliance. Therapeutic alliance accounted for 36.9 % of variance in the 4-item General Satisfaction subscale score and 46.5% of the variance in the 18-item Patient Satisfaction with Healthcare Provider Scale score. The KAS is a promising tool for assessing the quality of the therapeutic alliance and identifying the foci for nursing interventions.

DEDICATION

This work is dedicated to our Lord and Savior, Jesus Christ.

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CHAPTER 1

Introduction

The therapeutic alliance between patient and health care provider has become an important issue in the current health care environment. Tremendous advances have been made in biomedical technology, yet many people in America do not benefit from such advances because of poor or nonexistent therapeutic alliance with their health care providers. The cost of medical care has applied pressures that have resulted in early discharge of patients from hospitals, shorter visits with their health care providers, and patients having to manage their own health care in the community. Furthermore, as the American population ages, more patients with chronic illnesses are faced with long-term health problems, which require more self-care and life-style modifications. Thus the quality of the therapeutic alliance is a pivotal contributing factor toward optimal health care in the current context of consumer rights, patient protection, and quality assurance (Horvath, 2000; Krauss, 2000; Strickland & Strickland, 1996).

Therapeutic alliance has been recognized as an important factor that influenced patient health behaviors, such as adhering to the therapeutic regimen and making life-style modifications (Cameron, 1996; Keller & White, 1998). Therapeutic alliance is also known to be a major contributor to positive treatment outcomes and patient satisfaction (Anderson et al., 1995; Frank, Kupfer, & Siegel, 1995; Robinson, 1996).

> Therapeutic alliance is a dynamic interactional process in which patient and provider collaborate to carry out mutually negotiated health goals in a shared partnership (Cahill, 1996; Hummelvoll, 1996; Madden, 1990). For the patient, it is a transforming process from being a passive recipient of care to becoming an active participant in an equitable partnership (Hess, 1996; Wilson & Hobbs, 1995). (Kim, Boren, & Solem, 2001, p. 314-315)

Nevertheless, the characteristics, components, and mechanisms of the therapeutic alliance have not been clearly identified due to the complex and multidimensional concept. As a result, the term therapeutic alliance has been used interchangeably with the term compliance or adherence (Kyngas, Duffy, & Kroll, 2000; Simons, 1992). While the patient's compliance or adherence to medical regimen refers to an outcome of the patient-provider interaction, the therapeutic alliance refers to the interactional process between the provider and the patient (Barofsky, 1978; Cameron, 1996; Madden, 1990). These conceptual problems about therapeutic alliance have led to limitations in the existing alliance instruments.

Instrumentation Issues

Advancements in nursing research and practice require thorough methods of measuring nursing phenomena. The ability to measure the process or outcome of nursing practice helps to further develop and advance nursing as a profession. The measurement of therapeutic alliance, a significant nursing phenomenon, has been hindered in the past because of the conceptual and psychometric shortcomings of the existing instruments. The dynamic interactional process between the patient and health care provider has been ignored in the research to date (Kyngas, et al., 2000). Most of existing alliance

instruments have not met the minimal requirement as an established instruments. Norbeck (1985) proposed a minimum standard for publishing a report on instrument development and psychometric testing. The minimal standard included the conceptual basis for the tool, methods for item generation and refinement, and an acceptable level of reliability and validity.

Conceptual Issues

Most of the existing alliance instruments have been designed with certain limitations in the conceptualization of alliance. The instruments focused exclusively on the technical skills of the provider, lacked comprehensiveness in the dimensions of alliance, and had a bias toward the discipline of psychotherapy (Hatcher & Barends, 1996; Horvath & Greenberg, 1989; Marziali, Marmar, & Krupnick, 1981).

Many existing alliance instruments have focused on the provider's technical skills, attitudes, or behaviors, even though therapeutic alliance is a dynamic interactional process between patient and provider. The provider's skills of empathetic attitudes, communication skills, or developing negotiating tasks have been scrutinized in the existing alliance instruments. With such a strong emphasis on the provider, the patient's perspective of therapeutic alliance has been overlooked (Hatcher & Barends, 1996).

Limited components of alliance have been measured in many of the existing alliance instruments.

> [For example,] the Working Alliance Inventory (WAI) (Horvath & Greenberg, 1989) assesses the affective aspect of alliance, such as bonding between therapist and client, in addition to the working aspect of alliance, such as agreements on tasks and goals. The Penn Helping Alliance Scales (Alexander & Luborsky, 1986)

> measured two aspects of the helping alliance, which are perceived helpfulness of the therapist and the client's collaboration/ bonding with the therapist. The Therapeutic Alliance Scales (TAS) (Marziali et al., 1981) assess the attitudinal-affective aspect of the therapeutic alliance by examining the therapist's and the client's contribution to the development and maintenance of alliance. (Kim et al., 2001, p. 315)

The alliance instruments developed in the nursing discipline have tended to have an even narrower conceptual focus, such as empathy (Aiken and Aiken, 1973; Clay, 1984; Layton, 1979). The limited conceptualization of alliance in most alliance instruments resulted in gaps in the understanding of the complex patient-provider relationship.

> Among the many aspects of alliance, patient empowerment was shown to have a major impact on treatment outcomes in a randomized controlled study (Anderson et al., 1995). Nevertheless, the element of patient empowerment has been underrepresented in the existing alliance instruments. The recently published Agnew Relationship Measure (ARM) (Agnew-Davies et al., 1998) includes the client initiative subscale, which the authors suggested as a measure of empowerment. The four-item client initiative subscale, however, focus on whether the client takes the responsibility for the direction of psychotherapy sessions. (Kim et al., 2001, p. 315)

Although the nursing profession is the most influential profession affecting the patient-provider relationship and the patient's health behaviors, there is a dearth of studies of instruments that assess the patient-provider relationship in nursing research and practice. "Most of the existing tools for measuring therapeutic alliance ... have come from

the psychotherapy discipline and tend to focus on the interaction between therapist and the client" (Kim et al., 2001, p. 315) during psychotherapy sessions, which may not be compatible with the nursing perspective.

Psychometric Issues

It has been recommended that the development of a sound instrument should follow a systematic method for item generation and refinement (Jacobson, 1997; Norbeck, 1985). The items may be generated by the author alone or by a group of experts who have background knowledge regarding the concept to be measured (Waltz, Strickland, & Lenz, 1991). Most of the reported alliance instruments either failed to describe how the items were generated or did not use a systematic approach to item generation.

Jacobson (1997) found that many of the published instruments failed to report reliability or validity data (38% and 58%, respectively). Even when reliability and validity were reported, only partial information was published (Strickland, 1996). Of the alliance instruments available, only a few appear to be sufficiently reliable and valid (Agnew-Davies et al., 1998; Anderson & Dedrick, 1990; Horvath & Greenberg, 1989). Many of the published alliance instruments reported only the coefficient alpha as the measure of the internal consistency reliability rather than reporting more complete data (Agnew-Davies et al., 1998; Horvath & Greenberg, 1989; Marmar, Horowitz, Weiss, & Marziali, 1986). Others reported the internal consistency reliability that did not meet the minimum acceptable standard for new instrument (Layton, 1979; Forchuk & Brown, 1989). A new instrument is considered to be reliable if it meets the criteria of the coefficient alpha of $\geq$ 0.70, inter-item correlation of ≥ 0.25, and item-total correlation of ≥ 0.30 (Nunnally &

Bernstein, 1994).

Many of the therapeutic alliance instruments have two versions, one for the therapist and another for the client, which make the instruments unnecessarily bulky and cumbersome (Agnew-Davies et al., 1998; Horvath & Greenberg, 1989; Marmar et al., 1986). Horvath (2000) found that the client's perception was more predictive of the outcome when compared to the therapist's report or a third party evaluation of the quality of the therapeutic alliance. The best estimates of the alliance in the psychotherapy literature were based on the client's reports, followed by third party raters. The therapists' estimates were the least reliable. Therefore, it is necessary to measure the therapeutic alliance from the patient's perspective alone, which would make the instrument less cumbersome and more practical.

Statement of the Problem

The therapeutic alliance within the patient-provider relationship is a major contributor to positive treatment outcomes as well as patient satisfaction. Even though nursing is one of the most influential professions in the patient-provider relationship, there is a dearth of therapeutic alliance instrumentation studies from nursing profession. In addition, the existing alliance instruments fail to capture the comprehensive, multidimensional concept of therapeutic alliance and have reliability and validity issues. Therefore, there is a need to develop a valid and reliable instrument that measures the quality of the therapeutic alliance between the patient and the health care provider, which can be utilized in the nursing practice as well as in other healing relationships.

Many of the therapeutic alliance instruments have not been tested against outcome measures, such as patient satisfaction. Furthermore, most of those studies that have

explored the influence of patient-provider relationship on patient satisfaction did not utilize reliable and valid instruments. Therefore, there is a need to advance the field of therapeutic alliance studies to a more rigorous and scientific standard.

Statement of the Purpose

The purpose of this study was to develop a reliable and valid therapeutic alliance instrument, to evaluate its psychometric properties, and to explore its usefulness in predicting an outcome measure. This study included Study I and Study II. In Study I, the development and the preliminary psychometric testing of the Kim Alliance Scale (KAS) were completed. Further psychometric evaluation of the KAS and exploration of its usefulness in predicting patient satisfaction as an outcome measure were the purpose of Study II. The KAS instrument was designed to measure the quality of the therapeutic alliance including a patient empowerment dimension from the patient's perspective. The instrument was also designed for use in multiple health care disciplines.

The development and testing of the instrument were guided by the retroductive triangulation method (Quayhagen & Quayhagen, 1988). The retroductive triangulation used in Study I included six steps: (a) a deductive process of literature review; (b) an inductive triangulation from a qualitative study; (c) the formation of a conceptual schema; (d) the development of the instrument based on the conceptual schema; (e) the psychometric evaluation of the instrument; and (f) instrument revision.

The specific aims of this study were to develop a therapeutic alliance instrument, KAS, that captures the multidimensional concept of therapeutic alliance, including the empowerment dimension; to perform preliminary reliability and construct validity testing of the KAS; to perform further reliability and construct validity testing in a clinical

setting; and to explore the usefulness of KAS as a predictor variable for patient satisfaction in a clinical setting.

Significance to Nursing

So much of nursing research and practice depend on accurate measurements of nursing phenomena. In contrast to tangible phenomena such as the patient's temperature or blood pressure, the therapeutic alliance between the patient and the provider is abstract and difficult to measure (Strickland, 1999). Traditional nursing research regarding the patient-provider relationship has over-emphasized the characteristics of the patient, the provider, or health outcomes. The dynamic patient-provider interactional process has not been adequately addressed. This has resulted in gaps in understanding the process and has limited the clinical interventions for improving patient care (Carter & Kulbok, 1995). Hence, the availability of a reliable and valid alliance instrument would advance the existing body of nursing knowledge.

This study can serve as a springboard for further nursing research. There is a significant association between the therapeutic relationship and outcome measures, such as the nurse's professional satisfaction, the client's perception of the quality of the care, the client's satisfaction with care, and treatment outcomes (Anderson et al., 1995; Fosbinder, 1994; Frank et al., 1995; Ramos, 1992). Examining the relationship between therapeutic alliance and patient satisfaction using the KAS can lead to further nursing research that assesses the influence of therapeutic alliance on other outcome measures. The availability of a reliable and valid alliance instrument suitable for use in nursing profession can be an impetus for novel interventions that may improve outcomes.

The paradigm of nursing practice has shifted from disease-oriented practice to an

illness prevention and health maintenance orientation. In the current rapidly changing health care environment, the therapeutic alliance is a crucial factor in assisting patients to maintain and promote health and prevent disease. A reliable and valid alliance instrument would help practicing nurses to assess the quality of the therapeutic alliance, and enable the nurses to provide effective intervention to help patients manage their own health problems.

Summary

This chapter has addressed the importance of the therapeutic alliance in current health care setting. Because of the conceptual and psychometric issues in the existing alliance instruments, there was a need to develop a valid and reliable alliance instrument including the patient empowerment dimension. The retroductive triangulation was introduced as a methodology for the instrument development and testing of a newly developed instrument. The availability of the well-designed and sound therapeutic alliance instrument can provide understanding and insights into the patient-provider relationship and can improve the quality of health care.

CHAPTER 2

Review of the Literature

The concept of therapeutic alliance has received the increased attention in the health care environment. The paradigm shift from a disease-oriented practice to illness prevention and maintenance of healthy lifestyles has magnified the importance of developing a therapeutic alliance between the patient and the provider. The establishment of the therapeutic relationship has been considered to be the one of the most urgent tasks in the beginning of health care management (Horvath, 2000). This chapter will discuss the historical background of the therapeutic alliance concept, influencing variables, and outcomes associated with therapeutic alliance.

Therapeutic Alliance as a Concept

Therapeutic alliance is a dynamic interactional process between the patient and the provider. Barofsky (1978) distinguished the therapeutic alliance concept from the terms such as compliance, adherence, and self-care in the continuum of social control in the patient-provider relationship. Compliance implies that the patient is coerced into following the recommended tasks, while self-care means that patient is active in making his or her own decisions. The term adherence refers to the patient who follows the recommended course of treatment. Adherence is at the midpoint in the concept of social control. It is in this continuum that the patient's perception of control can assist in forming an alliance with the provider. Within the alliance, the patient can negotiate the

degree of involvement he or she chooses regarding decision making. Thus, the therapeutic alliance is an interactional process between patient and provider, and reflects the quality of the patient-provider relationship (Cameron, 1996; Madden, 1990).

A Paradigm Shift

Hildegard Peplau introduced the concept of a therapeutic nurse-client relationship in 1952. Peplau recognized this therapeutic relationship between the nurse and the client as the essence or crux of nursing (Forchuk, 1991; Forchuk, 1994; Forchuk, 1995; Hummelvoll, 1996). Peplau's equal emphasis on the importance of the nurse as well as the client initiated the paradigm shift from other major nursing theories that focused primarily on the client. She defined nursing as the enabling, empowering, and transforming art that involves the growth of both the nurse and the client (Peplau, 1988). She interpreted the nurse-client relationship as the specific interpersonal relationship that evolves between the nurse and the client. Peplau identified three overlapping phases in the interpersonal process: orientation, working, and resolution phases. She also recognized the importance of communication during the development of the interpersonal process occurring between the nurse and the client. Peplau's main contribution to nursing was the emphasis on the interactional process as an influential factor in the outcome of the client. As a result, Peplau's comprehension of the therapeutic relationship contributed to improving the care of clients, especially in the psychiatric nursing profession (Hummelvoll, 1996; Krauss, 2000).

The concept of an ideal physician-patient relationship, recognized as the cornerstone for maintaining and improving health, has evolved over time (Emanuel & Dubler, 1995). As the field of biomedical ethics has grown, there has been a dramatic

change in the physician-patient interaction from the traditional medical paternalism to patient autonomy. The respect for patient autonomy has been accepted as a core aspect of the ideal physician-patient relationships in the current health care environment. The attitudinal change of physician's revealing of a poor diagnosis to the patient has reflected these changes. In 1961, only 12% of physician told patients that the diagnosis was cancer, whereas in 1979, 90% of physicians did (Novack et al., 1979). Emanuel and Emanuel (1992) identified the characteristics of the ideal physician-patient relationship, which combined the patient's autonomy, the physician's caring, and a discussion of patient's values in health-related issues. Patient autonomy does not constitute the patient's ability to have control over medical decisions, but it requires the patient's ability to critically assess his or her own values and to make judgments. The physician, who has been long perceived as counselor and friend, should be able to persuade the patient to follow the desired course of treatment. In the ideal relationship, the therapeutic alliance refers to the caring, empathetic communication skills that the physician uses to assess the patient's problems, to educate the patient, and to promote adherence to the management plan (Frank et al., 1995).

The study of the therapeutic relationship between the therapist and the client has a long tradition in the psychotherapy. The terms, therapeutic alliance, working alliance, and helping alliance, have been used loosely in the psychotherapy discipline. Some researchers have used the terms to refer to specific aspects of alliance, while others have used the terms as synonyms for alliance itself. Therefore, there has been a variety of ways to conceptualize the therapeutic alliance in the psychotherapy. The psychodynamic origins of the concept highlights the client's attachment to therapist, while the behavioral

therapy concept focuses on the role of therapist's techniques. The client-centered concept underscores the condition of the relationship, such as empathy and acceptance (Horvath & Luborsky, 1993; Horvath, 2000). In the1970s the pan-theoretical concept of alliance appeared in the literature that defined the concept of alliance in a broader way. Bordin's (1976) pan-theoretical concept of alliance, that embraces both the therapist's techniques and the condition of the relationship, has been widely accepted (Horvath, 2000). Bordin's concept of alliance included agreement and collaboration between therapist and client, which is a bi-directional relationship. The concept of the client's active participation in the decision-making as the collaborative partner was emphasized as the core of the therapeutic relationship.

If the therapeutic relationship is a complex interpersonal phenomenon, then what are the specific characteristics of patient and provider that influence the quality of the therapeutic alliance? What are the outcome measures of the quality of the therapeutic alliance? There are numerous contributing factors from the patient and provider. Psychosocial factors as well as demographic factors that influence the relationship have been identified. Because of the complexity of the concept of therapeutic alliance, only demographic factors will be discussed in this chapter.

Studies of Therapeutic Alliance

In a meta-analysis of 41 studies by Hall, Roter, & Katz (1988), the relationship between the therapeutic behaviors of the provider were correlated with the patient's and the provider's background variables. The provider behaviors were grouped into the categories of information giving, questions, competence, partnership building, and socio-emotional behaviors. The outcome variables that occurred most frequently were patient

satisfaction, recall, and compliance. The most common patient background variables were gender, age, and social class. It was found that female patients received more information, more partnership building, and more positive talks than male patients. Older patients received more information, more communication, and more courtesy than did the younger patients. The patients' social class was measured by social class indices such as income, or education. The patients from the higher social classes received more information, a higher quality of care, more positive talks, and overall communication. Caucasians received a higher quality of care in the technical, as well as the interpersonal aspects, than did other ethnic minority groups. When compared to physicians, nurses were found to give more information, a higher quality of care, more positive talks, and more overall communication. In addition, patient satisfaction was also positively related to interpersonal competence, more partnership building, more positive behaviors, and more communication of all of the providers. In this comprehensive meta-analysis by Hall et al. (1988), the quality of the therapeutic alliance was related to many provider and patient characteristics as well as patient satisfaction.

Murphy and Clark (1993) studied 18 nurses to explore their experience in caring for ethnic minority clients. The findings suggested that the nurses were unable to develop a therapeutic relationship because of the difficulties involved in communication and a lack of cultural knowledge. Race and social class were also identified as barriers to the quality of patient-provider interactions in a study by Strickland and Strickland (1996). Their exploratory study consisted of 281 low-income African-American households. There were six focus groups and 20 in-depth interviews. The findings suggested that there are deficiencies in the communication skills necessary for building a partnership between

low-income patients and their health care providers. The authors suggested that damaging stereotypes of the poor and minority patients could affect the providers in a negative way when providing information to the patients, eliciting the patient's perspectives, and addressing health promotion issues.

The barriers that may negatively affect the physician in developing a therapeutic relationship were identified as a lack of knowledge regarding methods of intervention and the lack of communication skills needed for patient education and counseling. The provider's attitude and beliefs were also considered to be negative factors that could impede development of a therapeutic alliance. The disease-oriented biomedical approach and the provider-centered paternalistic orientation also affected their beliefs. The provider's knowledge of the need to provide adequate visit time with the patient was identified as an enabling factor. The educational level of the providers does not appear to directly influence their ability to form a good therapeutic relationship (Goldstein, DePue, Kazura, & Niaura, 1998).

Roter and Hall (1998) indicated that the gender of the provider was important in establishing the therapeutic relationship. They suggested that the female physicians were more likely to use communication techniques related to fostering collaboration and partnership needed for the developing the therapeutic relationship. It was found that female physicians used more partnership statements when compared to male physicians, which facilitated patient participation. Female physicians also engaged in more psychosocial counseling with their patients. The female physicians used more statements of empathy, which focused on the patients' feelings and emotion. The female physicians' behaviors reflected collaboration by using fewer dominant verbal statements, resulting in

patients' feeling freer to talk to female physicians.

The specialty of the physician's practice also mattered in the communication skills used in the physician-patient interaction. The physicians who practiced in the field of women's health were found to demonstrate more verbal attentiveness and warmth while providing more medical information than physicians practicing in a broader health care setting (Brink-Muinen, Bensing, & Kerssens, 1998).

The health care provider type has been shown to make a difference in the interaction with the patients as well as patient outcomes (Bear & Bowers, 1998; Mundinger et al., 2000). The comparative effectiveness of care between the nurse practitioners and the physicians has been examined. It has been argued that the interactional activities of nurse practitioners, such as therapeutic listening, client education, or goal setting with patients, were underrepresented in most of the studies. Most of studies focused on the cure aspects of the role rather than the therapeutic alliance (Bear & Bowers, 1998). However, in a randomized trial of 1316 people, Mundinger et al. (2000) found that there was no difference in the quality of the patient-provider relationship between nurse practitioners and physicians. The patient-provider relationship measures, such as technical skill, personal manner, and time spent with patient, were assessed as well as the communication factors. No significant statistical difference was found between nurse practitioners and physicians in patient outcome measures, such as the patient's health status, satisfaction, or service utilization.

The quantity of the interactions was another influencing factor of the relationship. The building of a good quality therapeutic alliance should be established in the early phase of the patient-provider interaction. It required at least 3 to 5 visits to form a quality

relationship (Horvath, 2000). However, if a good working therapeutic relationship was not established in the first 6 months, therapeutic alliance was not likely to be established at all (Forchuk, 1995).

The Positive Impact of Therapeutic Alliance

The positive outcomes of forming a quality therapeutic alliance included improvements in the patient's satisfaction and the patient's health status. Patient satisfaction refers to the patients' perspective of the quality of health care they receive. It has been demonstrated that there is a positive relationship between the therapeutic relationship and the patient satisfaction. The positive patient outcomes were identified with the patient's sense of well being, satisfaction with their care, and better treatment outcomes. A phenomenological research study was conducted with six adolescents in a psychiatric unit to explore their experience of feeling accepted by the nurses (Weissman & Appleton, 1995). Families and peers emphasized the aspects of acceptance in providing nursing care to these adolescents who were struggling with feelings of rejection. The three essential themes emerged about their experience of acceptance: the development of a friendship, a sense of well being, and the feeling of comfort. The findings of the study suggested that the development of a therapeutic relationship, by creating an understanding and acceptance, is a core aspect of nursing practice and it promotes the clients' sense of well being and security.

The results of a study by Bertakis, Roter, and Putnam (1991) showed that there was a significant correlation between the patient satisfaction and the physician's communication style. In the study of 550 adult patients with chronic diseases, the patient's satisfaction was higher when patients were encouraged to talk about their

psychosocial issues.

It was important to recognize the patient's perspectives on the quality of their health care. It was noted that the patient's perception of good quality nursing care was closely related to the interpersonal skills of the nurse (Fosbinder, 1994; Radwin & Alster, 1999; Radwin, 2000). A grounded theory study was conducted to identify the attributes and outcomes of quality nursing care from the patients' perspectives among 22 oncology patients (Radwin & Alster, 1999; Radwin, 2000). They reported that nursing care was considered to be excellent when nurses were knowledgeable, attentive, established rapport, provided individualized care, and treated patients as partners. The patients' positive perception of nursing care positively affected patient outcomes such as a sense of well being and increased fortitude while undergoing chemotherapy treatments. These findings supported the direct association between the attributes of quality nursing care and the desired patient outcomes.

Fosbinder (1994) studied 40 patients and 12 nurses to identify the patients' perspectives about the important characteristics of nurses in the nurse-patient interaction. The four emerging themes were translating the medical terms, getting to know each other, establishing trust, and going the extra mile. The author referred to these themes as the interpersonal competence of the nurses. These research findings defined the patients' perception of the interpersonal skills of nurses as more important than the nursing tasks. Fosbinder (1994) also suggested that the dynamic and reciprocal nature of interpersonal competence was an imperative for patient satisfaction and evaluating quality care. Oermann (1999), interviewing consumers from the community, found that high quality health care was described as having competent and skilled providers. The author also

identified high quality nursing care as having nurses who demonstrated caring behaviors, competent skills, and effective communicating. Thus, patient satisfaction is influenced by the patients' perception of the quality of health care.

Oermann and Templin (2000) conducted an exploratory study of 239 consumers to identify the important attributes of quality health care and quality nursing care. Quality health care included the quality of the medical care, teaching by nurse, the provider's competence, the choice of who the provider was, nurse-patient interaction, and the convenience of the appointment time. The most important indicators for the quality of health care were getting better and being cared for by a knowledgeable physician who kept up with changes in the medical field. The most important indicators for quality nursing care were being care for by knowledgeable nurses who were well informed and being able to communicate with the nurses. Statistical differences were noted based on the race, age, and years of education of the patient. African-Americans considered teaching by nurse to be more important than did the Caucasians. The younger patients reported the choice of provider to be a more important indicator of quality health care than the older population. Consumers with less education considered teaching by nurses to be an important indicator of quality health care. These study findings emphasized the fact that patient education was an important nursing task and an important indicator for quality health care as well as quality nursing care.

Campanella, Campanella, and Grayson (2000) explored the factors affecting patient satisfaction with a sample of 534 patients. They identified the interpersonal aspects of care as indicators for patient satisfaction, such as treating patients with courtesy, paying attention to the patient's needs, and taking the patient's concerns

seriously. These interpersonal skills refer to the interactional process of therapeutic alliance. However, demographic variables such as age and sex were not found to influence patient satisfaction. The research findings of Weiss (1988) regarding patient satisfaction and demographic information were inconsistent when linked to characteristics, such as sex, age, and race.

In addition to the positive effects on patient satisfaction and the quality of therapeutic alliance, there was a positive relationship between therapeutic alliance and the patient's health status. Additional studies reported a positive therapeutic alliance with the nurse promoted greater adherence to the patient's therapeutic regimen. Radwin and Alster (1999), in a study of 22 oncology patients, found that the patient's willingness to undergo chemotherapy was positively associated with the quality of therapeutic alliance with the nurses. In 289 adolescent diabetic patients, the degree of compliance with their diabetic regimen was highly correlated ($p < 0.001$) with receiving support from their nurses and physicians (Kyngas, 2000). In a randomized, controlled trial of 64 diabetic patients, the group receiving the patient-empowerment educational program improved significantly in the areas of self-efficacy, their attitude toward diabetes, and blood glucose control (Anderson et al., 1995).

In another randomized study, the therapeutic relationship once again influenced a positive outcome (Redelmeier, Molin, & Tibshirani,1995). Redelmeier et al. studied 133 homeless adults and found a significantly lower rate of return visits to the emergency department among the homeless adults who received the compassionate care when compared to those who did not experience a sense of compassionate care (0.43 vs. 0.65, respectively, $p < 0.05$). The study by Frank et al. (1995) showed a strong positive

association between the treatment outcome and the therapeutic alliance in a group of patients with mood disorders. In a 3 year trial in an outpatient setting, where patients' active participation was encouraged, there was a lower rate of patient-dropout (< 10%) and a higher rate of medication compliance (> 85%).

Summary

This chapter has discussed the historical background of the concept of therapeutic alliance, influencing variables, and outcomes of therapeutic alliance. Therapeutic alliance has been identified in relationship to demographic variables and patient outcomes. The demographic variables influencing therapeutic alliance included the gender of the patient and the provider, as well as the social class, educational level, ethnicity, of the patient. There was a positive relationship between therapeutic alliance and patient satisfaction, the patient's perception of the quality of their health care, and the patient's health status. A critical review of the theoretical and empirical literature regarding the concept of the therapeutic alliance will be included in the next chapter as a part of development of the Kim Alliance Scale.

CHAPTER 3

Retroductive Triangulation

The process of retroductive triangulation, proposed by Quayhagen & Quayhagen (1988), provided a basis for the conceptualization and construction in developing a new instrument. Retroductive triangulation method was synthesized from retroductive theory (Schrag, 1967), the triangulation process (Denzin, 1978), and Quayhagens' measurement research (Quayhagen & Quayhagen, 1982). The logical process of retroductive triangulation has proven to be a systematic theory-derived method for the development of an instrument (Carrigg & Weber, 1997; Klakovich, 1995).

Retroduction refers to a strategy that combines deductive and inductive methods into a logical and sequential way for theory development. Retroduction minimizes the limitations of either the inductive or deductive method through successive approximations that align assumptions and concepts of theories that are closer to the evidence while keeping logical deductive consistency (Fawcett & Downs, 1992). Triangulation is a navigational, as well as a mathematical, term whereby an unknown point is located from two known points by forming a triangle. Likewise, triangulation in the research process has been used to combine multiple methods or perspectives to depict the phenomenon more accurately (Polit & Hungler, 1997; Mitchell, 1986; Morgan, 1998; Sandelowski, 1995). The purpose of triangulation method is to enhance, compliment, and elaborate the findings of one perspective with findings from other perspectives by

converging them. Thus, it assists in cross-validating information with another and in sorting out erroneous information.

The retroductive triangulation of Study I included six steps: (a) a deductive process of a review of pertinent literature; (b) an inductive triangulation from a qualitative study; (c) the formation of a conceptual schema; (d) the development of the instrument based on the conceptual schema; (e) the psychometric evaluation of the instrument; and (f) instrument revision.

Deductive Process of the Literature Review

The deductive process is the first step in the retroductive triangulation (Quayhagen & Quayhagen, 1988). It includes a critical analysis of the theoretical and empirical literature from multiple disciplines to identify measured and unmeasured dimensions of the concept. The theoretical literature is triangulated to identify the unmeasured dimensions of the concept. The empirical instrument literature is triangulated in a similar manner to identify the measured dimensions of the concept that had already been studied.

Critical Analysis of Theoretical Literature

The therapeutic alliance refers to the interpersonal relationship between the patient and health care provider with a common interest of improving the patient's health (Krauss, 2000; Madden, 1990). Thus, the realm of the literature review in this study was limited to the healing relationship in the disciplines of nursing, medicine, and psychotherapy. The purpose of the critical analysis of theoretical literature was to identify the unmeasured dimensions of the therapeutic alliance.

Theoretical nursing literature

Therapeutic alliance has been defined as a process where both patient and provider are working together toward the goal of developing optimal health behaviors, which are mutually negotiated in a supportive and equitable relationship (Madden, 1990). Madden categorized therapeutic alliance into two aspects: the helping aspect and the working aspect. The helping or supportive aspect refers to the elements that are needed in the formation of the therapeutic relationship. The helping elements are warmth, hopefulness, acceptance, patient-centered care, empathic and genuine listening, and trust. The working aspect addresses the patient's growing sense of mastery of tasks while negotiating the goals and activities with the professional expert.

Patient collaboration or participation is a characteristic of the working aspect of the therapeutic alliance (Cahill, 1996; Henson, 1997; Madden, 1990; Oda, O'Grady, & Strauss, 1994). "Patient collaboration or participation in the plan of care is one of the most commonly cited components of the alliance. Patient collaboration refers to working together with a provider in pursuing mutually negotiated goals" (Kim et al., 2001, p. 316-317). The major underlying attributes of collaboration have been identified as negotiation, mutuality, and respect (Oda et al., 1994). Negotiation is a reciprocal discussion to find the common ground between two parties during an interaction to reach mutually agreed upon goals and activities. During the negotiating process, it is important for both parties to understand that the give and take of mutuality exits. Mutuality is a balance of confidence, respect, and trust (Curley, 1997; Henson, 1997). Patient participation means that the patient is allowed to be involved in the decision-making process with shared responsibility and power (Cahill, 1996). It indicates the patient's

active role in performing health behaviors for the purpose of health maintenance, health promotion, disease prevention, and the treatment of illness. Collaboration and active participation contribute to building a sense of deep commitment in the patient toward the therapeutic process, with a feeling of shared power and authority (Pieranunzi, 1997).

Patient empowerment arises naturally from collaboration. Rodwell (1996) defined empowerment as the helping process where the notion of partnership exists with respect toward each other so that the power distribution results in a freedom to make choices and accept responsibilities. "Patient empowerment process involves power sharing and mutual decision making between the provider and the patient" (Kim et al., 2001, p. 317). The process of empowerment eventually encourages patient autonomy in decision-making and patient participation in self-care by increasing his or her confidence and self-efficacy (Buchmann, 1997). The consequence of empowerment was noted to contribute to a person's positive self-esteem, the ability to set and reach goals, a sense of personal control, and a sense of hope.

The therapeutic alliance is also perceived as a therapeutic partnership, which indicates the sharing of power in the decision-making process between the nurse and the patient (Wilson & Hobbs, 1995). Strickland and Strickland (1996) explained that a positive patient-provider partnership is an indicator of the good quality of the therapeutic interaction and can be enhanced through communication and patient empowerment. By encouraging the patient to participate in the decision-making process through health education in a respectful manner, the provider communicates to the patient that he or she is an important partner. Through the patient-provider collaboration, the provider can enhance the power and status of the patient. Buchmann (1997) found that the building of

the therapeutic alliance, in partnership with the patient, leads to the patient's expressing a greater sense of self-esteem and self-efficacy. This, in turn, leads to the patient's improved adherence to the therapeutic regimen. While a nurse can encourage the patient to participate and make decision by being an advocate and reflecting the patient's inner strengths and resources, only patient can empower themselves (McDougall, 1997).

Nursing literature identifies the integration as another major element of therapeutic alliance (Buchmann, 1997; Hess, 1996). Buchmann (1997) described therapeutic alliance as the process of balancing expert and referent power.

> Integration involves a process of the equalizing social power. Initially, a power differential exists between provider and patient. The provider brings knowledge and skill of the disease process whereas the patient brings specific experience about his or her own condition. Through the patient-provider integration, the patient attains expert power over the disease while the provider gains knowledge about the individual patient's experience. (Kim et al., 2001, p. 317)

The second power differential that exists between the provider and the patient is referent power. At the beginning of the integration process, the provider demonstrates the professional referent power, with a sense of genuine caring and encouragement to the patient. Toward the end of the interaction, the patient learns and achieves the self-referent power by improving self-care and self-efficacy in influencing the treatment outcomes.

Mutuality has been identified as one of the most important attributes in the therapeutic process between the nurse and the patient (Briant & Freshwater, 1998; Curley, 1997; Henson, 1997; Hummelvoll, 1996; Marck, 1990). The patient-provider relationship is characterized by the reciprocal process of caring with the mutual respect

and equality (Curley, 1997; Marck, 1990). Even though the patient-provider relationship is created initially by the patient's need for help, Hummelvoll (1996) emphasized that alliance is built upon the I-Thou relationship with a spirit of community. The concept of the I-Thou relationship treats the individuals with unequal power with equal dignity and respect, based on mutuality (Briant & Freshwater, 1998). Marck (1990) also described therapeutic reciprocity as a derivative of mutuality. The attributes of therapeutic reciprocity includes: collaboration; mutual exchange of personal interests, thoughts, feelings, and behaviors; and empowering nature of mutual responsibility for the patient-provider relationship.

George (1997) suggested that the nurse's affective behaviors can improve the quality of the therapeutic relationships. The nurse's affective behaviors includes empathy, positive acceptance of the person, openness, warmth, trust, genuineness, a commitment to the relationship, being sensitive to the patient's needs, and having a non-judgmental attitude. Empathy, which refers to the ability to communicate an understanding of the other person's feelings and experiences, has been considered as a core characteristic of the health care practitioner (Olson, 1995; Reynolds & Scott, 2000). Empathy enables the nurse to create an interpersonal climate of mutual trust that facilitates the positive health outcomes for the patient.

In addition to the above supportive behaviors of the nurse, the educational skills of nurse have been identified as elements of the patient-provider interaction (Cox, 1982; Carter & Kulbok, 1995). These elements are the provision of health information and assisting the patient's decision-making activities. These elements require professional and technical competencies of the nurse. These professional and technical skills enable the

nurse to encourage the patient to express and discuss his or her thoughts and emotions. By giving support to the patient, the nurse assists the patient by increasing his or her knowledge regarding the health situation and coping with the illness (Hummelvoll, 1996).

Several attributes of quality nursing care within the nurse-patient interaction have been identified from the patients' perspectives (Radwin, 2000; Weissman & Appleton, 1995). Weissman and Appleton (1995) emphasized that creating understanding and acceptance is the core aspect of nursing practice, which is necessary for developing a therapeutic relationship. The patient experiences acceptance in the nurse-patient interaction when he or she perceives a sense of friendship, a sense of well being, and a feeling of comfort with the nurse. Radwin (2000) identified eight attributes of good nursing care that are desired by the patients. They are professional knowledge, a continuity of care, attentiveness, the coordination of care, the feeling of a partnership, a sense of rapport, the individualization of care, and caring behaviors exhibited by the nurse.

The nursing literature is unique in considering the sequential, progressive phases of the patient-nurse interaction. Peplau (1988) divided the patient-nurse relationship into three overlapping phases according to changes in the patient's behavior as the relationship progresses. The first phase is the orientation phase in which the initial relationship and trust are established. The second phase is identified as the working phase where problems are identified and exploited. The last phase is the resolution phase where the relationship between the nurse and patient is terminated. There is a reciprocal exchange of goals and roles between the nurse and patient in each phase and these phases are interchangeable. The awareness of these phases is beneficial to the nurse in

developing the appropriate nursing plans and interventions and moving onto the next expected phase (Forchuk & Brown, 1989; Forchuk, 1994).

Hummelvoll (1996) described four phases of therapeutic alliance in the Nurse-Client-Alliance Model (NCA). These overlapping phases are the pre-interaction phase, the orientation phase, the working phase, and the termination phase. The aim of the orientation phase is to establish mutual trust in order to develop collaborative contracts. Both the nurse and the client are working together to reach the agreed upon goals in the working phase. The nurse supports the client with the aim of strengthening the client's sense of self-empowerment. In the termination phase, focusing on client's independence, the alliance is loosened. Thus, building and maintaining the nurse-client relationship is an ongoing process with interlocking phases (see Table 3.1 for a synopsis of the nursing literature).

Table 3.1
Theoretical Nursing Literature Review

Reference	Definition	Dimensions	Critical attributes
Madden (1990)	Alliance: inter-personal relationship between a nurse and a client in developing client health behaviors	-working alliance -helping alliance	-mutuality of goals -negotiation of goals -actively working toward goals -supportive relationship -equitable relationship
Cahill (1996)	Participation: involvement in the decision-making process, sharing activities with others		-sharing with others -narrowing of knowledge or competence gap -patient engagement -positive outcome
Henson (1997)	Mutuality: element of the closest, the most caring, and the most effective nurse-client relationship		-feelings of intimacy and connection -exchanges between people related to a common goal or shared purpose -sharing in common
Oda et al. (1994)	Collaboration: cooperative venture	-negotiation -mutuality -respect	-reciprocal discussion -balanced exchange between parties -shows regard and consideration for others
Weissman & Appleton (1995)	Acceptance		-friendship, sense of well-being, security

Table 3.1 continued

Reference	Definition	Dimensions	Critical attributes
Pieranunzi (1997)	Understanding power in the context of the nurse-patient relationship is crucial for relationship development and the ability to empower patients	-power of knowing -power as connectedness -power as having voice	-powerful and powerless experiences -connectedness in relationship with other in mutual ways -communicate relationship
Buchmann (1997)	Alliance: mutual respect and participation leads to improved adherence	-social power -self-efficacy	-referent power: supportive and caring -expert power: expertise and skills -self-efficacy
Briant & Freshwater (1998)	Mutuality: holistic relationship - understand and integrate aspects of self and others as a whole rather than viewing as an object	-power -control	-sharing relationship as partners -feelings of trust -discuss thoughts and emotions -equality with equal responsibility for the consequences of actions
McDougall (1997)	Patient empowerment: power comes from within, self-awareness and self-esteem		-sharing relationship -partnership -emphasis on the patient's inner strengths and resources
Rodwell (1996)	Empowerment: process of enabling or imparting power transfer from one to another	-transferring power -development of a positive self-power -recognition of the worth of self & others	-helping process -partnership -mutual decision-making -freedom to make choices and accept responsibility

Table 3.1 continued

Reference	Definition	Dimensions	Critical attributes
Wilson & Hobbs (1995)	Therapeutic partnership: shared power in the entire decision-making process	-alliance -accompaniment -agreement -action -accessibility	-shared responsibility, accountability, and decision making -achieving desired goals
Strickland & Strickland (1996)	Patient-provider partnership		-communication -patient empowerment
Hess (1996)	Client-health care professional relationship	-engagement	-potential power difference in the relationship -nurse: expert knowledge -client: expert on self
Marck (1990)	Therapeutic reciprocity: caring -- mutual empowering	-mutuality	-shared meaning, thought behavior -collaborative participation -exchange -openness
Hummelvoll (1996)	Nurse-client alliance model: spirit of community; four phases of interaction	-pre-interaction phase -orientation phase -working phase -termination phase	-mutual trust -collaboration -self-empowerment
Cameron (1996)	Interaction process	-behavior -attitude	-verbal/nonverbal communication -empathy -satisfaction with care
George (1997)	Nurse-client therapeutic relationship		-empathy -positive regard and acceptance -warmth, commitment -trust, genuineness

Table 3.1 continued

Reference	Definition	Dimensions	Critical attributes
Reynolds & Scott (2000)	Empathy: ability to communicate understanding; crucial in helping relationship	-interpersonal climate in nursing practice	-trust -understanding client's needs and responses -assist client in taking charge
Carter & Kulbok (1995)	Client-professional interaction	-pt.'s singularity -pt.-provider interactions -health outcome	-affective support -health information -decision control -professional competencies
Cox (1982)	-Interaction model of client-health behavior -Alliance: reciprocal and dynamic process	-pt.'s singularity -pt.-provider interactions -health outcome	-pt.'s cognitive, affective, and motivation -provision of health information, affective support, decisional control, and professional competence -adherence to regimen
Fosbinder (1994)	Interpersonal competencies of nurses		-teaching -personal sharing -establishing trust -being a friend
Radwin (2000)	Quality of nursing care		-professional knowledge -continuity -attentiveness -coordination -partnership -rapport -individualization -caring
Olson (1995)	Nurse-expressed empathy		-positive patient outcome

Table 3.1 continued

Reference	Definition	Dimensions	Critical attributes
Curley (1997)	Mutuality: symbolic shared commonalties of visions, goals including acceptance of differences with mutual respect for the uniqueness of person	-synchronous constituted relationship -evolution of both individuals toward personal becoming	-responsive interdependence, shared commonality, and equity within the relationship -greater self-awareness and self-understanding
Peplau (1988); Forchuk (1991, 1994, 1995)	Nurse-client relationship (Peplau's theory)	-orientation phase -working phase -resolution phase	-communication, verbal and non-verbal -integration -preconceptions of nurses and clients -self-understanding -learning, competencies

Theoretical medical literature

The physician-patient relationship has been described on a continuum of medical paternalism on one extreme and patient consumerism on the other extreme (Emanuel & Emanuel, 1992). The ideal therapeutic relationship was described as the midway point in this continuum, where the physician-patient relationship reflects the collaboration and partnership. The authors emphasized the importance of exploring the patient's values to achieve patient autonomy in this ideal relationship. In the collaborative model of the relationship, the physician's role was depicted as an advisor, counselor, or teacher.

Leopold, Cooper, and Clancy (1996) introduced the term, sustained partnership, to highlight the patient-centered therapeutic relationship. It described the collaboration between the physician and the patient in the area of communication and decision making for health care. The authors presented several essential components of the sustained partnership: the physician's knowledge of patient; the physician's expression of caring and empathy toward the patient; the patient's trust in the physician; the patient's participation; and shared decision-making. Communication was considered to be the essential element in maintaining the sustained partnership between physician and patient.

The medical literature has focused on the physician's techniques, such as communication skills, which are used to achieve a positive patient health outcome. The importance of the physician's communication skills, such as reflective listening, conveying empathy to the patient, validating the patient's feeling without judgment, and respecting the patient, were underscored (Goldstein et al., 1998). Keller and White (1998) depicted the therapeutic relationship as a supportive environment, which is characterized by rapport, trust, and respect between physician and patient. They also

discussed the physician's skills in assessing the readiness of the patient to change behaviors, the interventional strategies to increase the patient's confidence and the conviction to help patient change behaviors.

Emanuel and Dubler (1995) identified six critical dimensions of the ideal physician-patient relationship. They are choice, competence, communication, compassion, continuity, and the absence of a conflict of interest. The element of choice embodies the ability of the patient to choose the type of health care the patient desires. Competence refers to the patient's expectation that his or her physician would be competent in technical expertise and skills. The ideal relationship requires good communication, which includes the physician's ability to listen to the patient as well as explaining treatment options in a clear manner. It also encompasses the patient's freedom to express choices. The patient not only wants technical skills from the physician but also empathetic, compassionate care, which would help and support the patient in a time of distress. The ideal relationship also evolves over time and requires a significant investment of time to develop into a trusting relationship.

These elements of the ideal physician-patient relationship were confirmed in randomized interventional studies. In a randomized controlled study among 64 diabetic patients, the experimental group receiving the patient-empowerment educational program significantly improved self-efficacy (Anderson et al., 1995). The educational program taught self-care skills such as setting realistic goals, problem solving, stress management, identifying/obtaining social support, and self-motivation. In another randomized study of 133 homeless adults, Redelmeier et al. (1995) reported that compassionate care resulted in a significantly lower rate of return visits to emergency department. The compassionate

care included establishing rapport and spending more time with patients through attentive listening and sharing opinions (see Table 3.2 for a synopsis of the medical literature).

Table 3.2

Theoretical Medical Literature Review

Reference	Definition	Dimensions	Critical attributes
Emanuel & Emanuel (1992)	Physician-patient relationship: four models in a continuum	-patient values -physician's obligation -patient's autonomy -physician's role, caring	-openness -providing information -choice, self-control -competence, expert, friend
Leopold et al. (1996)	Sustained partnership	-communication	-physician caring -education -encouragement
Goldstein et al. (1998)	Patient education: facilitating adherence & behavior change	-cognitive level -attitudinal level -instrumental level -behavioral level -social level	-providing information -building commitment -instructions -reinforcement -social support
Keller & White (1998)	Alliance: a therapeutic relationship to help patient's changing behaviors	-provider's attitude and behavior -patient's attitude and behavior	-nonjudgmental attitude -individualized intervention -patient conviction -patient confidence
Emanuel & Dubler (1995)	Ideal physician-patient relationship		-choice -competence -communication -compassion -continuity -no conflict of interest
Anderson et al. (1995)	Patient education in interaction - enhanced health and quality of life	-patient empowerment	-patient-centered perspectives -self-efficacy -self-management
Redelmeier et al. (1995)	Improve patient satisfaction	-compassionate care	-rapport -attentive listening -sharing opinions

Theoretical psychotherapy literature

In 1970s, the pan-theoretical concept of alliance appeared in the literature that broadened the definition of alliance. By 1976, Bordin's pan-theoretical concept of alliance, which embraced both the therapist's techniques and the conditions of the relationship, had been widely accepted (Horvath, 2000). Bordin's concept of alliance included agreement and collaboration between the therapist and the client. The three major components of alliance are bonds, tasks, and goals. Bonds refer to the positive personal attachment between the client and therapist through the development of mutual trust, acceptance, and confidence. Tasks refer to the agreement of what is to be done to resolve the client's problems. Goals, which are the targets of the interventions, refer to the mutually agreed upon values and outcomes.

Therapeutic alliance was also differentiated into two types: Type 1 and Type 2 (Horvath & Luborsky, 1993). Type 1 alliance refers to a therapeutic alliance based on the client's perception of the therapist as being supportive and helpful. Type 2 alliance refers to a working alliance in a joint interaction between therapist and client with shared responsibilities.

Recently, it was recognized that the constructs of empowerment, active collaborative partnerships, or the client taking responsibility are salient aspects of therapeutic alliance. Yet, these constructs have been underrepresented and need to be included in the concept of alliance (Agnew-Davies et al., 1998; Horvath, 2000). Thus it was postulated that the therapeutic relationship is not only dependent upon the therapist's techniques, but it is dependent on therapist and client interaction. Frank et al. (1995) noted that effective therapeutic relationships included active participation through patient

education and the provision of information.

The therapist's ability to establish a supportive therapeutic relationship through the demonstration of warmth, respect, trust, and acceptance, is considered to be an essential element leading to the successful outcomes of therapy (Lambert & Bergin, 1994). Yet, therapeutic alliance is not the only a technique of the therapist, but it is the interaction between therapist and client that brings about the change.

The study by Hatcher and Barends (1996) offered new perspectives on the dimensions of alliance. By exploring the client's views of the alliance, the authors found that the client's perception of confident collaboration and idealized relationships are core elements of alliance. The client's collaborative working alliance indicates that the client is actively and purposefully working in formulating and pursuing goals and that the client has a sense of committed participation. The client views the ideal therapeutic relationship as a mutually negotiated condition, where the client feels freedom to express both positive and negative concerns without fear of criticism or judgments.

Horvath (2000) emphasized the client's perception as being more predictive of the outcome when compared to the therapist's report or a third party evaluation on the quality of the therapeutic alliance. The best estimates of the alliance in the psychotherapy literature were based on the client's report, followed by third party raters. The therapist's estimates were the least reliable reports (see Table 3.3 for a synopsis of the psychotherapeutic literature).

Table 3.3

Theoretical Psychotherapy Literature Review

Reference	Definition	Dimensions	Critical attributes
Horvath & Luborsky (1993)	Dynamic client-therapist interaction	-Type I: therapeutic alliance	-supportive, helpful
		-Type II: working alliance	-working together, shared responsibility
		-initial stage	-collaboration and trust
		-middle stage	-therapist's skill in recognizing/resolving dysfunctional issues
		-later stage	-therapist's more active interventions to challenge clients
Lambert & Bergin (1994)		-interpersonal, social, affective factors	-trust, warmth, acceptance, human wisdom
Bordin (1976) Horvath (2000)	Pantheoretical model: broader definition of working alliance	-bonds	-mutual trust, acceptance, confidence
		-agreements on task & goal	-collaboration
Hatcher & Barends (1996)	Core of alliance: purposive mutual collaboration, or working alliance	-confident collaboration	-sense of committed participation
		-idealized relationship	-freedom to voice negative feelings
Frank et al. (1995)	Alliance: coinvestigators during long-term treatment process	-knowledge	-education of pt. and family
			-provision of information
			-active participation of pt.

Summary of the theoretical literature

The theoretical literature from nursing, medicine, and psychotherapy were examined to identify emerging unmeasured dimensions of therapeutic alliance. The major elements of therapeutic alliance identified from the nursing literature included: the helping and working aspects of alliance; collaboration; empowerment and partnership; integration or equalization of social powers; and mutuality. The medical literature considered that the ideal therapeutic relationship between the patient and physician should reflect collaboration and partnership. The physician's communication skills, such as reflective listening, conveying empathy to patient, validating the patient's feeling without a judgmental attitude, and respect for patients, were considered to be essential elements. From the psychotherapy literature, agreement and collaboration between therapist and client were identified as salient elements. The three major components of alliance were: bonds, tasks, and goals. Among the nursing, medical, and psychotherapy literature, the nursing literature was unique in considering the sequential and progressive phases of the nurse-patient interaction. These phases included an orientation phase, a working phase, and a termination phase.

Critical Analysis of Empirical Literature

The purpose of this analysis is to identify the measured dimensions from the existing alliance instruments. As in the analysis of theoretical literature above, the alliance instruments found in nursing, medical, and psychotherapy literature are discussed.

Empirical nursing literature

In nursing, several instruments have been developed for measuring the nurse-

client relationship. Most of these instruments focus on either the nurse's response, the client's motivation, or the nurse's techniques rather than focusing on the interactional process of the therapeutic relationship. There is a dearth of instruments that assess the therapeutic alliance between the nurse and the client from the client's perspective.

In the 1970s, Aiken and Aiken (1973) developed a five-point scale that assessed the interpersonal processes between the nurse and patient. The identified five subscales represented the five core dimensions of the therapeutic relationship. They were empathetic understanding, positive regard, genuineness, concreteness, and self-exploration. In each subscale, there were five levels that measure the nurse's level of facilitation. The minimum facilitative level was set at three. There were no reports on the reliability or validity of the instrument.

Layton (1979) developed the Empathy Test to assist in teaching nursing students empathy. There were two forms of the Empathy Test, Form I and II comprising 12 true-false questions and 12 two-option multiple-choice items, respectively. Content validity was tested by nursing faculty members. The reliability coefficients were low ($\underline{r} = 0.34$ for Form I and $\underline{r} = 0.27$ for Form II). The convergent validity for Form II of the Empathy Test was supported by a positive correlation with the Carkhuff scale ($\underline{r} = 0.46$), which was the Empathic Understanding in Interpersonal Processes Scale. However, Form I of the Empathy Test did not correlate with the Carkhuff scale ($\underline{r} = 0.13$) nor with the Barrett-Lennard scale ($\underline{r} = - 0.01$), which was a Relationship Inventory, indicating low convergent validity.

Clay (1984) developed the Empathic Interaction Skills Schedule with the intention of enhancing and teaching empathic interactional abilities to nursing students. The

Empathic Interaction Skills Schedule was composed of five categories of empathic behaviors, which included accepting, listening, clarifying, analyzing, and informing behaviors. Inter-rater reliability ranged from 0.96 to 0.98. Intra-rater reliability ranged from 0.86 to 0.91. Content validity was determined by the professional judgment of experienced nurse educators, who found that the instrument was adequate for recording empathic behaviors. Criterion-related validity was tested by comparing the Schedule with a 5-point Likert scale of empathy using Carl Roger's definition. The Spearman's correlation coefficient was 0.87.

Forchuk and Brown (1989) developed the Relationship Form to assess the phases of the nurse-client relationship based on the Peplau's theory. The Relationship Form was used to determine how long the relationship remained in the initial orientation phase. The form was completed by the nurse on a seven-point scale through evaluation of the behaviors in the relationship. Developing the tool from Peplau's theory supported construct validity and content validity. The inter-rater reliability was established by having a clinical nurse specialist review the client records, resulting in Kappa of 0.41. It was found that there was a significant inverse relationship between the number of weeks in the orientation phase on both the Relationship form and the Working Alliance Inventory ($\underline{r} = -0.41$ on therapist form and $\underline{r} = -0.36$ for the client form).

More recently, the Interpersonal Competence Instrument for Nurses was developed to measure the patient-nurse relationship from the patient's perspective (Ravert, Williams, & Fosbinder, 1997). Fosbinder's Model of Interpersonal Competence, which identified the four categories of the patient-nurse interaction, provided the theoretical underpinnings of the instrument (Fosbinder, 1994). The four categories

included translating, getting to know you, establishing trust, and going the extra mile. There was a total of 125 items that were based on the categories and behavioral definitions from Fosbinder's qualitative study. For the revised 111-item instrument, the Content Validity Index (CVI) was determined to be 0.84 when assessed by a panel of 10 experts. Using the SMOG readability formula, the level of readability was established at the grade level of 8.09.

The Client Encounter Form (CEF) developed by Bear and Holcomb (1999) was a tool that measures the elements of the client-nurse practitioner interaction during primary care visits. Cox's (1982) Interactional Model of Client Health Behavior (IMCHB) provided the theoretical framework for CEF. Out of the three major constructs of the IMCHB (client singularity, client-professional interaction, and health outcome), the second construct, client-professional interaction, was used in the development of the CEF. The four domains of the client-professional interaction in IMCHB were affective support, health information, decisional control, and professional/technical competencies. These four domains became the four dimensions of the CEF. The CEF was tested in 41 primary care clinic visits. A retrospective chart review was also done to test the inter-rater reliability. The ranking categories ranged from none (coded 1), limited (coded 2), and extensive (coded 3). The Cohn's Kappa's for the inter-rater reliability ranged from 0.78 to 1.0. (see Table 3.4 for a synopsis of the empirical nursing literature)

Table 3.4

Empirical Nursing Literature

Reference	Scale	Subscales	Reliability	Validity
Aiken & Aiken (1973)		-empathetic understanding -positive regard -genuineness -concreteness -self-exploration		
Layton (1979)	Empathy Test		Form I = 0.34 Form II = 0.27	-content validity -convergent validity
Clay (1984)	Empathic Interaction Skills Schedule	-accepting -listening -clarifying -analyzing -informing	Inter-rater reliability = 0.96 – 0.98 Intra-rater reliability = 0.86 – 0.91 Spearman's correlation = 0.87	-content validity -criterion-related validity
Forchuk & Brown (1989)	Relationship Form (Peplau's theory)	-orientation phase -working phase -resolution phase	Inter-rater reliability kappa = 0.41	-construct validity -content validity
Bear & Holcomb (1999)	Client Encounter Form (CEF)	-affective support -health information -decisional control -professional/ technical competencies	Inter-rater reliability kappa = 0.78-1.0	

Table 3.4 continued

Reference	Scale	Subscales	Reliability	Validity
Ravert et al. (1997)	Interpersonal Competence Instrument for Nurses	-translating -getting to know you -establishing trust -going the extra mile		-Content Validity Index (CVI) = 0.84 -readability = grade of 8.09.

Empirical medical literature

Roter and Hill (1989) developed the Roter's Interaction Analysis System (RIAS) to measure the affective and instrumental behaviors of both the patient and doctor. The interaction is audio taped and coded for the total quality of the words as well as the words uttered. The dimensions of verbally affective behavior included verbal attentiveness, showing concern, social behaviors, and disagreement. The dimensions of instrumental behavior include giving information, asking questions, and counseling. Inter-observer reliability as measured by Pearson product-moment correlation coefficient was between 0.70 and 0.95.

Anderson and Dedrick (1990) developed the 11-item Trust in Physician Scale to measure patient's interpersonal trust in the physician. Patient's trust implied that the physician would provide support and assistance with the best interest of the patient in mind. The preliminary reliability test showed a Cronbach's alpha of 0.90 and construct validity was performed. Trust was significantly related to the patient's satisfaction.

The Barrett-Lennard Relationship Inventory was developed by Jarski, Gjerde, Batton, Brown, and Mathes (1985) to measure the patient's perception of the doctor-patient interpersonal relationship. The identified five dimensions included interpersonal skill, the level of regard, empathic understanding, congruence, unconditionality, and willingness to be known.

Callahan and Bertakis (1991) developed the Davis Observation Code (DOC) for analyzing the videotapes of physician-patient interactions to measure the content of their interactional behavior. The DOC is a 20-item direct observation scale, which rates the

occurrence of four key physician behaviors via direct observation and chart review. Those behaviors are: disease prevention, health education, health promotion, and checking for compliance. A nonparametric correlation analysis demonstrated a low concurrent validity. Inter-rater reliability was performed (see Table 3.5 for a synopsis of the empirical medical literature).

Table 3.5

Empirical Medical Literature

Reference	Scale	Subscales	Reliability	Validity
Roter & Hall (1989)	Roter's Interaction Analysis System (RIAS)	-affective behavior (care-oriented) -task-related behavior (cure-oriented)	Inter observer Pearson's product-moment correlation: 0.70 to 0.95	
Anderson & Dedrick (1990)	Trust in Physician Scale		Cronbach's alpha: 0.90	-construct validity
Jarski et al. (1985)	Barrett-Lennard Relationship Inventory	-interpersonal skill -level of regard -empathic understanding -congruence -unconditionality -willingness to be known		
Callahan & Bertakis (1991)	Davis Observation Code	-disease prevention -health education -health promotion -compliance checking	Inter-rater reliability	-concurrent validity

Empirical psychotherapy literature

Psychotherapy discipline contained the most widely used alliance instruments. One of the earliest alliance instrument was the Therapeutic Alliance Scales (TAS) (Marziali et al., 1981). TAS is a 42-item, 5-point Likert scale that assesses the attitudinal-affective quality of the therapeutic alliance. It examines the therapist's and the patient's contribution to the development and maintenance of the alliance. This instrument includes four scales, which are the therapist's positive contribution scale, the therapist's negative contribution scale, the patient's positive contribution scale, and the patient's negative contribution scale. Each item is rated on a scale from 0 (not present) to 5 (intensely present) based on the degree of intensity present. The positive items of the therapist are the therapist being encouraging and hopeful, while negative items for the therapist include the therapist criticizing the patient. The patient's positive items are the patient sensing that the therapist understood and accepted them, while the patient negative items are the patient acting in a hostile and critical manner toward the therapist. The alpha internal consistency for the therapist's total (a combination of the positive and negative portion of the scale) contribution scale was 0.88 and the patient's total contribution scale was 0.94. The results of Mann-Whitney U Test between the good-outcome and the poor-outcome patients indicated that the patient's positive contribution to the therapeutic alliance was positively associated with good treatment outcomes.

Marmar, Horowitz, et al. (1986) renamed a 41-item version of the above TAS as Therapeutic Alliance Rating System. In a sample of 52 clients, alpha reliability coefficients ranged from 0.65 to 0.76 for the four scales. Convergent validity was supported by the hypothesis-testing approach. The authors found that there was a positive

correlation between the patient's motivation and the patient's positive contribution to the therapeutic alliance. Discriminate validity was supported by a lack of correlation between alliance ratings and general symptomatic distress.

Penn Healing Alliance Scales (Alexander & Luborsky, 1986) is a combination of three major instruments: the Penn Helping Alliance Counting Signs Method (HA_{CS}); the Penn Helping Alliance Rating Method (HA_r); and the Penn Helping Alliance Questionnaire Method (HA_q). In the first method, HA_{CS}, the judge assigns positive or negative signs and 5-point numerical values in the transcript. In this method, the judge evaluates two types of helping alliance. Type 1 refers to the perceived helpfulness of the therapists and Type 2 refers to the patient's collaboration or bonding with the therapist. The second method, HA_r, is conceptually identical to the HA_{CS} above except for using a 10-point Likert-type rating scale and a few additional items. The third method, HA_q, is again conceptually identical to both the HA_{CS} and the HA_r, but it is rated by the patient and contains further additional items.

The inter-rater reliability for the HA_r ranged from 0.75 to 0.88. The estimate of internal reliability was 0.96. The reliability assessment for the HA_{CS} was complex and had mixed results. The HA_{CS} and HA_r were expected to inter-correlate since they were derived from the same data set. As expected, there were inter-correlations for positive signs (0.57 for the early sessions and 0.83 for the late sessions). However, poor inter-correlations were found for negative signs (- 0.21 for the early sessions and - 0.19 for the late sessions). The HA_q method showed correlation with legal status (0.51), psychological status (0.58), employment status (0.70), and drug use (0.72).

Horvath and Greenberg (1989) developed the Working Alliance Inventory (WAI)

as a self-reporting instrument that uses a 7-point Likert scale (1= never, 7= always) to measure the quality of alliance. It includes two versions, one for the client and the other for the therapist. Each version consists of 36 items that are comprised of 12 items for each of the three subscales. These subscales consist of measures for emotional bonding between the counselor and the client, agreement regarding the goals of treatment, and agreement regarding the tasks. The WAI was based on the concept of a working alliance that refers to the partnership and collaboration within the patient-provider relationship with emphasis on bonding, goal setting, and tasks. For the client's version, the reliability ranged from 0.85 to 0.88. For the therapist's version, the reliability was estimated to be 0.87 for the goal setting subscale, 0.82 for the task subscale, and 0.68 for the bonding subscale. Convergent validity was supported through the strong association between the three subscales of WAI and construct empathy using multitrait-multimethod analyses. Concurrent validity was supported in two different studies that used the WAI in addition to two other measures. The predictive validity was supported within the WAI task subscale.

The California Psychotherapy Alliance Scales (CALPAS) is a 24-item instrument with 7-point Likert-type scale consisting of 4 subscales (Gaston, 1991; Marmar, Weiss, & Gaston, 1989). The subscales include the patient working capacity, patient commitment, working strategy consensus, and therapist's understanding and involvement. The therapeutic alliance is measured by examining the client's contribution, the therapist's contribution, and the interaction between the client and therapist.

Agnew-Davies et al. (1998) developed a 28-item Agnew Relationship Measure (ARM) with parallel forms for the client and the therapist. Each item starts with a phrase,

such as: "Thinking about today's meeting...." and is rated on a 7-point Likert scale after each statement. This scale ranges from 1 (strongly disagree) to 7 (strongly agree). There are five subscales: bond, partnership, confidence, openness, and client initiative. The bond subscale includes items that express friendliness, acceptance, understanding, and the feeling of being supported in the relationship. The partnership subscale contains items that reflect a sense of joint work on therapeutic tasks. The confidence subscale measures the clients' freedom to express personal competence and expert power. The clients' freedom to express personal concerns without fear or embarrassment is measured on the openness subscale. The client initiative subscale measures the client being responsible for taking the lead during the therapeutic sessions, which is intended to measure the patient empowerment. A mean score of 5 or greater indicates that the alliance is positive. The alpha internal consistency for the bond, partnership, confidence, and openness subscales ranged from 0.77 to 0.87 for both clients and therapists. However, the alpha internal consistency for the client initiative subscale was only 0.55 for both the clients and the therapists. Factor analysis was performed. It was noted that there was a high intercorrelations between bond, partnership, and confidence subscales, which indicated that there were overlaps among the subscales (see Table 3.6 for a synopsis of the psychotherapy literature).

Table 3.6

Empirical Psychotherapy Literature

Reference	Scale	Subscales	Reliability	Validity
Agnew-Davies et al. (1998)	Agnew Relationship Measure (ARM): 28-item, 7-point Likert scale	-bond -partnership -confidence -openness -initiative	-0.82 to 0.85 -0.80 to 0.81 -0.87 to 0.86 -0.77 to 0.86 -0.55 to 0.55	-convergent validity with WAI (Working Alliance Inventory)
Horvath & Greenberg (1989)	Working Alliance Inventory (WAI); 36-item, 7-point Likert scale, forms for client (C) and therapist (T).	-goal setting -bonding -task	- Client: 0.85 to 0.88 - Therapist: 0.68 to 0.87	-convergent validity, concurrent validity, and predictive validity with Empathy scale of the Relationship Inventory (RI) and Counselor Rating Form (CRF)
Gaston (1991) Marmar, Weiss, et al. (1989)	California Psycho-therapy Alliance Scales (CALPAS)	-patient working capacity -patient commitment -working strategy consensus -therapist understanding & involvement		
Marziali et al. (1981); Marmar, Horowitz, et al. (1986)	Therapeutic Alliance Scales (TAS): 42-item, 5-point Likert scale.	-therapist's total contribution scale -patient's total contribution scale	-0.88 -0.94	-construct validity
Alexander & Luborsky (1986)	Penn Healing Alliance Scales	-HA_{CS} method -HA_r method -HA_q method	Interrater reliability: 0.75 to 0.88	

Summary of the empirical literature

In the empirical nursing literature, the empathetic technical skills dimension was the focus. The aspects of empathy included mutual positive regard, understanding, accepting, listening, and genuineness. Another element measured in the empirical nursing literature was the phases of the nurse-client relationship, which included the orientation, working, and termination phases. Similarly, the empirical medical literature focused on the physician's interpersonal skills, such as affective behaviors, task-related behaviors, level of regard for the client, congruence, unconditionality, attentiveness, empathic understanding, and health education. The identified dimensions of the therapeutic alliance in the psychotherapeutic empirical literature consisted of bonding, partnership, confidence, openness, initiative, goal setting, task development, patient commitment, and attitudinal-affective quality.

Inductive Triangulation from the Qualitative Study

The second step in the retroductive triangulation process involves a qualitative study of the concept (Quayhagen & Quayhagen, 1988). The purpose of the inductive triangulation was to identify additional dimensions and attributes of the therapeutic alliance. "In the inductive process, a small qualitative study was conducted using a collective, creative thought process whereby other health professionals contributed ideas, both individually and collectively" (Kim et al., 2001, p. 318). Five practicing nurses who held master's degrees and one physician were asked to express their thoughts about therapeutic alliance with chronic diseases in mind. Each person was asked to independently write down words or clauses that came to mind. A variety of attributes were identified. Examples of the most cited attributes were "shared goal setting,"

"teaming together," and "partnership". Other attributes were "mutual agreement," "reciprocity," and "connection". The less frequently identified attributes included "patient-provider interaction," "respect," "patient is empowered," and "trust".

The attributes from the small qualitative study that the experts wrote down were found to fall into two major components of the therapeutic alliance concept. They were the contextual component and the action-oriented component. The contextual component was related to the therapeutic atmosphere that influenced the therapeutic interactional process, while the action-oriented component referred to the patient and provider working together to achieve a goal.

The contextual component was further divided into two sub-categories, which consisted of the interactional and the therapeutic environmental sub-categories. For example, the attributes of "therapeutic interaction" and "patient-provider interaction" were included in the interactional sub-category. While the attributes of "friendships," "connection," "helping," "respect," and "trust" were sorted together into therapeutic environmental sub-category.

The action-oriented component was also divided into two sub-categories, which were the working process and outcome-oriented sub-categories. The working process sub-category included "mutual agreement," "shared goals," "commonality," "negotiation," "cooperation," "collaboration," "contracts," and "reciprocity". The outcome-oriented sub-category included "partnership," "mutual sense of responsibility," "mutual decision-making," "patient is empowered," and "equality in power" (see Table 3.7 for the components of the therapeutic alliance).

Table 3.7

Components of Therapeutic Alliance from the Inductive Triangulation

CONTEXTUAL COMPONENT		ACTION-ORIENTED COMPONENT	
INTERACTION	THERAPEUTIC ENVIRONMENT	WORKING PROCESS	OUTCOME-ORIENTED
-"therapeutic interaction" -"patient-provider interaction"	- "friendships" -"connections" -"helping" -"respect" -"trust"	-"mutual agreements" -"cooperation" -"contracts" -"shared goals/goal settings" -"reciprocity" -"collaboration" -"commonalities in goals, values, and beliefs" -"negotiation"	-"partners in decision making" (partnership) -"mutual decision making" -"mutual sense of responsibility" -"equality in power" -"shared responsibility" -"outcome oriented" -"patient is empowered"

Formulation of a Conceptual Schema

The third step of the retroductive triangulation involves the emergence of a conceptual schema through synthesis of the deductive process of the first step and the inductive triangulations of the second step (Quayhagen & Quayhagen, 1988). Conceptual schema has been described as a set of concepts, ideas, or notions integrated into a meaningful configuration that broadly explains the phenomena of interest (Burns & Grove, 1993; Fawcett, 1984). Four salient dimensions of therapeutic alliance were upheld in the conceptual schema. The four dimensions were labeled based on their salient attributes. The dimensions were integration, communication, collaboration, and empowerment.

The first dimension of therapeutic alliance, integration, refers to the initial phase of the patient-provider therapeutic interaction, which has been identified as the most predictive of all of the treatment outcomes (Forchuk, 1994). The two attributes for the integration dimension are: striving for balance in the expert social power, and striving for balance in the referent social power (Buchmann, 1997). Referent power comes from being caring and supportive, while expert power comes from having special knowledge, experience, education, or skills. While the provider is an expert on disease, the patient is an expert on his or her condition at the start of the relationship. It is the provider who demonstrates the professional referent power with a sense of genuine caring and encouragement. Toward the end of the interaction, the patient has achieved the self-referent power by improving his or her own self-care.

The second dimension of therapeutic alliance is communication. It is a vital component in the formation of the therapeutic relationship. The three attributes of this

dimension include bonding, the provision of information, and the expression of concerns. The quality of relationship is determined by factors such as empathy, positive regard, acceptance, non-judgmental responses, trust, and genuineness. These factors are salient in establishing the bonding aspects of communication. Patient education is also a major component of communication. The supportive environment established during the communication process is very important, because the patient is able to express negative feelings or concerns without the fear of embarrassment (Carter & Kulbok, 1995; Frank et al., 1995; George, 1997; Hatcher & Barends, 1996; Keller & White, 1998).

Collaboration is the third dimension of therapeutic alliance. Collaboration is the most cited aspect of the therapeutic alliance. The dimension of collaboration includes the three major attributes of negotiation, cooperation, and participation. The patient and the provider collaborate with a sense of committed participation toward mutually negotiated goals. The emphasis on collaboration enhances the patient's understanding of tasks and goals, which leads to the patient taking an initiative regarding his or her own care (Hatcher & Barends, 1996; Madden, 1990; Oda et al., 1994; Rodwell, 1996).

The final dimension of the therapeutic alliance is empowerment. It represents the patient's active partnership in the decision-making with shared responsibilities and autonomy (Briant & Freshwater, 1998; McDougall, 1997; Wilson & Hobbs, 1995).

> Patient empowerment process involves power sharing and mutual decision making between provider and patient. In the empowerment process, the patient becomes more responsible for his or her own care and more involved in making choices. In the process, the patient plays a greater role in his or her own health care through development of self-esteem, confidence, and self-efficacy (Keller &

White, 1998; McDougall, 1997; Rodwell, 1996). (Kim et al., 2001, p. 317)

The emphasis on a shared relationship helps the patient to build inner strength, confidence, and self-efficacy (Buchmann, 1997; Keller & White, 1998; McDougall, 1997). Self-efficacy, partnership, and equality are the three major attributes of empowerment that were identified.

Therefore, the conceptual schema infers a theoretical definition of therapeutic alliance. The theoretical definition provides the meaning of therapeutic alliance by integrating and synthesizing the component elements of the concept into a meaningful whole (Waltz et al., 1991). The study has thus defined therapeutic alliance as a dynamic interactional process between the patient and the provider where the power differential is integrated. Bonding and education are fostered through communication and collaboration to carry out mutually negotiated goals, empowering the patient to take responsibility for self-care. For the patient, it is a transforming process from being the passive recipient of care to becoming an active participant in an equitable partnership through the process of empowerment (see Table 3.8 for the therapeutic alliance conceptual schema).

Table 3.8

Therapeutic Alliance Conceptual Schema

DIMENSION	INTEGRATION	COMMUNICATION	COLLABORATION	EMPOWERMENT
Deductive Triangulation	-balance in expert social power -balance in referent social power	-bonding -provision of information -expression of concerns	-negotiation -cooperation -participation	-self-efficacy -partnership -equality
Inductive Triangulation	-"therapeutic interaction" -"patient-provider interaction"	- "friendships" -"connections" -"helping" -"respect" -"trust"	-"mutual agreements" -"cooperation" -"contracts" -"shared goals/goal settings" -"reciprocity" -"collaboration" -"commonalties in goals, values, and beliefs" -"negotiation"	-"partners in decision making" (partnership) -"mutual decision making" -"mutual sense of responsibility" -"equality in power" -"shared responsibility" -"outcome oriented"

Instrument Development

The fourth step of the retroductive triangulation method involves item generation and instrument development (Quayhagen & Quayhagen, 1988). There were numerous types of instrument formats from which to choose. A summated self-report, Likert-type format was selected for this instrument development. The scaling format was a 4-point Likert scale, ranging from 1 (never), 2 (rarely), 3 (sometimes), to 4 (always). The instrument was designed to obtain only the patient's perspective on the quality of the therapeutic alliance.

The self-report format is considered to be the most direct approach to measure the attitudes, interests, or values of the subjects. The Likert-type format was chosen for the instrument because it is easy for the subjects to understand and respond to. A number was assigned to each response with equal numerical distances between the numbers on the 4-point scale. Such interval-level data would allow a broader range of statistical operations that could be applied (McDowell & Newell, 1996; Waltz et al., 1991). The 4-point scaling method displays sensitivity in discriminating the responses, yet it is not overly burdensome for the subjects. It also forces the subjects to make choices with which they may not agree (Jacobson, 1997). The summated scoring procedure is considered to be reliable and easy to construct (Waltz et al., 1991). Again, only the patient's perspective was collected since the patient's perception was more predictive of the outcome than those of the therapist or a third party (Horvath, 2000).

The conceptual schema of therapeutic alliance, which contained the salient attributes for each of the four dimensions, was distributed to an eleven-member panel of three doctorally prepared nurse scientists and eight doctoral nursing students who were

trained in instrument development. The panel members were instructed to write potential items for each dimension for administration to adult patients, defined as being18 years of age and older. The items were to be written in ninth grade English. The intention was to assess the quality of therapeutic alliance for each subject. For objectivity, the panel was told to avoid languages that may cause bias toward the socially approved response. The ninth grade reading level was set to meet the appropriateness of this instrument for various demographic and cultural backgrounds of the potential subjects (Jacobson, 1997). Each panelist independently wrote down the items in each dimension that came to the panelist's mind.

Initially, a total of 110 items were generated for the dimensions of integration, communication, collaboration, and empowerment (26, 36, 24, and 24 items, respectively). These initial items were rephrased and culled by the author to remove redundancy and to assure consistency with the conceptual schema. Some of the items were written in a negative orientation to reduce response bias. The guidelines for the practical aspects of the instrument were also followed. The items that were subject sensitive, that is, easy to understand, simple to complete, and not overly burdensome for the subjects, were retained (Jacobson, 1997; Strickland, 1998). Ferketich (1991) recommended that the instrument should be composed of a minimal number of items while achieving the acceptable support for its psychometric properties by retaining the best set of items. It was also recommended that the initial pool of items should have twice as many items as the final instrument so that sufficient items were available for deleting and refining. A total of 60 items, 15 items in each of the four dimensions, were selected from the initial pool. A title of the Kim Alliance Scale (KAS) was given to the preliminary draft of the newly

developed instrument.

Preliminary Psychometric Testing and Instrument Revision

The fifth and sixth steps of the retroductive triangulation are the preliminary testing of the psychometric properties and revision of the newly developed instrument (Quayhagen & Quayhagen, 1988). For the preliminary testing of the KAS, psychometric evaluation included the content validity, factorial validity, internal consistency reliability, and construct validity tests.

Content Validity

The content validity testing is the first psychometric evaluation procedure for refining the number of items in the newly developed instrument. Content validity, as measured by Content Validity Index (CVI), ensures that the items included in the instrument reflect the construct (Waltz et al., 1991). The purpose of this procedure was to check whether the items in the KAS reflected the dimensions of therapeutic alliance under which they were placed. Two doctoral nursing students studying patient partnership and health promotion were selected to be expert judges to test content validity. The expert judges were asked to rate the content validity on a form to see if each item of the KAS adequately represented the content for each dimension of the therapeutic alliance. The expert judges were provided with a description of each dimension and its critical attributes.

The judges indicated whether an item was valid on a 4-point rating scale: 1 (not valid), 2 (somewhat valid), 3 (quite valid), and 4 (very valid). The content validity index (CVI) was used to categorize the extent of agreement between the judges (Waltz et al., 1991). If an item was rated either 3 or 4 by both judges, the

> CVI was considered as 1, representing a perfect agreement between the judges. If an item was rated as 1 or 2 by either of two judges, the CVI was considered as 0, reflecting an unacceptable level of content validity. Items were retained within each dimension if there was a total of 80% agreement or better between the judges. (Kim et al., 2001, p. 321)

The resulting CVI for the integration dimension was 80%, which indicated that there was agreement between the judges on 12 out of the 15 items. The CVI for the communication dimension was 93% with an agreement on 14 items out of 15. The CVI of the collaboration dimension was 80% with an agreement on 12 of the 15 items. The CVI of the empowerment dimension was computed as 100%, which indicated a complete degree of agreement where all 15 items measuring the empowerment dimension of therapeutic alliance were in agreement. A culling process was used to eliminate low-score items and reduce the item size of each dimension to 12.

A total of 48 items were thus retained in the refined KAS. There were nine items written in a negative orientation, three from the empowerment dimension and two each from the other three dimensions. For the negatively oriented items, the scores were reversed prior to analysis so that all items were in the same orientation. The possible summed score for each dimension ranged from 12 to 48, with the total possible summed score for the measure ranging from 48 to 192.

The following preliminary testing was conducted to evaluate further psychometric properties of the KAS. Construct validation and reliability estimates procedures were employed to assess the psychometric properties of the KAS by using the SPSS computer program (SPSS Inc., 1999).

Method: Study I

Participants

Registered nurses were recruited through personal and professional contacts to perform the initial testing for construct validity and reliability with the 48-item KAS. They were required to have had at least one personal encounter with a health care provider within the past 2 years.

> A total of 68 out of the 79 subjects responded (86%). The age ranged from 26 years to 65 years of age, with 71% being between 36 to 55 years of age. In terms of ethnicity, 65% were Caucasians, while 6%, 13%, and 7% were African-American, Asian-American, and Mexican-American, respectively. Native American and other ethnic groups were represented by only 9% of the sample. (Kim et al., 2001, p. 317)

The sample included 88% female and 12% male. The educational level included diploma prepared nurses (4%), associate prepared nurses (6%), baccalaureate prepared nurses (22%), masters prepared nurses (60%), and doctorally prepared nurses (7%).

Procedure

The Institutional Review Board, Committee on the Protection of Human Subjects, at the University of San Diego approved the study.

After obtaining signed informed consent, each participant received a packet containing four instruments: a demographic data form, KAS, the ARM (Agnew-Davies et al., 1998), and the Multidimensional Health Locus of Control (MHLC) (Wallston & Wallston, 1978). The participants were instructed to report on overall

quality of the encounters with one specific health care provider. Following completion of all forms, the participants were instructed to return them by mail or hand them to the principal investigator within two weeks. The consent forms and data were kept in separated file cabinets. All data were coded and entered into a computer. The SPSS-PC software (SPSS Inc., 1999) was employed to evaluate preliminary factorial validity, internal consistency reliability, and construct validity of the KAS. (Kim et al., 2001, p. 321-322)

Measures

In addition to the KAS and the demographic data form, two measures were used to establish the construct validity of the KAS. The ARM was used to determine the convergent validity, while the MHLC was utilized to determine the divergent validity.

The ARM is a 28-item instrument that measures the quality of alliance between therapist and client. It contains five subscales: bond, partnership, confidence, openness, and client initiative. The ARM is a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The authors of the ARM reported factorial validity and internal consistency reliability ranging from 0.77 to 0.87 for four subscales and 0.55 for the client initiative subscale. The MHLC is a 36-item instrument that assesses the client's beliefs concerning control of his or her own health status. It consists of three subscales: internal control (IHLC), control by chance (CHLC), and control by powerful others (PHLC). The MHLC uses a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). The reported internal consistency reliability ranged from 0.83 to 0.86. The predictive validity between health status and MHLC showed that the

health status correlated positively with IHLC ($r = 0.40$, $p < 0.05$), correlated negatively with CHLC ($r = -0.28$, $p < 0.01$), and did not correlate with PHLC ($r = -0.06$). (Kim et al., 2001, p. 322)

Results: Study I

Construct validation and reliability estimate procedures were employed to assess preliminary psychometric properties of the KAS by using the SPSS computer program (SPSS Inc., 1999). The construct validation procedures included factor analysis and a modified multitrait-multimethod approach to support convergent and divergent validity for the instrument. Internal consistency reliability procedures were employed to investigate the preliminary reliability estimates (Waltz et al., 1991). (Kim et al., 2001, p. 322)

Factorial validity

Once content validity has been supported, factorial procedures are frequently used in further validity testing. As a form of construct validity, factor analysis helps identify the items that best represent their respective dimensions in the conceptual schema. A number of factoring methods are available and appropriate for testing construct validity when the sample size is large (Nunnally & Bernstein, 1994). The sample size in this study, however, was small ($N = 68$), resulting in the need to limit analyses to the items in each specific dimension. This resulted in a 5:1 subject to item ratio in each 12-item dimension. The alpha method of factoring has been developed from psychometric research and the method maximizes the internal consistency reliability of each factor. Contrary to other methods of factoring, an unrotated factor solution is needed for

interpretation rather than a rotated solution (Nunnally & Bernstein, 1994). Therefore, only the initial factor in the unrotated matrix was examined for items that represented the dimensions. Items that loaded at 0.40 or above were retained within each initial factor as valid for meaningful interpretation of the dimension. This resulted in a 30-item KAS that has 8 collaboration items, 11 communication items, 5 integration items, and 6 empowerment items. (Kim et al., 2001, p. 323)

Reliability testing

After the dimensions were factored, the next procedure was to assess if the factors were reliable. Internal consistency reliability estimates the consistency of responses across the items within a measure. Cronbach's alpha and split-half procedures were employed to estimate the internal consistency reliability. The new instrument is considered to be reliable if it meets the criteria of coefficient alpha (≥ 0.70), inter-item correlation ($\underline{r} \geq 0.25$), and item-total correlation ($\underline{r} \geq 0.30$) (Nunnally & Bernstein, 1994). The Cronbach's alpha for the total KAS was 0.94. The alphas for the dimensions ranged from 0.71 for empowerment to 0.87 for communication. Inter-item correlations and item-total correlations of the four dimensions and the total KAS also met the required criteria. The split-half coefficient alpha, with equal-length Spearman-Brown correlation, was 0.89. The coefficient alphas for each half of the KAS were 0.87 and 0.91, respectively (see Table 3.9). (Kim et al., 2001, p. 323-324)

Table 3.9

Internal Consistency Reliability Estimates of 30-item KAS (N = 68)

Types	Determinants				
	Dimensions	# of Items	Mean Inter-item Correlation	Range Item-total Correlation	Alpha[a]
Cronbach's Alpha					
	Collaboration	8	0.33	0.34 - 0.74	0.80
	Communication	11	0.38	0.38 - 0.73	0.87
	Integration	5	0.44	0.50 - 0.65	0.80
	Empowerment	6	0.29	0.38 - 0.51	0.71
	Total KAS	30	0.35	0.39 - 0.76	0.94
Split-Half[b]					
	Part 1	15	0.32	0.39 - 0.65	0.87
	Part 2	15	0.42	0.42 -0.77	0.91

[a] Coefficient Alpha

[b] Correlation between Part 1 and Part 2 (Spearman-Brown Correlation) = 0.89

Note. From "The Kim Alliance Scale: Development and preliminary testing," by Kim, S. C., Boren, D., & Solem, S. L., 2001, Clinical Nursing Research, 10 (3), 314-331.

Once the KAS was found to have preliminary support for reliability, the degree of independence of the dimensions was investigated. Of interest was whether the dimensions were independent subscales or if the dimensions were highly correlated and, therefore, were components of a single scale. The Pearson product-moment correlation procedure (coefficient r) was used to assess for these correlations. Each dimension was found to have a high positive correlation with the other dimensions (r ranged from 0.74 to 0.86, $p < 0.01$). These high correlations suggested that the four dimensions in the KAS are not independent of each other and the total KAS should be used as a unitary single scale containing four theoretical dimensions (see Table 3.10). (Kim et al., 2001, p.324)

Table 3.10

Inter-Correlations for the Four Dimensions of 30-item KAS

Dimensions	Integration	Communication	Collaboration	empowerment
Integration				
Communication	0.83			
Collaboration	0.74	0.74		
Empowerment	0.74	0.80	0.86	

Construct validity

The final preliminary testing of the KAS involved a second approach to construct validity. The preliminary support for convergent and divergent validity was investigated using a modified multitrait-multimethod approach. This

approach has the assumption that measures of the same trait or construct will have a higher correlation (convergent validity), whereas measures of related but independent traits or constructs will have a lower correlation (divergent or discriminant validity). If the methods of measurement are the same (e.g., both rating scales), the correlation will be higher than if different methods were used (Waltz et al., 1991). In the present study, all methods were the same, so the approach was modified to a multitrait-monomethod form.

For preliminary testing of convergent and divergent validity of the KAS, two hypotheses were developed: A positive correlation would exist between the KAS and the ARM, and a low correlation would exist between the KAS and the MHLC. The ARM was selected as an appropriate measure for convergent validity because both KAS and ARM measure alliance. The MHLC was selected as an appropriate measure for divergent validity because control, whether attributed to self or others, presupposes a dominant-subservient relationship. In contrast, alliance as defined in the KAS assumes a balanced or equalized relationship. Because both control and alliance are found in various health care situations, the MHLC measure of the control concept was selected for the testing of divergent validity. The results of testing were as expected. The KAS correlated highly with the ARM ($\underline{r} = 0.83$, $\underline{p} < 0.01$), indicating that these two instruments measure a similar construct. As further predicted, the KAS did not correlate with any of three MHLC subscales ($\underline{r} = 0.03$, - 0.22, & - 0.14, respectively), indicating that these two instruments measure different constructs (see Table 3.11). (Kim et al., 2001, p. 324-325)

Table 3.11

Construct Validity Testing of 30-item KAS

	KAS	ARM	IHLC	CHLC	PHLC
KAS					
	0.83**				
ARM					
	0.03	0.15			
IHLC					
	- 0.22	- 0.25*	- 0.19		
CHLC					
	- 0.14	- 0.16	- 0.13	0.52**	
PHLC					

*$p < 0.05$, **$p < 0.01$

Post-hoc analyses: Influence of the demographic variables

The patient and provider characteristics were examined to explore whether statistical differences existed in the quality of the therapeutic alliance as measured by the KAS. The differences in educational levels were of interest becasue education may have an influence on the alliance and subsequent response to health care needs. [Although an a priori hypothesis was not set, it was assumed] that the more highly educated patient would be better able to communicate and collaborate with the health care provider and feel more empowered in self-care responsibility. Therefore, the participants were grouped by educational levels, that is, graduate versus nongraduate and baccalaureate (BSN) versus non-BSN. Differences within these groupings were then examined in both the four dimensions and the total score of the KAS. Both distribution curves of those scores and Fisher's measures of skewness and kurtosis were examined to justifiy

that the analysis of variance (ANOVA) procedures were appropriate for the graduate versus nongraduate analysis. In contrast, the nonparametric Mann-Whitney U procedure was needed for the analysis of the smaller BSN versus the non-BSN samples (Munro & Page, 1993).

Statistically significant differences existed in the quality of the therapeutic alliance based on the patient's educational level. Patients with a graduate degree had higher scores in the collaboration, communication, and empowerment dimensions and in the total KAS compared with patients with a nongraduate degree. Among patients with a nongraduate degree, those with a bachelor's degree had higher scores in collaboration and empowerment dimensions and in the total KAS when compared to patients without a bachelor's degree (see Table 3.12). A difference was also found based on the type of health care provider of the patient (MD vs. non-MD). Patients who identified health care providers with MD degree had higher scores in the collaboration dimension compared with patients who identified providers without MD degree, $\underline{F}$ (1, 66) = 7.65, $\underline{p}$ = 0.007 (see Table 3.13). (Kim et al., 2001, p. 325-326)

Table 3.12

Mean Scores in 30-item KAS Dimensions across Educational Level

Dimension	Educational Level					
	Graduate† (n = 46)	Nongraduate (n = 22)		BSN† (n = 15)	Non-BSN† (n = 7)	
	M (SD)	M (SD)	F	M (SD)	M (SD)	Z
Collaboration	28.2 (2.7)	26.3 (4.4)	5.00*	27.7 (3.6)	23.3 (4.5)	-2.13*
Communication	38.4 (3.7)	35.5 (5.1)	7.51**	36.7 (5.1)	32.9 (4.4)	-1.45
Integration	18.2 (1.9)	17.3 (2.2)	3.10	17.9 (2.1)	16.1 (2.1)	-1.71
Empowerment	21.4 (1.7)	19.7 (3.4)	7.37**	20.9 (2.5)	17.0 (3.7)	-2.23*
Total KAS	106.2 (8.8)	98.8 (14.2)	7.09**	103.2 (12.3)	89.3 (13.9)	-2.01*

*p < 0.05, **p < 0.01, † Graduates have master's or doctoral degrees, BSN have baccalaureate degree only, non-BSN have either diploma or associate degrees.

Note. From "The Kim Alliance Scale: Development and preliminary testing," by Kim, S. C., Boren, D., & Solem, S. L., 2001, Clinical Nursing Research, 10 (3), 314-331.

Table 3.13

Analysis of Variance (ANOVA) among MD vs. non-MD groups

Dimensions		Sum of Squares	df	Mean Squares	F	p
Integration	Between groups	10.36	1	10.36	2.65	0.11
	Within groups	258.27	66	3.91		
	Total	268.63	67			
Communi-	Between groups	21.19	1	21.19	1.12	0.30
cation	Within groups	1253.68	66	19.00		
	Total	1274.87	67			
Collabo-	Between groups	81.68	1	81.68	7.65	0.007**
ration	Within groups	704.38	66	10.67		
	Total	786.06	67			
Empower-	Between groups	16.79	1	16.79	2.74	0.10
ment	Within groups	405.09	66	6.14		
	Total	421.88	67			
KAS	Between groups	439.22	1	439.22	3.57	0.06
	Within groups	8118.67	66	123.01		
	Total	8557.88	67			

*$p < 0.05$, **$p < 0.01$

Summary

This [chapter included] the development and preliminary psychometric testing of the Kim Alliance Scale (KAS), using the retroductive triangulation method (Quayhagen & Quayhagen, 1988) to provide a framework for developing this theory-based instrument. This method proved to be a systematic and logical

> approach in identifying both measured and unmeasured dimensions of alliance. Based on the preliminary psychometric testing, the KAS was refined to a 30-item instrument that measures the four dimensions of the therapeutic alliance including collaboration, communication, integration, and empowerment.
>
> The initial support for reliability and validity of the KAS was demonstrated. The high internal consistency reliability of 0.94 easily satisfied the criteria of Cronbach's alpha (≥ 0.70) for a new instrument (Nunnally & Bernstein, 1994). Also, this measure was found to satisfy the convergent and divergent validity requirements in that the KAS correlated significantly with the ARM, the other measure of alliance, and did not correlate with the MHLC, the divergent measure.... The higher educational level of the subjects and the small sample size limited the generalizability of these findings to other populations. Inclusion of only registered nurses as patients in [Study I] was likely to have introduced a sampling bias. (Kim et al., 2001, p. 326, 328)

To address some of the limitations of the Study I, a further evaluation of the KAS was performed in a clinic population with a larger sample size in Study II.

CHAPTER 4

Method: Study II

The purpose of Study II was to perform further psychometric evaluation of the Kim Alliance Scale (KAS) and to explore the potential application of the KAS in a clinical setting. The specific aims of the study were: (a) to perform reliability and validity testing of the KAS in an adult clinic population; (b) to examine the relationship between the demographic variables and the therapeutic alliance; and (c) to explore usefulness of the KAS as a predictor variable for the patient satisfaction in a clinic population.

To fulfill the above purpose and specific aims of the study, the following research questions were posed: (1) Is the KAS a reliable and valid instrument for measuring the therapeutic alliance in adult clinic patients? (2) What is the relationship between demographic variables and the therapeutic alliance? (3) How much do the demographic variables and the therapeutic alliance predict the patient satisfaction?

This chapter includes the detailed description of the research design, the setting, the sample, and the instrumentation. The procedure for data collection and data analysis techniques are also included.

Research Design

Study II included testing of the psychometric properties of the KAS and a predictive correlational design for exploration of the relationships among the demographic variables, the KAS, and the patient satisfaction. To address the first research

question, the procedures for factorial validity, internal consistency reliability, and convergent/divergent validity of the KAS were performed.

Two separate multiple regression analyses methods were utilized to address the second and third research questions. For the second research question, simultaneous multiple regression model was selected to examine the relationship between the demographic variables and the therapeutic alliance. For the third research question, hierarchical multiple regression model was utilized to test the premise that therapeutic alliance is a stronger predictor of patient satisfaction than the demographic variables. The hierarchical multiple regression model was constructed in which demographic variables were entered in the first block. Then, the predictor variable of the therapeutic alliance was entered in the second block. The patient satisfaction was the dependent variable. This model was used to determine which combination of the therapeutic alliance and demographic variables explain the amount of variance in patient satisfaction.

Setting

Study II was done in an outpatient clinic affiliated with a military hospital in San Diego, California. The outpatient clinic has two different locations and provides medical services to the dependent family members of the active duty military personnel and retirees. This clinic provides a broad array of services from pediatrics to general family medicine and women's health. Each location provides general medical services during the 6,500 to 7,000 visits each month, with a yearly total of between 63,000 to 83,000 visits. The medical team consists of 8 full-time and 2 part-time physicians, 2 full-time and 3 part-time nurse practitioners, and 1 full- time physician assistant. The highest population consists of the pediatric patients who range from 2 to 11 years of age and the

female patients from 18 to 44 years of age. There was a high percentage of minority groups represented in the sample, such as Hispanics and Asian-Pacific Islanders. A convenience sample of adult patients who came to the outpatient clinic were recruited while in the waiting rooms.

Sample

To perform the factor analysis for a newly developed instrument, five to ten subjects per item, with the minimum of five, were recommended (Nunnally & Bernstein, 1994; Polit, 1996; Tinsely & Tinsely, 1987). For the psychometric testing of the KAS, which consists of 30 items, a total of 300 subjects was determined to satisfy the sample size requirements for factor analysis in this study. A power analysis was performed to determine the sample size requirement for multiple regression (Polit, 1996). Since there is no information about the likely value of $\underline{R^2}$, Cohen's (1977) convention of estimating the effect size was utilized (Polit, 1996). Cohen's convention of estimating the effect size stated that the effect will be either small ($\underline{R^2} = 0.02$), moderate ($\underline{R^2} = 0.13$), or large ($\underline{R^2} = 0.30$). The effect size was estimated to be moderate ($\underline{R^2} = 0.13$) for this study. For $\alpha = 0.05$ and a power of 0.80, a sample size of approximately 135 was needed to detect a population $\underline{R^2}$ of 0.13, using 14 predictors. Therefore, to satisfy sample size requirements for both factorial validity and multiple regression, an accrual goal of 300 evaluable subjects was set.

The sample inclusion criteria were: (a) age of 18 or older; (b) two or more encounters with the same health care provider within the past two years; (c) able to speak, read, and understand English language.

A total of 328 eligible patients agreed to participate, of whom 297 patients

completed the study and were evaluable, with a response rate of 91%. The mean age for the sample was 41, with a range of 18 to 66. Because of married military personnel, females (n = 237; 80%) outnumbered males (n = 58; 20%) in a clinic serving military dependents. The ethnic distribution reflected the overall distribution of the clinic population, which is composed of high percentage of minority population including Filipinos, African-Americans, and Mexican-American. In this sample, 44% were Caucasians, while 13%, 31%, and 11% were African-American, Asian-American, and Mexican-American, respectively. Native American and other ethnic groups were represented by 3% of the sample. The educational level of this sample were: 3% had not attained high school diploma, 38% had high school diploma, 37% indicated some college attendance, 17% had college degree, and 5% had some graduate education. Health care providers for the sample were 73% physicians, 22% nurse practitioner, and 5% physician's assistant. The gender of the providers were 55% male and 45% female. The average number of past visits was nine and the average duration of knowing the provider was 26 months.

Instrumentation

A demographic questionnaire and four instruments were used in Study II. The Kim Alliance Scale (KAS) was used to test the quality of the therapeutic alliance, and the Agnew Relationship Measure (ARM) (Agnew-Davies et al., 1998), and the Multidimensional Health Locus of Control (MHLC) (Wallston & Wallston, 1978) were used for testing convergent and divergent validity for the KAS. The Patient Satisfaction with Health Care Provider Scale (PSHCPS) (Marsh, 1999) was used for measuring the patient satisfaction.

Demographic Questionnaire

The descriptive information was collected to provide the information about the background characteristics of the sample. This information was useful in interpreting the findings and making inference to the general population (Polit, 1996). The demographic variables included: age, gender, ethnic origin, educational level, type of the health care provider, gender of the health care provider, the number of past visits with the same health care provider, and the duration of knowing the health care provider.

Kim Alliance Scale (KAS)

The Kim Alliance Scale (KAS) is a 30-item scale that measures the quality of the therapeutic alliance between patient and health care provider from the patient's perspective. It is a 4-point Likert scale ranging from 1 (never), 2 (rarely), 3 (sometimes), to 4 (always). The KAS consists of four dimensions which were integration, communication, collaboration, and empowerment. The report on the development and the preliminary psychometric testing among a sample of 68 registered nurses was described in Chapter 3.

> The alphas for the dimensions ranged from 0.71 for empowerment to 0.87 for communication. Inter-item correlations and item-total correlations of the four dimensions and the total KAS also met the required criteria of ≥ 0.70. The Cronbach's alpha for the total KAS was 0.94. The split-half coefficient alpha, with equal-length Spearman-Brown correlation, was 0.89. The coefficient alphas for each half of the KAS were 0.87 and 0.91, respectively. (Kim et al., 2001, p. 324)

Agnew Relationship Measure (ARM)

The ARM is a 28-item instrument that measures the quality of alliance between therapist and client. It contains five subscales: bond, partnership, confidence, openness, and client initiative. The ARM is a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The authors of the ARM reported factorial validity and internal consistency reliability ranging from 0.77 to 0.87 for four subscales and 0.55 for the client initiative subscale. (Kim et al., 2001, p. 322)

Multidimensional Health Locus of Control (MHLC)

The MHLC is a 36-item instrument that assesses the client's beliefs concerning control of his or her own health status. It consists of three subscales: internal control (IHLC), control by chance (CHLC), and control by powerful others (PHLC). The MHLC uses a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). The reported internal consistency reliability ranged from 0.83 to 0.86. The predictive validity between health status and MHLC showed that the health status correlated positively with IHLC ($r = 0.40$, $p < 0.05$), correlated negatively with CHLC ($r = -0.28$, $p < 0.01$), and did not correlate with PHLC ($r = -0.06$). (Kim et al., 2001, p. 322)

Patient Satisfaction with Health Care Provider Scale (PSHCPS)

The PSHCPS is an 18-item scale that measures the patient satisfaction with primary health care providers (Marsh, 1999). It was modified from the Patient Satisfaction Survey (Cherkin, Hart, & Rosenblatt, 1988), which included four satisfaction dimensions, access, humaneness, quality, and general satisfaction. The response

categories ranged from 1 (strongly disagree) to 5 (strongly agree). The higher summated scores represent higher levels of patient satisfaction. The PSHCPS was tested among 167 patients at the outpatient clinic where they had encounters with nurse practitioners or physicians. The Cronbach's alpha for the total scale was 0.93 and factor analysis supported a unidimensional scale.

Procedure

Study II was approved by the institutional review board, Committee on the Protection of Human Subjects at University of San Diego as well as by the Clinical Investigation Department, the Military Medical Center, San Diego. The potential subjects were approached by the researcher while they were in the clinic waiting room. The informed consent procedure included a brief explanation of the purpose of the study to the potential subjects. The potential subjects were informed of: the voluntary participation; confidentiality and anonymity of the responses; the use of only grouped data for publications; potential risks and benefits of participation of the study; and their freedom to withdraw from the study at any time.

After obtaining signed informed consent, each subject received a packet containing five instruments: Demographics Questionnaire, Kim Alliance Scale (KAS), Agnew Relationship Measure (ARM) (Agnew-Davies et al., 1998), Multidimensional Health Locus of Control (MHLC) (Wallston & Wallston, 1978), and Patient Satisfaction with Health Care Provider Scale (PSHCPS) (Marsh, 1999). The subjects were asked to complete the packet before leaving the clinic.

The estimated duration of subject participation was approximately 45 minutes per subject. The data were collected in a 2-week period. There were no apparent risks to the

subjects. The consent forms and data were stored in separate locked file cabinets. All data were coded and entered into a computer by the researcher and a second person was used to check accuracy of data entry by comparing the original data with that on computer screen.

Data Analysis

The Statistical Package for the Social Sciences (SPSS)-PC software (SPSS Inc., 1999) was employed for all data analysis. The statistical analysis was composed of descriptive statistics, factor analysis, correlation, and regressions among the study variables. The level of significance established for this study was $\alpha = 0.05$. The listwise deletion method was used to handle the missing data.

To evaluate the psychometric properties of the KAS, reliability estimates and construct validation procedures were employed. The exploratory principal component factor analysis with orthogonal varimax rotation was performed to determine the factor structure of the KAS. The internal consistency reliability procedures were employed to investigate the reliability estimates. The convergent and divergent validity testing was performed for construct validation.

Two separate multiple regression analysis methods were utilized. All the variables in the multiple regression were assumed to be continuous. The variables of gender, ethnicity, and health care provider type in this study were categorical independent variables. The numbers were assigned to these categorical variables so that they could be nominal level independent variables. However, the raw data of nominal level variables had no inherent quantitative meaning and could not be sensibly interpreted in the regression analysis. Dummy coding system was used to recode the nominal level of

categorical variables. Dummy coding involves a creation of dichotomous variable or binary variable, that a variable is coded either as a one or as a zero. The code of 1 is used to designate membership, while 0 is used to designate nonmembership. This recoding system allows for quantitatively meaningful interpretation of the regression coefficients (Allen, 1997; Munro & Page, 1993; Polit, 1996).

The simultaneous multiple regression model was selected for the first multiple regression to examine the relationship between the demographic variables and the therapeutic alliance. The KAS score was selected as the dependent variable and the 13 demographic variables were chosen as independent or predictor variables. The predictor variables included patient's age, patient and provider gender, 5 dummy-coded ethnicity variables, educational level, 2 dummy-coded health care provider type variables, duration of therapeutic relationship, and the number of past visits. The simultaneous multiple regression model was used because all the independent predictor variables were considered on an equal basis without any prior theoretical preference for the order of predictor variable entry.

For the second multiple regression analysis, the hierarchical model was utilized to test the premise that therapeutic alliance is a stronger predictor of patient satisfaction than the demographic variables. The patient satisfaction was the dependent variable. The predictor variables included the 13 demographic variables described above and the KAS. The hierarchical multiple regression model was constructed in which demographic variables were entered in the first block. Then, the predictor variable of therapeutic alliance was entered in the second block.

The residual analysis was performed to test the linear model assumptions of

regression procedure. Histograms and scatterplots were examined to ascertain normality, homoscedasticity, and linearity. The data was transformed if the residual analysis indicated violation of the assumption. To achieve normality and linearity between two variables, transformation procedure of the data by taking logs was employed to stabilize variance by reducing nonlinearity (Allen, 1997).

Multicollinearity of the predictor variables was also tested by examining the bivariate correlation matrix and by performing the collinearity diagnostics. The collineariy diagnostics assessed the tolerance of predictor variables. Tolerance ranges between 0.00 and 1.00, with higher values being more desirable (Fox, 1991; Munro & Page, 1993; Polit, 1996).

The output of the regression equation was examined for the unstandardized coefficient (B), the standardized coefficient (Beta), the multiple regression coefficient (R), and the amount of variance explained (R^2). The value of R^2 change, the value of overall regression (F), the significance of the overall regression, and the significance of individual predictors were also reported.

Summary

This chapter described the methodology used in Study II. The goal of the study was to evaluate psychometric properties of the KAS and its usefulness in the outpatient clinic setting. The setting, sample characteristics, procedures for data collection, additional instrumentation, and data analysis method were described. The results of data analysis including factor analysis and multiple regression procedures are presented in the following chapter.

CHAPTER 5

Results: Study II

Three study research questions were posed. They were: (1) Is the KAS a reliable and valid instrument for measuring the therapeutic alliance in adult clinic patients? (2) What is the relationship between demographic variables and the therapeutic alliance? (3) How much do the demographic variables and the therapeutic alliance predict the patient satisfaction?

Regarding the question 1, construct validation and reliability estimates procedures were employed to assess psychometric properties of the KAS. The construct validation procedures included factor analysis to determine the factor solution and the convergent and divergent validity testing for the KAS. Internal consistency reliability procedures were employed to investigate the reliability estimates for the factor solution of the KAS (Waltz et al., 1991). To examine the research questions 2 and 3, multiple regression analysis procedures were performed.

The SPSS was used for all data analysis. The level of significance established for this study was $\alpha = 0.05$. The listwise deletion method was used to handle the missing data. Table 5.1 shows the summary of the descriptive statistics.

Table 5.1

Descriptive Statistics of the Variables (N = 297)

	N (%)	M	SD	Range
Gender				
Male	58 (19.5%)			
Female	237 (79.8%)			
Ethnicity				
Caucasian	130 (43.8%)			
African American	37 (12.5%)			
Hispanic	23 (10.8%)			
Asian/Pacific Islander	91 (30.6%)			
Native American	2 (0.7%)			
Other	5 (1.7%)			
Health care Provider Type				
Medical Doctor (MD)	214 (72.1%)			
Nurse Practitioner (NP)	63 (21.2%)			
Physician's Assistant (PA)	16 (5.4%)			
Health care Provider Gender				
Male	160 (53.9%)			
Female	132 (44.4%)			
Age (Years)	297	40.7	12.6	18-66
Education (Years)	297	13.6	2.2	0-20
Number of Visits	292	9.0	13.2	2-144
Duration (Months)	295	25.6	28.2	1-210
18-item PSHCPS Score	297	73.0	13.1	27-90
4-item General Satisfaction Subscale Score	296	14.7	4.1	4-20
28-item KAS Score	297	101.2	10.9	52-112

Psychometric Evaluation in the Clinic Population

The evaluation of psychometric properties of the KAS was performed to answer the research question 1: Is the KAS a reliable and valid instrument for measuring the therapeutic alliance in adult clinic patients?

Factor Analysis

Factor analysis is a powerful statistical technique used during the instrument-development process for validation of the construct validity of a newly developed instrument. Factor analysis clusters a large number of items into a smaller set of latent variables called factors. The factor is a group of intercorrelated items that may belong together. This factoring process reduces the complexity of the relationship among items by identifying the underlying relationships. Thus, the factors represent the underlying dimensions or structures of the instrument. The ultimate purpose of factor analysis is data reduction and item selection. By using the smallest number of explanatory concepts, factor analysis enhances the parsimony and the simplicity of explanation (Kachigan, 1991; Munro & Page, 1993; Nunnally & Bernstein, 1994; Tabachnick & Fidell, 2001; Tinsely &Tinsely, 1987).

There are two types of factor analysis, exploratory and confirmatory. The exploratory factor analysis is used in the initial and early stage of the instrument-development process to explore the construct and to assess the instrument for construct validity. Confirmatory factor analysis is a more complex procedure that tests the hypotheses regarding the structure of variables.

In exploratory factor analysis, extraction and rotation techniques are commonly

employed. The goal of extraction is to identify the number of factors through the process of clustering the intercorrelated items to maximize the variance. Two extraction methods, the principal component analysis (PCA) and principal-axis factoring (PAF), are available. The principal component analysis (PCA), which extracts the maximum variance from the data set with communality estimated in the diagonals of the item correlation matrix, is recommended in the early stages of instrument development. Following extraction, rotation technique is used to make factor loadings more interpretable (Gorsuch, 1990: Tabachnick & Fidell, 2001).

The exploratory principal component factor analysis with orthogonal varimax rotation was performed in Study II. The orthogonal rotation technique with the varimax procedure minimizes the complexity of factors and provides the simple structure by maximizing the variance of loadings on each factor and facilitating the clarity and interpretability of the factors. While the orthogonal rotation technique assumes that the factors are uncorrelated, oblique rotation is recommended when there is the assumption that the factors are correlated. In this study, orthogonal rotation was chosen, because the number of iterations was increased up to 30 when the oblique rotation technique was employed.

The criteria for determining the final items for each factor included simple structure and meaningful interpretability (Tabachnick & Fidell, 2001). The simple structure indicates that subscale contains all items loading on one and only one factor. The meaningful interpretability refers to that each factor represents a meaningful interpretation of the underlying structure. Criteria for extraction included eigenvalues of 1.00 or above, total variance explained by each factor, scree plot, simple structure, and

salient loadings. Eigenvalues are measures of the explained variance. For the study, the factors that have eigenvalue 1.00 or above were retained. Simple structure was assessed to see if an item loads on one and only one factor at a level of 0.40 or better. Items which loaded at 0.40 or above were retained within each factor as valid for meaningful interpretation of the dimension. The retained set of factors were accounted for the total amount of variance.

For this sample (listwise deletion, $\underline{n} = 250$), the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA) was 0.929. KMO-MSA helps to determine whether the data are adequate for factor analysis. As the value of KMO-MSA approximates 1, it indicates that a factor analysis is an appropriate approach (Tabachnick & Fidell, 2001).

Six factors (components) emerged from factor analysis, which had met the eigenvalue ≥ 1.00 criterion. The salient factor loading of each item ranged from 0.44 to 0.86 for the six factors (see Table 5.2). The eigenvalue of the first factor was 11.6, which accounted for 38.6% of the variance. The remaining factors accounted for 6.3%, 4.8%, 4.2%, 3.8%, and 3.6% of the variance, respectively. The combined six factors accounted for 61.5% of the total variance. A scree plot showed a strong first factor with the remaining factors contributing smaller, yet significant accounting of the variance.

With the six factor 30-item solution, 6 items (k1, k3, k8, k10, k13, k18) were loaded on more than one factor. These six items were distributed to one factor based on the clinical judgement of an expert panel of a physician and two doctorally-prepared researchers. The criteria used were the magnitude of factor loading, interpretability, conceptual clarity, and consistency within each factor.

Item k1, "My provider and I work well together," and item k3, "I have a good

rapport with my provider," loaded on both factor 1 and factor 2 (0.50 and 0.53, respectively for item k1; 0.61 and 0.55, respectively for item k3). Both items were left in factor 2 based on the clinical judgment and the consistency with the items of factor 2, which included rapport and understanding between provider and patient.

Items k8 and k10 loaded on both factors 1 and 3. However, they were both left in the higher loading factor 3 based on consistency within the factor, which comprised of items depicting an active partnership of the patient.

Item k13, "I and my provider have same goals", and item k18, "We have mutual goals for my care", loaded on both factors 1 and 4, with higher loadings on factor 1. However, both items were moved to factor 4 because the other items in the factor 4 delineate the concept of establishing and reaching the goals.

Factor 1, comprised of 11 items, contains a mixture of items from all four of the original theoretical dimensions. However, factor 1 represented predominantly items from the communication dimension (5 out of 11 items). Most of these items from the original communication dimension have underlying attribute of supportive atmosphere. Items from other original dimensions also describe similar supportive attributes, such as positive feedback, encouraging, and respect. Following careful examination of the item grouping, this factor 1 was renamed bonding.

Factor 2 was named connecting because the patient and the provider connected through plain language and ease of understanding, with rapport and working together.

Factor 3 contained three items from the original collaboration dimension, one item each from communication and empowerment dimensions. However, all five items indicated the power sharing and active partnership. Thus, factor 3 was renamed

partnering.

Factor 4 was consistent with the attributes of original collaboration dimension. Three of five items were from the original collaboration dimension and all five items had the underlying attributes of the patient's cooperation and participation in goal setting and reaching the goal. Therefore, the factor 4 was named goal-setting.

All of the items in factor 5 were items that were originally written in a negative orientation. A total of four items worded in a negative orientation were included in the KAS with the intention of controlling the effects of acquiescence and response bias. Three out of the four negatively oriented items were grouped together into factor 5. However, close examination of the three items revealed their own distinct concept, which was opposite to the concept of therapeutic alliance. It was suggested that the separate loadings of the positively and negatively worded items on the different factors indicate bivariate dimensionality of the concept (Glaser & Wilcove, 2000; Miller & Cleary, 1993). Thus, factor 5 was renamed alienating.

Factor 6 had eigenvalue of 1.091 and accounted for 3.6% of the variance. This factor had only 2 items, k23 "I am free to refuse my provider's recommendations" and k25 "I cannot really care for my own health". These two items were deleted because there was little consistency between the two items and were difficult to interpret.

The reduced 28-item, five factor solution did not retain the original theoretical dimensions. There was a mixture of items from the original theoretical dimensions in each of the five factors. Thus, the five factors were renamed differently from the original four theoretical dimensions. The alienating subscale was a new addition to the instrument, measuring deficiency in the quality of the therapeutic alliance (see Table 5.3).

Table 5.2

Factor Analysis: 30-item KAS with PCA Extraction with Varimax Rotation (n = 250)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
K28	0.77					
K29	0.75					
K12	0.74					
K27	0.73					
K30	0.72					
K14	0.68					
K7	0.66					
K11	0.64					
K20	0.62					
K22	0.62					
K15	0.62					
K3	0.61	0.55				
K18	0.60			0.43		
K13	0.53			0.44		
K2		0.79				
K26		0.58				
K1	0.50	0.53				
K4			0.66			
K9			0.64			
K5			0.57			
K10	0.48		0.54			
K8	0.41		0.46			
K17				0.85		
K16				0.73		
K19				0.40		
K6					0.72	
K24					0.57	
K21					0.54	
K25						0.71
K23						0.63

Table 5.3

Factor Loadings of 28-item KAS from the Factor Matrix (n = 250)

Item	Original subscale[a]	Factor 1[b]	Factor 2[c]	Factor 3[d]	Factor 4[e]	Factor 5[f]
K7	C	0.66				
K11	C	0.64				
K12	I	0.74				
K14	C	0.68				
K15	I	0.62				
K20	E	0.62				
K22	COL	0.62				
K27	E	0.73				
K28	I	0.77				
K29	C	0.75				
K30	C	0.72				
K1	COL		0.53			
K2	C		0.79			
K3	C		0.55			
K26	C		0.58			
K4	COL			0.66		
K5	COL			0.57		
K8	C			0.46		
K9	COL			0.64		
K10	E			0.54		
K13	COL				0.44	
K16	COL				0.73	
K17	E				0.85	
K18	COL				0.43	
K19	I				0.40	
K6	C					0.72
K21	I					0.54
K24	C					0.57
Eigenvalue		11.6	1.9	1.4	1.3	1.2
% of Variance Explained		38.6%	6.3%	4.8%	4.2%	3.8%

Note. [a] C: Communication, I: Integration, COL: Collaboration, E: Empowerment
[b] Factor 1: Bonding, [c]Factor 2: Connecting, [d]Factor 3: Partnering,
[e]Factor 4: Goal-setting, [f]Factor 5: Alienating.

Reliability Estimation

Internal consistency reliability estimates were performed on the each of the five subscales of 28-item KAS by calculating Cronbach's coefficient alpha. The inter-item correlation mean and corrected item-total correlations were obtained for each subscale. The desired Cronbach's alpha and inter-item correlation means were ≥ 0.70 and ≥ 0.25, respectively (Nunnally & Bernstein, 1994). Items with inter-item correlation above 0.70, which indicates high correlation, were examined for possible redundancy (Munro & Page, 1993). The criteria for retaining items were that the r is greater than 0.30 for the item-total correlations (Nunnally & Bernstein, 1994).

For the bonding subscale with 11 items, the inter-item covariances were low, ranging from 0.10 to 0.29. The item-total correlations of the 11-item bonding subscale ranged from 0.55 to 0.79. The inter-item correlation mean was 0.52. None of the inter-item correlations were above 0.70 except for one pair of items, k28 and k29, in which the inter-item correlation was 0.71. Item k28, "I feel my provider supports my point of view", and item k29, "My provider gives me positive feedback", were reviewed for conceptual redundancy. Item k28 was found to be originating from the integration dimension whereas item k29 originated from the communication dimension, and the two items covered conceptually distinct attributes. In addition, the inter-item correlation of 0.71 was just barely above the cut-off point of 0.70. Therefore, the two items were both retained. The Cronbach's alpha for the bonding subscale with 11 items was 0.92.

For the connecting subscale with 4 items, the inter-item covariances ranged from 0.07 to 0.19. The item-total correlations ranged from 0.49 to 0.73. In this subscale, one pair of items, k1 and k3 were outside the retention criteria, with the inter-item correlation

of 0.71. The item k1, "My provider and I work well together", and item k3, "I have good rapport with my provider", were reviewed for conceptual redundancy. Item k1 was found to be originating from the collaboration dimension whereas item k3 originated from the communication dimension. Even though the two items had conceptually similar attributes, both items were retained in view of the inter-item correlation of 0.71, which was just barely above the cut-off point of 0.70. The Cronbach's alpha for connecting subscale with 4 items was 0.81.

For the partnering subscale with 5 items, the inter-item covariances ranged from 0.07 to 0.25. The item-total correlations ranged from 0.39 to 0.55. The inter-item correlations mean was 0.33. None of the inter-item correlations were above 0.70. The Cronbach's alpha for partnering subscale with 5 items was 0.70.

For the goal-setting subscale with 5 items, the inter-item covariances ranged from 0.08 to 0.22. The item-total correlations ranged from 0.50 to 0.60. The inter-item correlations mean was 0.40. None of the inter-item correlations were above 0.70. The Cronbach's alpha for the goal-setting subscale with 5 items was 0.77.

Finally, for the alienating subscale with 3 items, the inter-item covariances ranged from 0.13 to 0.31. The item-total correlations ranged from 0.37 to 0.50. The inter-item correlations mean was 0.35. None of the inter-item correlations were above 0.70. The Cronbach's alpha for the alienating subscale with 3 items was 0.62, which was below the desired reliability criteria. However, the items in this subscale were retained since they were the only negatively oriented items in the entire instrument that can control for the effects of acquiescence (Miller & Cleary, 1993).

All the subscales met the required criteria for Cronbach's alpha (≥ 0.70) except

for the alienating subscale. Inter-item correlations and item-total correlations of all five subscales also met the required criteria. The Cronbach's alpha for the total 28-item KAS was 0.94. The split-half coefficient alpha, with equal-length Spearman-Brown correlation, was 0.91. The coefficient alphas for each half of the 28-item KAS were 0.88 and 0.89, respectively (see Table 5.4).

Table 5.4

Internal Consistency Reliability Estimates of 28-item KAS (N = 297)

Types	Determinants				
	Subscales	# of Items	Range Item-total Correlation	Mean Inter-item Correlation	Alpha[a]
Cronbach's Alpha					
	Bonding	11	0.55 - 0.79	0.52	0.92
	Connecting	4	0.50 - 0.73	0.52	0.81
	Partnering	5	0.39 - 0.55	0.33	0.70
	Goal-setting	5	0.50 - 0.60	0.40	0.77
	Alienating	3	0.37 - 0.50	0.35	0.62
	Total KAS	28	0.24 - 0.77	0.36	0.94
Split-Half[b]					
	Part 1	14			0.88
	Part 2	14			0.89

[a] Coefficient Alpha

[b] Correlation between Part 1 and Part 2 (Spearman-Brown Correlation) = 0.91

Dimensionality

The Pearson product-moment correlation procedure was performed to determine if the 28-item KAS was a multidimensional or an unidimensional instrument. Multidimensionality suggests that the dimensions are independent of each other and empirically separate subscales. Unidimensionality suggests that the dimensions are dependent on each other as a single unitary scale. The criterion for independent dimensions is a correlation coefficient $r < 0.70$ (Munro & Page, 1993). Of the 28-item KAS, each dimension was found to have a low to moderate positive correlation with the other dimensions (r ranged from 0.32 to 0.67, $p < 0.01$). These low to moderate correlations supported the premise that the five subscales in the 28-item KAS are reasonably independent of each other (see Table 5.5).

Table 5.5

Correlations of Dimensions of 28-item KAS

	Bonding	Connecting	Partnering	Goal-setting	Alienating
Bonding		0.67	0.62	0.63	0.49
Connecting			0.56	0.49	0.45
Partnering				0.52	0.36
Goal-setting					0.32
Alienating					

Construct Validity

The support for convergent and divergent validity of the 28-item KAS was investigated by testing the correlation with other existing instruments. It was assumed that there is a higher correlation between two constructs if they measure the same trait or construct (convergent validity). The divergent validity was tested based on the assumption that there is a lower correlation between two constructs if these two constructs measure the related but independent traits or constructs.

For testing convergent and divergent validity of the 28-item KAS, two hypotheses were developed: that positive correlation would exist between the KAS and the ARM, and that low correlation would exist between the KAS and the three subscales of the MHLC. The ARM was selected as an appropriate measure for convergent validity because both KAS and ARM measure alliance. The MHLC was selected as an appropriate measure for divergent validity because control, whether attributed to self or others, presupposes a dominant-subservient relationship. In contrast, alliance as defined in the KAS assumes a balanced or equalized relationship. Since both control and alliance are found in various health care situations, the MHLC measure of the control concept was selected for the testing of divergent validity. The results of testing were as expected. The KAS correlated highly with the ARM ($r = 0.78$, $p < 0.01$), indicating that these two instruments measure a similar construct. Further, as predicted, the KAS did not correlate with any of three MHLC subscales ($r = 0.10$, - 0.11, and 0.09, respectively, for IHLC, CHLC, and PHLC), indicating that these two instruments measure different constructs (see Table 5.6).

Table 5.6

Construct Validity Testing of 28-item KAS

	KAS	ARM	IHLC	CHLC	PHLC
KAS					
ARM	0.78**				
IHLC	0.10	0.13*			
CHLC	- 0.11	- 0.19*	0.05		
PHLC	- 0.09	0.05	0.22	0.42**	

*$p < 0.05$, **$p < 0.01$

In summary, the psychometric evaluation of the KAS in this Study II indicated that the KAS was internally consistent and valid in measuring the quality of the therapeutic alliance. The revised 28-items KAS is composed of five subscales: bonding, connecting, partnering, goal-setting, and alienating.

Predictive Correlation

Two separate multiple regression procedures were performed to address the research questions 2 and 3. For the question 2, simultaneous multiple regression model was used because all the independent predictor variables (the demographic variables) were considered on an equal basis without any prior theoretical preference for the order of predictor variable entry. For the question 3, the hierarchical multiple regression model was used to test the premise that the therapeutic alliance is a stronger predictor of the patient satisfaction than the demographic variables. A hierarchical multiple regression

model was constructed in which demographic variables were entered in the first block. Then, the predictor variables of therapeutic alliance were entered in the second block. The demographic variables included age, gender, 5 dummy-coded ethnicity, education, 2 dummy-coded health care provider type, health care provider gender, number of visits, and duration.

The output of the regression equation was examined for the unstandardized coefficient (B), the standardized coefficient (Beta), the multiple regression coefficient (R), the amount of variance explained (R^2), the value of R^2 change, value of overall regression (F), the significance of the overall regression, and the significance of individual predictors. The level of significance established for this study was $\alpha = 0.05$.

Residual analysis was performed to test the linear model assumptions, including normality, homoscedasticity, and linearity. The histogram and the scatterplot of the standardized residuals were examined for normality, homoscedasticity, and linearity.

Multicollinearity among the predictor variables can cause significant problems in the multiple regression analysis. First, the inclusion of highly intercorrelated variables falsely elevate the critical value of F which is required to reject the null hypothesis. Secondly, the calculation of the regression coefficient is unstable with highly intercorrelated predictor variables, resulting in unreliable interpretation of the results (Fox, 1991; Munro & Page, 1993). The bivariate correlation matrix of the predictor variables was examined (see Table 5.7). As expected, none of the predictor variables were highly intercorrelated. However, bivariate correlation alone is not sufficient to detect multicollinearity. Therefore, collinearity diagnostics, as determined by tolerance, were also performed to test the interrelatedness of the predictor variables. The value of

tolerance is between 0.00 and 1.00, with higher values being more desirable (Munro & Page, 1993; Polit, 1996). The collinearity diagnostics revealed that none of the demographic variables were highly intercorrelated as shown by the high tolerance close to 1.00, except for those variables where dummy coding was required (see Tables 5.10 & 5.11). The variables with dummy coding, including the ethnicity and health care provider type, were expected to have high intercorrelation or low tolerance.

Table 5.7

Correlation Matrix of Predictor Variables (n = 285)

	Eth1	Eth2	Eth3	Eth4	Eth5	HCP1	HCP2	Age	Edu	Gend	Pgend	Visit	Dur	Bond	Con	Partn	Goal	Alien
Eth1	1.000																	
Eth2	-.344	1.000																
Eth3	-.311	-.135	1.000															
Eth4	-.575	-.250	-.226	1.000														
Eth5	-.075	-.032	-.029	-.054	1.000													
HCP1	-.112	-.134	.015	.194	.052	1.000												
HCP2	.138	.078	-.045	-.168	-.044	-.843	1.000											
Age	.040	-.139	-.080	.130	-.069	.231	-.252	1.000										
Edu	-.041	.042	-.071	.068	-.025	.007	-.018	.095	1.000									
Gend	-.002	.000	.140	-.119	.041	-.159	.187	-.361	-.095	1.000								
Pgend	.072	.084	-.051	-.087	-.078	-.420	.497	-.230	.060	.212	1.000							
Visit	.013	-.001	.009	-.045	.033	.105	-.085	.057	-.014	.018	-.120	1.000						
Dur	-.082	-.072	.019	.095	-.021	-.043	.054	.149	-.001	-.007	-.034	.274	1.000					
Bond	.095	-.068	.020	-.074	.062	-.163	.168	.042	-.109	.025	.009	.010	.048	1.000				
Con	.131	-.024	-.060	-.092	.051	-.042	.077	.084	-.071	-.054	-.009	.104	.074	.665	1.000			
Partn	.176	-.035	-.018	-.163	-.035	-.134	.119	-.020	-.053	.013	.097	-.042	.002	.619	.555	1.000		
Goal	.058	-.095	-.062	.019	.043	-.015	.009	.134	.027	-.007	-.032	-.042	.042	.625	.488	.514	1.000	
Alien	.130	-.054	-.001	-.112	-.005	-.168	.189	-.091	.046	.142	.092	.053	-.002	.498	.459	.366	.319	1.000

Note. Eth1,2,3,4,5=Dummy coded ethnicity: Eth1=CAUCASIAN; Eth2=AFRICAN; Eth3=HISPANIC; Eth4=ASIAN; Eth5=NATIVE. HCP1,2=Dummy coded heathcare provider type: HCP1=MD; HCP2=NP. Edu=Educational level. Gend=Patient's gender. Pgend=Provider's gender. Visit=Number of visits. Dur=Duration of knowing the provider. Bond=Bonding subscale. Con=Connecting subscale. Partn=Partnering subscale. Goal=Goal-setting subscale. Alien=Alienating subscale.

Simultaneous Multiple Regression Analysis

Simultaneous multiple regression analysis was employed to answer research question 2: What is the relationship between demographic variables and the therapeutic alliance?

First, the residual analysis was assessed to test the assumptions of multiple regression analysis (listwise deletion, $n = 286$). The histogram and the scatterplot of the standardized residuals showed negative skewedness, indicating violation of the normality assumption. The assumptions of linearity and homoscedasticity were marginally met. With the evidence that an assumption has been violated, the possibility of addressing the problem through transformation of the original data was explored (Polit, 1996). The dependent variable was log transformed, which improved the normality of residuals and satisfied the assumptions.

Prior to the transformation, simultaneous multiple regression analysis revealed that the combination of all 13 predictor variables accounted for 5.8% of the variance in the dependent variable, therapeutic alliance (R^2 change = 0.058, $p = 0.223$). The overall equation was not significant ($F = 1.282$, $p > 0.05$). None of the predictor variables was significant in predicting the therapeutic alliance (see Table 5.8). Following the log transformation of the original data, a repeated simultaneous multiple regression analysis showed that the combination of all 13 predictor variables accounted for 8% of the variance in the therapeutic alliance (R^2 change = 0.080, $p = 0.040$). The overall equation was significant ($F = 1.821$, $p < 0.05$). However, none of the predictor variables individually reached significance in predicting the therapeutic alliance (see Table 5.9).

Table 5.8

Simultaneous Multiple Regression Analysis: Therapeutic Alliance Scores regressed on the Demographic Variables (n = 286)

Multiple R = 0.240		df	F	Sig.
R^2 = 0.058	Regression	13	1.282	0.223
	Residual	272		

Predictor variables	r	B	Beta	Sig.
Age	0.042	0.076	0.088	0.189
Education	- 0.068	- 0.307	- 0.061	0.306
Number of Visits	0.015	0.007	0.008	0.894
Duration	0.046	0.010	0.023	0.715
CAUCASIAN	0.136*	- 0.636	- 0.029	0.900
AFRICAN	- 0.074	-4.104	- 0.125	0.439
HISPANIC	- 0.017	-2.440	- 0.069	0.646
ASIAN	- 0.097	-3.272	- 0.136	0.520
NATIVE	0.037	4.135	0.031	0.654
MD	- 0.146**	-1.985	- 0.081	0.467
NP	0.153**	2.861	0.107	0.356
Patient Gender	0.031	0.660	0.024	0.717
Health care Provider Gender	0.032	- 0.747	- 0.034	0.628

*p < 0.05 **p < 0.01 ***p < 0.001

Table 5.9

Log Transformation of Simultaneous Multiple Regression Analysis: Therapeutic Alliance Scores regressed on the Demographic Variables (n = 286)

Multiple R = 0.283		df	F	Sig.
R^2 = 0.080	Regression	13	1.821	0.040
	Residual	272		

Predictor variables	r	B	Beta	Sig.
Age	- 0.004	- 0.002	- 0.064	0.335
Education	0.044	0.005	0.026	0.658
Number of Visits	- 0.043	- 0.001	- 0.045	0.465
Duration	- 0.041	- 0.000	- 0.009	0.880
CAUCASIAN	- 0.169**	0.013	0.014	0.949
AFRICAN	- 0.106*	0.213	0.163	0.308
HISPANIC	- 0.011	0.072	0.052	0.729
ASIAN	0.123*	0.140	0.147	0.483
NATIVE	- 0.011	-0.009	- 0.002	0.981
MD	0.180***	0.107	0.110	0.319
NP	- 0.185***	- 0.114	- 0.107	0.349
Patient Gender	- 0.090	- 0.078	- 0.070	0.274
Health care Provider Gender	- 0.051	0.037	0.042	0.546

*p <0.05 **p < 0.01 ***p < 0.001

Hierarchical Multiple Regression Analysis

Hierarchical multiple regression analysis was performed to answer the research question 3: How much do the demographic variables and the therapeutic alliance explain the patient satisfaction?

The residual analysis was assessed first to test the assumptions of multiple regression analysis. The histogram of the residuals showed normal distribution around a mean of zero. The scatterplot of the standardized residuals showed that the linearity and homoscedasticity assumptions were marginally met. Out of 297 subjects, 11 were deleted from analysis because of missing data. One subject was found to be an outlier, who had Patient Satisfaction with Health Care Provider Scale (PSHCPS) score of more than 5 standard deviations away from the mean. Close examination of the raw data showed that the subject failed to complete one page of the Patient Satisfaction with Health Care Provider Scale. This subject was deleted from analysis.

Hierarchical multiple regression model was used to test the premise that the therapeutic alliance is a stronger predictor of the patient satisfaction than the demographic variables. Demographic variables were entered in the first block. The combination of all 13 predictor variables accounted for 10.9% of the variance in the dependent variable, 18-item PSHCPS score ($R^2 = 0.109$, $p = 0.002$). The overall equation was significant ($F = 2.549$, $p < 0.01$). Following entry of the therapeutic alliance score, as a single total score, the combination of the 14 predictor variables accounted for 57.4% of the variance in the PSHCPS score ($R^2 = 0.574$, $p = 0.000$). The overall equation was significant ($F = 294.710$, $p < 0.001$). The entry of the therapeutic alliance score in the second block changed the R^2 by 0.465, indicating that the therapeutic alliance accounts for 46.5% of

the variance in the PSHCPS score (see Table 5.10).

An alternate hierarchical multiple regression analysis was performed with the 4-item General Satisfaction Subscale score as the dependent variable in place of the entire 18-item PSHCPS score. This alternate analysis was done because the 18-item PSHCPS contain items that may overlap with those in the KAS. Demographic variables were entered in the first block. The combination of all 13 predictor variables accounted for 18.8% of the variance in the dependent variable, 4-item General Satisfaction Subscale score ($R^2 = 0.188$, $p = 0.000$). Following entry of the therapeutic alliance score, as a single total score, the combination of the 14 predictor variables accounted for 55.7% of the variance in the 4-item General Satisfaction Subscale score ($R^2 = 0.557$, $p < 0.001$). The entry of the therapeutic alliance score in the second block changed the R^2 by 0.369, indicating that the therapeutic alliance accounts for 36.9% of the variance in the 4-item General Satisfaction Subscale score. Three demographic variables, NP (nurse practitioner), educational level, and number of visits, were significant in predicting the 4-item General Satisfaction Subscale score (Beta = 0.187, - 0.088, and 0.168; $p = 0.020$, 0.034, and 0.000, respectively), as well as the therapeutic alliance (Beta = 0.626, $p = 0.000$) (see Table 5.11).

The five subscales of the therapeutic alliance were entered in the second block in place of the single total therapeutic alliance score to examine which dimensions of the KAS influence the 4-item General Satisfaction Subscale score. The combination of the 18 predictor variables (13 demographic + 5 subscales) accounted for 58.3% of the variance in the 4-item General Satisfaction Subscale score ($R^2 = 0.583$, $p = 0.000$). The overall equation was significant ($F = 50.327$, $p < 0.001$). The entry of the five therapeutic

alliance subscales in the second block changed the R^2 by 0.395, indicating that the five subscales of therapeutic alliance accounts for 39.5% of the variance in the 4-item General Satisfaction Subscale score.

Two demographic variables, NP (nurse practitioner) and number of visits, were significant in predicting the 4-item General Satisfaction Subscale score (Beta = 0.159, 0.156; $p = 0.044$ and 0.000, respectively), as well as the bonding and connecting subscales (Beta = 0.512, 0.138; $p = 0.000$ and 0.017, respectively) (see Table 5.12).

Summary

This chapter presented the results of the data analysis for Study II including psychometric evaluation and multiple regression analysis to answer the three research questions. The psychometric evaluation resulted in the 28-item KAS with five subscales. The combination of all 13 demographic variables accounted for 8% of the variance in the therapeutic alliance, while the therapeutic alliance alone accounted for 36.9% of the variance in the 4-item General Satisfaction Subscale score.

Table 5.10

Hierarchical Multiple Regression Analysis: 18-item Patient Satisfaction Scores regressed on Demographic Variables and Therapeutic Alliance (n = 285)

Predictor Variables	B	Beta	Sig.	Collinearity Statistics: Tolerance
Step 1				
CAUCASIAN	2.895	0.111	0.617	0.066
AFRICAN	2.564	0.067	0.673	0.132
HISPANIC	4.369	0.105	0.473	0.153
ASIAN	0.023	0.001	0.997	0.078
NATIVE	14.594	0.094	0.167	0.709
MD	-1.876	- 0.065	0.548	0.281
NP	4.216	0.134	0.236	0.258
Age	0.163	0.160	0.015*	0.778
Education	- 0.746	- 0.124	0.034*	0.969
Gender	1.274	0.039	0.542	0.821
Healthcare Provider Gender	0.794	0.031	0.652	0.712
Number of Visits	0.143	0.146	0.017*	0.894
Duration	0.008	0.015	0.810	0.858
Step 1 R= 0.330, R^2= 0.109, R^2 Change= 0.109, F(13,271)=2.549, Sig.= 0.002**				
Step 2				
CAUCASIAN	3.453	0.133	0.390	0.066
AFRICAN	6.008	0.156	0.155	0.132
HISPANIC	6.403	0.154	0.130	0.153
ASIAN	2.821	0.100	0.485	0.078
NATIVE	11.196	0.072	0.127	0.708
MD	- 0.234	- 0.008	0.914	0.280
NP	1.852	0.059	0.453	0.258
Age	0.102	0.100	0.028*	0.774
Education	- 0.521	- 0.087	0.033*	0.966
Gender	0.767	0.023	0.596	0.820
Healthcare Provider Gender	1.400	0.054	0.253	0.711
Number of Visits	0.139	0.142	0.001**	0.894
Duration	- 0.000	0.000	0.999	0.858
28-item KAS	0.828	0.702	0.000***	0.943
Step 2 R= 0.758, R^2= 0.574, R^2 Change= 0.465, F Change(1,270)=294.710, Sig=***				

*p <0.05 **p < 0.01 ***p < 0.001

Table 5.11

Hierarchical Multiple Regression Analysis: 4-item General Satisfaction Subscale Scores regressed on Demographic Variables and Therapeutic Alliance (n = 285)

Predictor Variables	B	Beta	Sig.	Collinearity Statistics: Tolerance
Step 1				
CAUCASIAN	1.178	0.144	0.500	0.066
AFRICAN	0.712	0.059	0.697	0.132
HISPANIC	1.289	0.098	0.484	0.153
ASIAN	-1.002	- 0.112	0.568	0.078
NATIVE	1.887	3.176	0.553	0.709
MD	0.102	0.011	0.914	0.281
NP	2.526	0.254	0.019*	0.258
Age	0.044	0.137	0.028*	0.778
Education	- 0.230	- 0.121	0.030*	0.969
Gender	0.345	0.033	0.584	0.821
Healthcare Provider Gender	0.293	0.036	0.581	0.712
Number of Visits	0.053	0.172	0.003**	0.894
Duration	0.000	0.005	0.939	0.858
Step 1 R=0.433, R^2=0.188, R^2 Change=0.188, F(13,271)=4.820, Sig.=0.000***				
Step 2				
CAUCASIAN	1.335	0.163	0.302	0.066
AFRICAN	1.680	0.139	0.216	0.132
HISPANIC	1.855	0.142	0.172	0.153
ASIAN	- 0.216	- 0.024	0.868	0.078
NATIVE	0.932	0.019	0.692	0.708
MD	0.564	0.062	0.419	0.280
NP	1.861	0.187	0.020*	0.258
Age	0.027	0.084	0.070	0.774
Education	- 0.167	- 0.088	0.034*	0.966
Gender	0.202	0.019	0.664	0.820
Healthcare Provider Gender	0.463	0.057	0.239	0.711
Number of Visits	0.052	0.168	0.000***	0.894
Duration	- 0.001	- 0.009	0.840	0.858
28-item KAS	0.232	0.626	0.000***	0.943
Step 2 R= 0.746, R^2= 0.557, R^2 Change= 0.369, F Change(1,270)=224.947, Sig.=***				

*p <0.05 **p < 0.01 ***p < 0.001

Table 5.12

Hierarchical Multiple Regression Analysis: 4-item General Satisfaction Subscale Scores regressed on Demographic Variables and Five Subscales of KAS (n = 285)

Step 1 R= 0.433, R^2= 0.188, R^2 Change= 0.188, F(13,271)=4.820, Sig.= 0.000***

Predictor Variables	B	Beta	Sig.	Collinearity Statistics: Tolerance
Step 2				
CAUCASIAN	0.681	0.083	0.593	0.065
AFRICAN	0.885	0.073	0.509	0.129
HISPANIC	1.002	0.077	0.457	0.149
ASIAN	- 0.959	- 0.107	0.456	0.076
NATIVE	- 0.414	- 0.008	0.859	0.688
MD	0.511	0.056	0.457	0.277
NP	1.580	0.159	0.044*	0.253
Age	0.025	0.077	0.091	0.754
Education	- 0.112	- 0.059	0.153	0.926
Gender	0.329	0.032	0.475	0.801
Healthcare Provider Gender	0.579	0.071	0.136	0.700
Number of Visits	0.048	0.156	0.000***	0.869
Duration	- 0.002	- 0.013	0.756	0.855
Bonding	0.394	0.512	0.000***	0.347
Connecting	0.358	0.138	0.017*	0.469
Partnering	0.079	0.048	0.382	0.518
Goal-setting	- 0.018	- 0.010	0.857	0.537
Alienating	0.047	0.022	0.647	0.665

Step 2 R= 0.763, R^2= 0.583, R^2 Change= 0.395, F Change(5,266)=50.327, Sig.= 0.000***

*p < 0.05 **p < 0.01 ***p < 0.001

CHAPTER 6

Discussion

The purpose of this study was to develop a reliable and valid therapeutic alliance instrument, to evaluate its psychometric properties, and to explore its usefulness in predicting an outcome measure of therapeutic alliance. This study included: (1) the development and preliminary psychometric testing of the Kim Alliance Scale; (2) further psychometric evaluation of the KAS in an adult clinic setting; (3) and the determination of the usefulness of the KAS in predicting patient satisfaction. This chapter includes a discussion of the results of the psychometric testing of the KAS, its usefulness, and the implications for nursing education, practice, and research with recommendations for future study.

Instrument Development and Preliminary Testing

The retroductive triangulation method provided a framework for developing the theory-based instrument (Quayhagen & Quayhagen, 1988). The retroductive triangulation included six steps: (a) a deductive process of a review of the pertinent literature; (b) an inductive triangulation from a qualitative study; (c) the formation of a conceptual schema; (d) the development of the instrument based on the conceptual schema; (e) the psychometric evaluation of the instrument; and (f) instrument revision. This method has proven to be a systematic and logical approach in identifying both measured and unmeasured dimensions of a concept, such as therapeutic alliance.

Study I included the preliminary psychometric testing of the 48-item KAS in a sample of 68 subjects. Based on this study, the KAS was refined to a 30-item instrument with four theoretical dimensions. The number of retained items in the four dimensions, integration, communication, collaboration, and empowerment, were 5, 11, 8, and 6, respectively. The initial support for the reliability and validity of the KAS was demonstrated. The high internal consistency reliability (alpha = 0.94), mean inter-item correlation ($\underline{r}$ = 0.35), and item-total correlation ($\underline{r}$ = 0.39 - 0.76) satisfied the criteria for a new instrument (Nunnally & Bernstein, 1994). Also, the KAS was found to satisfy both the convergent and divergent validity requirements. The KAS correlated significantly with the Agnew Relationship Measure (ARM) (Agnew-Davies et al., 1998), another measure of alliance, but did not correlate with the Multidimensional Health Locus of Control (MHLC) (Wallston & Wallston, 1978), the divergent measure. These results were expected, since therapeutic alliance was defined in both KAS and ARM as a balanced relationship between provider and patient whereas the MHLC measured the concept of control in the dominant-subservient relationship. The high positive intercorrelation among the four theoretical dimensions of the KAS ($\underline{r}$ ranged from 0.74 to 0.86, $\underline{p} < 0.01$) suggested that the dimensions are not independent of each other and the total KAS should be used as a unitary single scale containing 4 theoretical dimensions.

As noted in the literature review, the empowerment dimension has been underrepresented in alliance measures. Agnew-Davies et al. (1998) stated that the subscale of client initiative, which was postulated to have empowerment items, needed further testing for acceptance as a reliable subscale of alliance. In contrast, the initial validity and reliability estimates for the empowerment dimension of the

KAS provided preliminary support for its appropriate inclusion as an aspect of alliance. (Kim et al., 2001, p. 328)

In a post-hoc Analysis of Variance (ANOVA), the health care provider type and the educational level of the patients were found to correlate with the KAS. However, these results could not be confirmed in the subsequent study in a larger clinic population.

Limitations of this preliminary study were identified. In the second step of the retroductive triangulation, a mini-qualitative study was conducted using a collective creative thought process where the data were collected from health care professionals who wrote down words or clauses describing therapeutic alliance. This was done in place of a full qualitative study because of the extensive review of the large theoretical and empirical literature. Both Morgan (1998) and Sandelowski (1995) stated that a smaller qualitative study could be employed for confirmation or validation of the quantitative method when accommodating both quantitative and qualitative methods during the triangulation method. In the Priority-Sequence Model, Morgan (1998) suggested that the smaller follow-up qualitative study could help when interpreting the findings from a principally quantitative study.

The rating scale format used for the KAS was a four point Likert-type format, containing the response set of always, sometimes, rarely, or never. A forced choice version was used with the intention of discouraging the respondents from choosing the uncertain or neutral category (Burns & Grove, 1993).

The determination of the content validity of the KAS was done with the aid of two expert judges. There are confusing guidelines available regarding the selection of the minimum number of expert judges needed in content validity testing. Lynn (1988)

suggested that a minimum of three experts and a maximum of ten experts should be used with five as a sufficient number. However, Waltz et al. (1991) suggested that a minimum of two experts were required in rating the content representativeness.

The most significant limitations of the preliminary testing were the higher education level of the subjects (67% with graduate school education) and the small sample size (N = 68), which limit the generalizability of the findings to other populations. Inclusion of only registered nurses as patients in this preliminary psychometric testing was likely to have introduced a sampling bias. Some of these limitations of the preliminary study were addressed in the subsequent study with the 30-item KAS.

Psychometric Evaluation in the Clinic Population

The first specific aim of Study II was to perform reliability and validity testing of the KAS in an adult clinic population. A sample of 297 subjects were recruited from the waiting rooms at an outpatient clinic for the psychometric evaluation of the 30-item KAS.

Factor analysis was performed to reduce the data and to assess the underlying structure of the KAS. An exploratory principal component factor analysis with orthogonal varimax rotation resulted in a five-factor solution with a reduced 28-item KAS. This five-factor solution met the criteria of simple structure for each factor and meaningful interpretability (Waltz et al., 1991). The five factors were: bonding, connecting, partnering, goal-setting, and alienating. These five factors were given names that differed from the original four theoretical dimensions because of the mixture of items of the original theoretical dimensions in each of five factors.

The largest factor, comprising 11 items out of the 28-item KAS, was bonding. This factor contained a mixture of items from all four of the original theoretical

dimensions, although five out of 11 items came from the original communication dimension. The items included in this factor reflected positive personal attachment between the patient and health care provider as well as supportive and helping alliance (Madden, 1990; Horvath & Luborsky, 1993; Keller & White, 1998).

The next factor, connecting, was comprised of items that reflect the patient-provider interaction through plain language and easily understood words, with rapport and working well together (Henson, 1997; Pieranunzi, 1997). Emanuel and Dubler (1995) suggested that the ideal relationship between the physician and the patient requires good communication, which includes the physician's ability to explain in a clear language.

The partnering factor contained three items from the original collaboration dimension, plus one item each from the communication and empowerment dimensions. However, all five items indicated the power sharing and active partnership concepts. Partnering indicates patient's active participation in the decision making process (Cahill, 1996; McDougall, 1997; Rodwell, 1996). The partnering process enhances the patient's sense of self-esteem, which allows the patient to express his or her feelings freely (Buchmann, 1997; Hatcher & Barends, 1996).

The goal-setting factor contained items that refer to goals. Three of five items were from original collaboration dimension and all five items have the underlying attributes of the patient's cooperation and participation in goal-setting and reaching the goals. The negotiation of goals is an important part of the working aspect of alliance where the patient collaborates with the provider (Madden, 1990). Horvath and Luborsky (1993) mentioned that goals, which are the targets of intervention, refer to the mutually

agreed upon values and outcomes.

The final factor, alienating, was composed entirely of negatively worded items. Traditionally, it has been a widely accepted practice to include at least some negatively worded items to control for the effects of acquiescence (Miller & Cleary, 1993). However, it was found that the negatively worded items frequently loaded on a separate factor. Glaser and Wilcove (2000) suggested that a negatively worded factor may be measuring a construct that is opposite to the construct of interest, resulting in an instrument containing a bipolar construct. Therefore, the alienating factor that contains the negatively worded items is likely to be a logical addition to the concept of alliance. Alienating process appears to be a measure of the lack of the therapeutic alliance between patient and health care provider.

The uniqueness of the KAS was the inclusion of the theoretical patient empowerment dimension, which has been under-represented in the existing alliance tools. Following the principal components factoring, four items from the empowerment dimensions were retained. However, they were distributed among three factors, bonding, partnering, and goal-setting. This supported the premise that the empowerment is the process, not the outcome, which is involved within multiple factors of therapeutic alliance. Although the empowerment dimension did not survive as a separate factor, the attributes of empowerment were retained in the instrument in three factors. The partnering factor contained the most items that strongly reflect the attributes of empowerment.

The internal consistency reliability estimates and convergent and divergent validity for the 28-item KAS were supported. The reliability testing showed that all the

subscales met the required criteria for Cronbach's alpha (≥ 0.70) except for the alienating subscale with the Cronbach's alpha of 0.62. Even though this subscale did not meet the criteria for reliability, the items in this subscale were retained since they are the only negatively worded items in the whole instrument that can control for the effects of acquiescence (Miller & Cleary, 1993). The Cronbach's alpha for the entire instrument was 0.94, split-half alphas were 0.88 and 0.89, which were quite high, indicating high reliability for the instrument as whole.

The dimensionality test using Pearson product-moment correlation procedure, ranging from 0.32 to 0.67, showed that the five subscales of the 28-item KAS were reasonably independent of each other. These low to moderate correlation among the subscales gave empirical support for the multidimensionality of the KAS. However, additional confirmatory factor analysis in another sample is needed to further test the evidence of multidimensionality and test whether some of the subscales could be combined.

Demographic Variables and Therapeutic Alliance

The second specific aim of Study II was to examine the relationship between the demographic variables and the therapeutic alliance in a clinic population. Simultaneous multiple regression analyses showed that the combination of all demographic variables accounted for 8% of the variance in the therapeutic alliance but none of the individual demographic variables correlated significantly with the KAS. These results from the clinic population were different than the results from the preliminary testing. In a post-hoc Analysis of Variance (ANOVA) from the preliminary testing, the health care provider type and the educational level of the patients were found to correlate positively with the

KAS. This difference in findings could be due to the different educational levels of the two populations, with only 5% of the clinic population having had graduate-level education versus 67% in the preliminary study population. The large fraction of very highly educated subjects in the preliminary study may have given the different results. The study result from the clinic population regarding the health care provider type is also consistent with the randomized study of Mundinger et al. (2000). They reported no differences in the quality of the patient-provider relationship between nurse practitioners and physicians in a study of 1316 patients.

Therapeutic Alliance and Patient Satisfaction

The final specific aim of Study II was to explore the usefulness of the KAS as a predictor variable for patient satisfaction in a clinic population. In the hierarchical multiple regression model, the 28-item KAS was found to account for 46.5% of the variance in the 18-item PSHCPS (Patient Satisfaction with Health Care Provider Scale) (Marsh, 1999) score (R^2 change = 0.465, p = 0.000).

Since there were over-lapping items between the KAS and PSHCPS, the 4-item General Satisfaction Subscale from the PSHCPS was used as the better measure of satisfaction. This subscale measures the overall satisfaction of the patients regarding their providers and the health care they are receiving. The 28-item KAS was found to account for 36.9% of the variance in the 4-item General Satisfaction Subscale scores. This regression model also revealed that the combination of 13 demographic variables accounted for 18.8% of the variance in the 4-item General Satisfaction Subscale score (R^2 = 0.188, $p < 0.001$). Among the demographic variables, the nurse practitioner, educational level, and number of visits, were the only significant variables in predicting

the 4-item General Satisfaction Subscale score (Beta = 0.187, - 0.088, and 0.168; p = 0.020, 0.034, and 0.000, respectively) (see Table 5.11). These data indicated that the patients seen by nurse practitioners, the patients with less education, and the patients with higher number of visits, have better general satisfaction. It is not difficult to imagine why the number of visits influences satisfaction. Patients with high number of encounters with their health care providers may become more satisfied with their providers over time. However, an alternate possibility is that only the satisfied patients would continue to see the same providers whereas dissatisfied patients would leave their providers.

It is more difficult to explain why patients being seen by nurse practitioners would be more satisfied than those being seen by physicians. Mundinger et al. (2000) have found that there were no differences in patient satisfaction between nurse practitioner and physician groups where both groups had similar responsibilities and patient population. In Study II, there may have been other confounding variables that affected the patient satisfaction. For example, there may have been differences in practice model between nurse practitioners and physicians or differences in the level of the patient's health status. Furthermore, the percentage of patients seen by nurse practitioners was small (22%). This result needs to be confirmed in another study with a better balance in the types of the health care provider.

In an examination of the influence of the five KAS subscales, being seen by a nurse practitioner, the number of visits, bonding, and connecting KAS subscales were significant in predicting the 4-item General Satisfaction Subscale score (Beta = 0.159, 0.156, 0.512, and 0.138; p = 0.044, 0.000, 0.000, and 0.017, respectively) (see Table 5.12). The bonding and connecting subscales of the KAS appear to be more significant

predictor variables of patient satisfaction than the other three subscales of the KAS. When the five KAS subscales were used in place of the total 28-item KAS score, the educational level of the patient was no longer a significant predictor variable. This indicates that educational level is not a consistently significant factor in predicting patient satisfaction (Weiss, 1988).

These study findings confirmed the previous findings by others that patient satisfaction is influenced by patient-provider relationship, although none of the previous studies have quantified the relationship between the therapeutic alliance and the patient satisfaction. Oermann and Templin (2000) found that the most important indicators for the perceived quality of health care were: being cared for by a knowledgeable physician who kept up with changes in the medical field; and knowledgeable nurses who can communicate with the patients. They also reported statistical differences in various attributes of perceived quality, depending on the race, age, and years of education of the patient. However, the statistical analysis appeared to be weakened by multiple comparison testings.

Campanella et al. (2000) conducted a correlational study to explore the factors of the registration, medical technicians, nurses, doctors, tests, and family/friends on the patient satisfaction. They found that the combination of the very comprehensive factors accounted for 68.5% of variance in satisfaction. The study findings supported the positive effects of the therapeutic alliance over patient satisfaction, since some of the items in these factors reflected the attributes of therapeutic alliance. For the demographic characteristics, patient's age did not influence patient satisfaction. Bertakis et al. (1991) also supported the findings that patient satisfaction is influenced by patient-provider

communication. They reported that the physician's communication in psychosocial issues was positively related to patient satisfaction. However, the study used a scoring system of patient-provider communication through recoding audiotapes of the visit, which is a cumbersome methodology.

Implications

The quality of the therapeutic alliance is a pivotal contributing factor toward optimal patient care in the current health care context of biomedical advances, cost containment, and increasing prevalence of chronic illnesses. Tremendous advances have been made in biomedical technology, but many people do not receive the full benefit because of poor or non-existent therapeutic alliance with their health care providers. Cost containment pressures have resulted in early discharges from the hospitals, shorter visits with their health care providers, and patients having to manage their own health care in the community. With aging of the population and increased life expectancy, more patients are confronted with chronic health problems that require increased self-care and lifestyle modifications. To enhance changes in lifestyle and adherence to complicated disease management regimens, a paradigm shift in patient-provider relationship is advocated (Horvath, 2000; Krauss, 2000; Strickland & Strickland, 1996).

Krauss (2000) suggested that the time is ripe for a paradigm shift from health care providers functioning as knowledge brokers to establishing meaningful relationships that foster mutual respect and negotiated partnership. In the new paradigm, a greater emphasis is to be placed on care than on cure. Patients' voices need to be strengthened through greater involvement in decision-making. Currently, however, there is an insufficient evidentiary understanding of the therapeutic alliance, including the dimensions,

mechanisms, barriers, facilitators, and outcomes of the alliance to bring forth such a paradigm shift.

In this study of therapeutic alliance instrument development, an attempt was made to further understand the dimensions and an outcome of the therapeutic alliance. An additional dimension of patient empowerment was incorporated into the new instrument, KAS. The findings of this study supported the premise that the therapeutic alliance is a major contributor to patient satisfaction (Robinson, 1996). The specific implications of this study for nursing practice, nursing education, and nursing research with recommendations for future research are discussed in the next section.

Nursing Practice

Much of the nursing practice depend on accurate measurements of nursing phenomena. In contrast to tangible phenomena such as temperature or blood glucose level, the quality of patient-provider relationship is abstract and difficult to assess. The availability of a reliable and valid alliance instrument would help practicing nurses assess the quality of the relationship, and enable the nurses to provide effective interventions to improve patient care. Such an ability to assess the quality of patient-provider relationship and devising effective interventions may impact patient care beyond the boundaries of nursing practice into other health care professions.

The KAS, with 28-items, is a practical tool that is short enough to be completed in the waiting room while patients are waiting to be seen.

By providing interventions to strengthen the alliance in the patient-provider collaboration, communication, integration, and empowerment, the patient is able to interact more effectively with his or her health care provider and assume greater

responsibility in self-care. (Kim et al., 2001, p. 328)

Nursing Education

Nursing is a patient-centered profession, based on therapeutic relationship with the patient. Nursing education curriculums currently incorporate therapeutic communication as one of the core competencies for nursing professionals. Understanding the communication processes and effective communication techniques are essential to all steps of the nursing process to provide optimal patient care (Taylor, Lillis & LeMone, 2001). However, nursing education programs should expand beyond the communication factor to include other dimensions of the patient-provider relationship, including patient empowerment, shared goal-setting, partnering, bonding, and connecting.

The Empathy Test (Layton, 1979) has been used as a tool to assist teaching empathy for nursing students. The Empathic Interaction Skills Schedule (Clay, 1984) was developed with an intention to teach empathic interaction abilities to nursing students. Likewise, the KAS can be incorporated into nursing education programs to teach therapeutic interactional skills to nursing students. The KAS may enhance the students' awareness of the relationship between the health care provider and the patient. Such an educational program can assist nursing students to evaluate their own interpersonal skills with the patients.

A new paradigm in patient-provider relationship can be incorporated into nursing education curriculum. Educational programs can help nurses establish meaningful patient-provider relationships that foster mutual respect and negotiated partnership. Through nursing education, enhanced quality of therapeutic alliance will contribute toward improved health care.

Nursing Research

Further work in refining and testing of the KAS is recommended. The rating scale format used for the KAS in this study was a four point Likert-type format, containing the response set of always, sometimes, rarely, or never. However, during this study, the investigator felt that four-response set was too narrow, and that a number of respondents refused to complete some of the items or made non-existing responses to the items. Therefore, a five point Likert-type scale may be a better response set that can expand the choice of response and better able to discriminate the responses.

Confirmatory factor analysis of the KAS in another clinic population, using the structural equation modeling statistical method is recommended to test the factor structure of the KAS. In the confirmation factor analysis, the assumption is made that the factor structure is known or hypothesized a priori. The confirmatory factor analysis tests the hypothesis, makes factor comparisons, and establishes the construct validity of the instrument (Polit, 1996; Sharma, 1996).

Replication of the study in a different population, perhaps in a non-military setting or in an older population, to examine the relationship between the therapeutic alliance and the patient satisfaction is needed to confirm the high R^2. Also, the study finding that the nurse practitioners have more satisfied patients needs to be confirmed with a better balance in the types of the health care provider. This study used patient satisfaction as an outcome variable. Another variable, such as blood pressure control or blood glucose control, may be included to assess the influence of therapeutic alliance over broader health care outcomes.

An additional qualitative study to explore the meaning of the interactional process of the therapeutic alliance from the patient's perspective as well as from the health care provider's perspectives may be useful. Such a qualitative study can validate or expand the salient attributes, dimensions, or constructs of the therapeutic alliance that were identified in this study. It would be interesting to compare the similarities and differences between the two perspectives. A future study is recommended to find the mechanisms in establishing and maintaining the therapeutic relationship, and the factors that could block or facilitate the therapeutic alliance. Characteristics of the health care provider or the communication style of the provider may influence therapeutic alliance.

From the perspective of current nursing issues, there is a shortage of nurses in many parts of the America. Professional satisfaction among nurses would increase nursing retention as well as nursing recruitment. There is some support in the literature that a high alliance level with the patients is associated with not only patient satisfaction, but may influence professional satisfaction among the health care providers (Robinson, 1996). With a reliable and valid alliance instrument, it would now be feasible to quantitatively assess the relationship between therapeutic alliance and professional satisfaction among nurses.

Conclusion

The quality of the therapeutic alliance is a pivotal contributing factor toward optimal health care in the current context of consumer rights, patient protection, and quality assurance. To provide an understanding and insight into therapeutic relationship, the availability of well-designed and sound instrument can advance nursing research and practice.

The reliability and validity of the KAS has been supported through psychometric testing in two different population samples. As a result of the sequential evaluations in two population samples, the KAS was revised into a 28-item instrument, containing 5 factors, bonding, connecting, partnering, goal-setting, and alienating. The potential usefulness of KAS as a predictor variable for patient satisfaction was supported.

> As the American population ages, chronic illness and costly health care are forcing more and more patients to actively manage their own health care. Establishing an effective assessment measure of the therapeutic alliance between patient and provider, including a patient empowerment dimension, is becoming increasingly important .... The KAS could be a useful tool for assessing the quality of the therapeutic alliance and identifying the foci for nursing interventions to improve the alliance as needed. (Kim et al., 2001, p. 329)

Further study is needed to establish robustness of the psychometric properties of the KAS.

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APPENDICES

Appendix C

Human Subjects Letter

Naval Medical Center San Diego

for Study II

Memorandum

6500
AVA
MAR 2 8 2001

From: Chairman, Scientific Review Committee (SRC)
Chairman, Committee for the Protection of Human Subjects (CPHS)
To: Commander
Via: Deputy Commander

Subj: EXPEDITED REVIEW OF CIP STUDY #**S-01-032, "CLINICAL USEFULNESS OF THE BOREN HEALTHCARE PARTNERSHIP SCALE AND KIM ALLIANCE SCALE IN ADULT CLINIC CLIENTS"**

Ref: (a) NAVMEDCEN SDIEGOINST 6500.4E

1. The subject study was reviewed by members of the respective committees. Per reference (a), local expedited approval of the above protocol is requested effective the date of your endorsement below.

2. Local expedited approval was authorized for the above research project by two members of the SRC on MAR 1 2 2001. The signature below is provided to reflect the approval by the committee members.

3. The Chairman, CPHS determined that this study is minimal risk and the approved consent form will be included.

BLAKE H. TURNER
CAPT, DC, USN,
Chairman, Scientific
Review Committee

KENNETH C. EARHART
CDR, MC, USN
Chairman, Committee for
the Protection of Human Subjects

4. This expedited approval will allow the investigator to begin the study as soon as the local approval letter is received. An administrative entry will be included in the next set of committee minutes.

5. Approved/~~Disapproved with~~/without comments:

A. DIAZ, Jr.

Appendix D

Informed Consent Form

for Study I

UNIVERSITY OF SAN DIEGO

CONSENT TO ACT AS A RESEARCH SUBJECT

Son C. Kim, R.N., Doctoral student, is conducting a research study to test a newly developed instrument, Kim Alliance Scale (KAS), as a requirement for a class, NURS 674, Advanced Psychometric Measurement at University of San Diego. The Kim Alliance Scale (KAS) was developed to measure the quality of therapeutic alliance between client and provider. I have been asked to take part in this study. If I agree to participate in this study, I will be asked to complete four forms which have questions about me and about my interaction with my particular health care provider whom I have seen within the past 2 years. These forms include demographic data profile, two scales with questions about my interactions with my health care provider, and one scale with questions about the control I feel I have over my health.

I will be asked questions about the relationship with my particular health care provider that I have seen within the past 2 years. My participation in this study is entirely voluntary, and will only include the one hour for completing the forms. I understand that I may refuse to participate or withdraw at any time without affecting my well-being.

I understand that questions in this study are designed to assist health care providers to evaluate client-provider interaction. I may or may not benefit personally from the study, but the new knowledge gained will help the investigator to identify which items of scale are more relevant in establishing a newly developed instrument, KAS. Participation in this study should not involve any added risks or discomfort to me except for commitment of about one hour in filling out the forms.

I understand that my identity and my research records will be kept completely confidential. I further understand that only group data will be used when the study is reported or published to preserve my anonymity.

My questions about this study have been answered. If I have further questions or wish to report research-related problems, I can reach Son C. Kim at 858-755-0626.

There are no other agreements, written or verbal, beyond that expressed on this consent form.

I, the undersigned, have read and understood the above explanation and, on that basis, I give consent to my voluntary participation in this research.

_____

Signature of Subject Date

_____

Location

_____

Signature of Witness Date

_____

Signature of Researcher Date

Appendix E

Informed Consent Form

for Study II

NAVAL MEDICAL CENTER
SAN DIEGO, CALIFORNIA 92134-5000

CONSENT *BY A SUBJECT* FOR VOLUNTARY PARTICIPATION IN A CLINICAL INVESTIGATION (RESEARCH) STUDY

1. I,_____, have been asked to voluntarily participate in a research project entitled, **"Clinical Usefulness of the Boren Healthcare Partnership Scale and Kim Alliance Scale in Adult Clinic Clients,"** being conducted at the Naval Medical Center, San Diego by nurse researchers/doctoral candidates from the Hahn School of Nursing and Health Sciences, University of San Diego, CA.

2. The purpose of this research project is to test accuracy and usefulness of newly developed surveys, the Boren Healthcare Partnership Scale (BHPS) and the Kim Alliance Scale (KAS), which measure quality of your relationship with your healthcare provider.

3. I understand that my participation in this research project will be for a period of about 45 minutes.

4. The procedures for this project include completion of a form with information regarding my date of birth, background, and healthcare and five surveys (contained in one booklet). The forms will be completed while I am waiting for my doctor visit and returned once I have finished all the questions.

5. The total number of subjects expected to participate in this study is 300.

6. There are no anticipated risks or discomforts to me from my participation in this study other than the time required to complete this booklet. My confidentiality will be protected.

7. I understand that my participation in this research project will not be of direct benefit to me personally. However, the results of this study may help the investigator gain important knowledge about the usefulness of measuring healthcare partnership and therapeutic alliance or aid in the future medical

Subject's Initials: _____

CPHS/IRB Approval Stamp/Seal Required

CPHS APPROVED DATE 4/9/01 INT_ EXP_ NAVAL MEDICAL CENTER SAN DIEGO

evaluation or treatment of other patients.

8. I understand that I will not be financially compensated for my participation in this study.

9. The alternate procedure(s) or course of treatment, should I decide not to participate in this research study, has been explained to me as follows: I will receive standard medical treatment, decided on by my doctor and me, which may or may not include any one or all of the procedure(s) or treatment(s) which are a part of the planned research study.

10. In all publications and presentations resulting from this research study, information about me or my participation in this project will be kept in the strictest confidence and will not be released in any form identifiable to me personally. However, I realize that authorized personnel from the Navy Medical Department and from the Food and Drug Administration (FDA), where applicable, may have access to my research file in order to verify that my rights have been adequately protected.

11. If I have any questions regarding this research study, I may contact **CDR Denise Boren, NC, USN at (760) 631-7304 or Son Kim at (858) 755-0626.** If I have any questions about my rights as an individual while participating in a research study at the Naval Medical Center, San Diego, I may contact **CDR Kenneth Earhart, MC, USN, Chairman, Committee for the Protection of Human Subjects at (619) 532-8125, or CDR John Kelso, MC, USN, Head, Clinical Investigation Department at (619) 532-8127.** If I believe that I have been injured as a result of my participation in this research study, I may contact **CDR Lynn McNees, JAGC, USN, Naval Medical Center, San Diego, Legal Department, at (619) 532-6475.**

12. I understand that my participation in this project is entirely voluntary and that my decision not to participate will involve no penalty or loss of benefits to which I am entitled under applicable regulations. If I choose to participate, I am free to ask questions or to withdraw from the study at any time.

13. If I should decide to withdraw from the research project, I will notify **CDR Denise M. Boren, NC, USN at (760) 631-7304 or Son Kim at (858) 755-0626** to ensure my timely removal from the study. My withdrawal will involve no prejudice to my future health care or any loss of rights or benefits to which I am otherwise

Subject's Initials: _____

CPHS/IRB Approval Stamp/Seal Required

entitled. Any new significant finding developed during the course of this study which might affect my willingness to continue participation will be communicated to me.

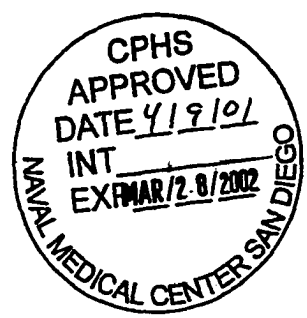
14. I understand that I am making a decision whether or not to participate in the research project above. My signature indicates that I have had the information presented to me, have had the opportunity to ask questions about the research and my participation, and agree to participate in the study. Further, my signature indicates that I have been provided with a copy of this consent document and a copy of a document entitled, "California Experimental Subject's Bill of Rights."

SIGNATURES AND **DATE** SIGNED: **PRINTED** OR **TYPED IDENTIFICATION:**

Patient / Subject (Date)	Name / Status / Sponsor's SSN
Witness (Date)	Name / Grade or Rank
Researcher/Investigator(Date)	Name / Grade or Rank

Subject's Initials: _____

CPHS/IRB Approval Stamp/Seal Required



PRIVACY ACT STATEMENT

1. Authority. 5 USC 301

2. Purpose. Medical research information will be collected to enhance basic medical knowledge or to develop tests, procedures, and equipment to improve the diagnosis, treatment, or prevention of illness, injury, or functional impairment.

3. Use. Medical research information will be used for statistical analysis and reports by the Department of the Navy, the Department of Defense, and other U.S. Government agencies, provided this use is compatible with the purpose for which the information was collected. Use of the information may be granted to non-Government agencies or individuals by the Chief, Bureau of Medicine and Surgery in accordance with the provisions of the Freedom of Information Act.

4. Disclosure. I understand that all information contained in this Consent Statement or derived from the medical research study described herein will be retained permanently at Naval Medical Center, San Diego and salient portions thereof may be entered into my health record. I voluntarily agree to its disclosure to agencies or individuals identified in the preceding paragraph. I have been informed that failure to agree to such disclosure may negate the purposes for which the research study was conducted.

SIGNATURES AND **DATE** SIGNED:	**PRINTED** OR **TYPED IDENTIFICATION:**
Patient / Subject (Date) (if Applicable)	Name / Status / Sponsor's SSN
Parent / Guardian (Date) (if Applicable)	Name / Status
Witness (Date)	Name / Grade or Rank

Appendix F

Demographic Questionnaire

for Study I

Demographic Data

Subject Identification Number: _____ Date: _____

Please circle the appropriate responses in each category below:

Age:

1. 18 – 25
2. 26 – 35
3. 36 – 45
4. 46 – 55
5. 56 – 65
6. 66 – 75
7. 76 – 85
8. Over 85 years

Ethnicity:

1. White/Caucasian
2. Black/African American
3. Asian/Pacific Islander
4. Mexican American
5. Other _____

Educational Level:

1. Associate Degree
2. Diploma
3. Bachelors Degree
4. Masters Degree
5. Doctoral Degree

The **Health Care Provider (HCP)** I am referring to in this study is:

1. Physician
2. Nurse Practitioner
3. Clinical Nurse Specialist
4. Physicians Assistant
5. Other: _____
6. Specialty: _____

Sex:

1. Male
2. Female

Marital Status:

1. Single
2. Married
3. Divorced/Separated
4. Widowed

Employment Status:

1. Full-time
2. Part-time
3. Retired

Occupation:

1. Staff Nurse
2. Clinic Nurse
3. Nurse Practitioner
4. Clinical Nurse Specialist
5. Educator
6. Researcher
7. Other: _____

Insurance:

1. Private
2. HMO
3. Federal (e.g. Tricare, Medicare)
4. State (Medicaid)
5. Other: _____

Appendix G

Demographic Questionnaire

for Study II

Demographics Questionnaire

Please circle or fill in the blank regarding yourself or healthcare provider you will see today.

1. My age is : _____

2. My gender is :
   1) Male
   2) Female

3. My ethnic origin is :
   1) Caucasian
   2) African American
   3) Hispanic
   4) Asian / Pacific Islander
   5) American Indian / Native American
   6) Other.

4. The years of education I have finished: _____ years.
   For example,
   12 years = high school graduate
   14 years = community college
   16 years = college graduate
   18 - 20 years = graduate school

5. My healthcare provider is:
   1) Medical Doctor (M.D)
   2) Nurse Practitioner (NP)
   3) Physician's Assistant (PA)

6. The gender of my healthcare provider is:
   1) Male
   2) Female

7. The number of times I have seen my healthcare provider: _____ times.

8. I have known my healthcare provider for: _____ months.

Appendix H

Kim Alliance Scale (KAS): Conceptual Schema with Sample Items

Kim Alliance Scale (KAS): Conceptual Schema with Sample Items

Dimensions	Sample Attributes	Sample Items
Collaboration	Negotiation	I make suggestions on what works best for me.
	Cooperation	I am allowed in decision-making process.
	Participation	I participate in establishing goals.
Communication	Bonding	I have a good rapport with my provider.
	Provision of information	I feel my provider gives me enough information.
	Expression of concerns	I can express negative feelings freely.
Integration	Balance in referent social power	I feel involved in my health care.
	Balance in expert social power	I feel my provider supports my point of view.
Empowerment	Self-efficacy	My provider encourages me to make decisions.
	Partnership	I have an active partnership with my provider.
	Equality	I am free to refuse my provider's recommendation.

Note. From "The Kim Alliance Scale: Development and preliminary testing," by Kim, S. C., Boren, D., & Solem, S. L., 2001, Clinical Nursing Research, 10 (3), 314-331. Copyright 2001 by the Sage Publications, Inc. Reprinted with permission.