HOSPICE INTERDISCIPLINARY TEAM PROCESSES AND EFFECTIVENESS

by

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DEDICATION

To my mother and father, who continually encouraged me to pursue goals in life. Dad, I wish you were here.
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ABSTRACT

The purpose of this research was to test a causal model of interdisciplinary hospice processes and effectiveness. This research examined the impact of organization and team level structure constructs (organizational culture, team complexity, and team leadership) on hospice interdisciplinary team processes and subsequent influence on perceived team effectiveness. The relationships among perceived team effectiveness, team task satisfaction, and family satisfaction with hospice care were also examined.

The sample consisted of 41 hospice interdisciplinary teams drawn from two hospice organizations in a southwestern city of the United States. Participants included 410 interdisciplinary team members and 32 hospice team leaders. Measures used in this research were adapted from instruments previously used in non-hospice settings. Data were collected through self-report surveys. Psychometric properties of all instruments were performed at the individual and group level. Psychometric properties of all but three scales (Hospice Organizational Culture: Group Culture, Hierarchical Culture, and Developmental Culture) exhibited reliability and evidence of validity as group measures.

Four hypothesized relationships were supported, and six nonhypothesized relationships were significant in the model. All team processes except conflict management had positive direct effects on perceived team effectiveness. Perceived team effectiveness had a positive direct effect on team task satisfaction, and team task satisfaction was positively correlated with family satisfaction with hospice care in a limited sample. The proposed structural factors (hospice organizational culture, team complexity, and team leadership) did not impact hospice interdisciplinary team processes.
or team effectiveness. Approximately sixty-five percent of the variance in team
effectiveness was explained by team hospice experience and team processes (leadership,
communication, and coordination). Nearly fifty percent of variance in team task
satisfaction was explained by the processes used for conflict management and perceived
team effectiveness.

Relationships identified in this research are viewed as preliminary. Future
research should modify and re-examine model relationships with a larger sample drawn
from diverse hospice organizations. In addition, structural variables influencing the
hospice interdisciplinary team need to be re-examined for appropriateness and conceptual
relevance. However, this study provided a foundation for understanding hospice
interdisciplinary team processes and the influence of these processes on team and family
satisfaction.
CHAPTER I: INTRODUCTION

Hospice emerged in the United States as a social movement and evolved into a system of medical care that emphasizes palliation and psychosocial support of patients diagnosed with a life-limiting illness (Greer & Mor, 1986). Hospice produced a paradigm change in care delivery from a “cure” model to a “comfort” model by treating the patient and family as a unit (Stoddard, 1978). Distinctive to hospice’s mission is its subsumption of palliative care philosophy (Monroe & DeLoach, 2004). Hospice is considered to be the model for quality, compassionate care for people facing a life-limiting injury or illness and involves a team-oriented approach to expert medical care management and emotional/spiritual support tailored to the patient and family’s needs (National Hospice and Palliative Care Organization, n.d.). The goal of hospice care is to insure a “good death”, which requires allowing for client self-determination and autonomy while maintaining the integrity of the whole dying process (Oliver, Porock, Demiris, & Courtney, 2005; Wright, 1999). Contrary to popular belief, hospice’s focus is on living well the last days of life, not on the death event itself. The hospice philosophy recognizes death as the final stage of life and provides care so that the final days may be spent with dignity and quality, surrounded by friends and family (American Cancer Society, n.d.).

The modern hospice movement dates back to the early 1960’s and was informed by the work of Dame Cicely Saunders in the United Kingdom (Teno, 2002). Hospice care officially became a Medicare benefit in the United States in 1983 (Health Care Financing Administration [HCFA], 1983). Since its inception, hospice has marked a new approach to managed care and end of life care. Hospices have seen ongoing growth in the United
States in the past decade, resulting in an approximate 50% increase in the number of hospice programs nationwide with over a million patients served (Schonwetter, 2006). The focus on cost-effective delivery of quality end of life care has made it one of Medicare’s most successful program options (Hoyer, 1998).

Use of the interdisciplinary team to manage care was mandated by the Medicare hospice legislation. The law stipulated that all services provided to a hospice patient would need to be contained in a plan of care developed by an “interdisciplinary group” or team (Hoyer, 1998). Joint efforts among diverse professionals were deemed necessary for the provision of quality services to patients and families with complex, multiple needs. The recognition of different dimensions of care defined the need for individuals with a diversity of professional training and backgrounds to meet the variety of issues facing people who are at the end of life (Oliver et al., 2005). Interdisciplinary teamwork is “guided by the goals of patient and families, attends to all dimensions of the human experience, and recognizes the opportunities for growth and development near the end of life” (Connor, Egan, Kwilosz, Larson, & Reese, 2002, p. 341).

The objective of hospice care is to keep patients pain-free, comfortable, and without a diminished sensorium during the final phases of life (Campbell, 1986). The use of the interdisciplinary team is required to address these objectives, as physical, social, and spiritual factors impact the entire person and family unit and subsequent responses to care. Although the interdisciplinary team is a core operational feature in hospice care delivery, there is a paucity of hospice research examining the impacts of organizational and team characteristics on interdisciplinary team processes and subsequent team
effectiveness. Little research has evaluated the effectiveness of interdisciplinary teams, and in most cases, teams have only been evaluated as a component of the study; rarely has the team been the object of the study. Even in cases where interdisciplinary teams are the study focus, results are unclear and conflicting (Cooper & Fishman, 2003).

The purpose of this research was to test a causal model of interdisciplinary hospice processes and effectiveness. The impact of organizational and team level structure constructs on team processes and effectiveness was explored. In addition, the influence of perceived team effectiveness on team task satisfaction and family satisfaction with hospice care was examined. The following sections in this introductory chapter will review the Medicare hospice benefit, the hospice interdisciplinary team, and current trends affecting hospice care delivery.

**Hospice and the Hospice Interdisciplinary Team**

The Medicare Hospice Benefit covers palliative and support services for beneficiaries who have a life expectancy of six months or less should the disease process follow its normal course (Centers for Medicare & Medicaid Services, 2006). Beneficiaries who elect the hospice benefit forego curative treatment and seek palliative treatment (MedPac, 2006). Since 1983, growth in programs and patients served has increased yearly. Results from the 2004 National Data Set indicate that there were 3,650 hospice providers in 2004 serving 1,060,000 patients (National Hospice and Palliative Care Organization, 2004). The most rapid period of growth has occurred since the 1990s. Hospice programs tend to be nonprofit (62 percent in 2000) and relatively small (Jennings, Ryndes, D’Onofrio, & Baily, 2003).
The team approach, in many health care arenas, has become a common way to organize care delivery. Among clinical teams, the interdisciplinary team is the most developed (Temkin-Greener, Gross, Kunitz, & Mukamel, 2004). Interdisciplinary teams are defined as being composed of at least two disciplines and are characterized by all members participating in the team’s activities, sharing leadership, and relying on each other (Temkin-Greener et al.). An interdisciplinary approach to care is realized by a coming together of disciplines and perspectives in order to accomplish mutually stated patient and family goals (Gibbons & Bouton, 2003). An effective interdisciplinary team is comprised of team members who have the knowledge, skill, expertise, and support to jointly assess and determine goals, share ideas, and explore interventions with each other and the patient/family (Gibbons & Bouton). The extent to which the interdisciplinary team facilitates patient and family goal attainment depends on how well they work together.

The hospice interdisciplinary team model stems from an approach to health care that combines biological, psychological, social services, and spiritual services (Wittenbery-Lyles, 2005). This approach makes health care collaborative by incorporating all aspects of care into one unified team effort. The core hospice interdisciplinary team mandated by Medicare consists of a physician, registered nurse, social worker, and a pastoral or other type of counselor (Hoyer, 1998). Although these disciplines are considered core by Medicare, there are many other disciplines involved in treating patients. Other involved disciplines may include dieticians, therapists (physical, occupational, massage), home health aides, volunteers, and bereavement staff. The team
is responsible for providing a variety of services based upon expertise and training. Care delivery emphasizes communication and coordination among all disciplines, patients, and families. This team is responsible for establishing, maintaining, and following a written plan of care for each person admitted to a hospice program. This plan of care must assess patient’s needs, identify services to be provided, and describe the scope and frequency of services needed to meet the patient’s and family’s needs (Health Care Financing Administration [HCFA], 1983).

Current State of Hospice Knowledge

Throughout hospice’s short history, the limited research done has been devoted to direct care issues such as pain/symptom management and provider education. Although significant progress has been made, there is a great need to advance the field of hospice and palliative medicine through research to become a part of mainstream medicine (Schonwetter, 2006). Kovacs (1998) identified the need to better understand and evaluate the effectiveness of interventions and overall programs, because lack of evidence and research were increasing concerns. The National Institute of Nursing Research and the Agency of Healthcare Research and Quality commissioned an evidenced-based report and convened a state of the science conference devoted to end-of-life care in 2004. Although a tremendous growth in hospice research was present, there was also a recognized need for ongoing research growth to support the fledgling specialty discipline (Schonwetter, 2006).

Multiple organizations involved in end-of-life care have defined their views regarding research needs. The National Hospice and Palliative Care Organization’s
(NHPCO) 2004 Research Agenda focuses on three areas of concern: 1) improving access to hospice and palliative care, 2) improving the quality of hospice and palliative care, and 3) improving the conduct of research in hospice and palliative care by identifying ways to promote and increase participation in end-of-life care research (2004). Research priorities identified by the National Institutes of Health Consensus Development Panel (2005) included understanding patient, caregiver, and health care system influences on patient outcomes and determining how individual, family, and health care system factors affected responses to care in home, hospice, long-term and acute care settings. The National Consensus Project for Quality Palliative Care (2004) determined that attention must be devoted to understanding how processes of care affect important patient and family outcomes. Teno (2002) called for research that examines the “black box” of how best to deliver palliative care, emphasizing the need to identify key processes and team organization that lead to optimal patient and family outcomes. It is evident from these research priorities and imperatives that organizational influences on hospice patient care delivery are largely unexamined and vitally important. Understanding organizational factor influence on care processes is critical if we are to effectively impact patient care in hospice settings.

There has been a growing body of knowledge about managerial and organizational practices that appear to be associated with patient outcomes in hospital settings (Shortell et al., 1994). However, there has been little attention devoted to how hospices managerially and organizationally structure the provision of services. Correlations between organizational indicators and outcome measures are valuable in
identifying specific practices that generate desired outcomes (Tecca, 2004). There is little knowledge about team processes and functions that facilitate optimal patient and family outcomes. Because the interdisciplinary team is the central care provider in hospice operations, the ability to identify and learn about team processes associated with better team performance may hold important lessons for nurse leaders in terms of staff and patient/family outcomes. Research is needed to more fully understand contextual/organizational influences on hospice interdisciplinary team processes, team effectiveness, and ultimately on team and patient/family outcomes.

The Centers for Medicare and Medicaid Services (CMS) published new Hospice Conditions of Participation (CoP) in May, 2005. The revised CoPs continue to emphasize the interdisciplinary team approach in order to meet performance standards for patient care (Neigh, 2005). A new mandate in the proposed CoPs requires hospices to develop, implement, and maintain effective, ongoing, hospice-wide data-driven quality assessment and performance improvement that reflect the complexity of services provided (Neigh). Knowledge of organizational structures and processes will only facilitate understanding of organizational service complexities. Hospices need to know how to organizationally manage, support, and optimize team processes for patient and family outcomes. This knowledge will only be gained through theory and research.

Although hospice has become a major component of end-of-life care, little scientific information is available to help identify how to measure care impact and recognize which hospice interventions lead to the best outcomes (Connor, Horn, Smout, & Gassaway, 2005). In a traditional medical model, outcomes are usually evidenced by
improvement in patient status or function. Outcomes are defined differently by hospice because the hospice focus is on the patient and family unit, and care rendered does not usually result in improvement of status or function. Thus, the National Hospice Organization defines outcomes as any end result attributable to health services intervention and/or natural progression of disease or disability, including changes in physical, psychological, social, and spiritual well-being and levels of function (National Hospice Organization, 1997).

Six primary hospice patient outcomes were identified by Higginson and associates (2003) in their meta-analysis of 19 palliative care teams. Outcomes related to pain control, ‘other symptoms’, quality of life, satisfaction, referral, and therapeutic interventions were predominant. Much hospice outcome research has been centered on patient care practices, with an emphasis on pain and symptom management. The second thrust in hospice research has been to examine the impact of global hospice intervention on psychological, social, and spiritual aspects of the patient and the family (Corless, 1994). Hospice outcomes identified by the National Hospice and Palliative Care Association (as cited in Head, 2001) include self-determined life closure, safe and comfortable dying, and effective grieving. Evidence of hospice outcomes is strongest for cancer diagnoses, reflecting the degree of linkage between oncology practice and palliative care (Lorenz et al., 2004). Studies also demonstrate strong associations between satisfaction and communication, pain control, and enhanced caregiving (Lorenz et al.).

Patient and family satisfaction, or perception of care, has become an important hospice outcome in recent years due to consumer involvement (Head, 1997; London &
Warren, 2004). Healthcare consumers are demanding excellence in care and services. Demonstration of quality outcomes and consumer satisfaction are now priorities (Urden, 2002). Patient satisfaction, or the perception of being well care for, is an outcome that has been hypothesized to be sensitive to nursing care (Mitchell, Ferketich, & Jennings, 1998). A high correlation exists between patient satisfaction with nursing care and satisfaction with overall care; the greater the patient satisfaction with nursing care, the greater the satisfaction with care in general (Bonheur, 1995).

Team effectiveness has been conceptualized as an interdisciplinary team outcome. Sabur (2003a) suggests there are two ways to look at success of interdisciplinary team effectiveness. One way is to look at the outcomes achieved by the team, and another is to look at team functions and interactions. Typically, team outcomes (patient and family satisfaction) have been the focus of hospice care research.

More research is required to understand the linkage of hospice interdisciplinary team operations, interactions, and outcomes. Appropriate examples of team measures include productivity, structure (team size, discipline mix, caseload numbers), operations (leadership and conflict management), and skills (Sabur, 2003b). Unless there is an understanding of how the interdisciplinary team functions and interacts as an entity, it will be difficult to identify how the team affects the patient outcomes achieved. The collaborative approach used by the hospice interdisciplinary team has not been assessed; nor is there any research examining the psychological, social, and spiritual elements of hospice care and its philosophy (Wittenberg-Lyles, 2005).
Limited attention has been focused on hospice system and operational variables or assessment of patient, family, and healthcare system factors associated with outcomes. Optimizing patient outcomes will only be enhanced by understanding the structures and processes supporting hospice care delivery. Because the interdisciplinary team plays such a pivotal role in hospice operations, more knowledge is needed regarding how organizational and team factors influence team processes and effectiveness.

The Role of the Team Leader

Hospice team leaders are hypothesized to influence the hospice interdisciplinary team. Team leaders, the middle managers in hospice organizations, are responsible for interpreting organizational mission and vision and applying it to daily operations with the interdisciplinary team. Team leaders are accountable for supporting organizational goals, supporting hospice staff, and assuring patient satisfaction. There is substantial literature regarding the team leader role; however, very little research has been applied to team leaders in a hospice setting.

Although team leaders in hospice have traditionally been nurses, any discipline can fulfill this role. Nurses and physicians are more likely to be looked upon for leadership than social workers or spiritual counselors (DeFord, 2003). Because the shortage of nurses is currently a healthcare issue and expected to continue, the fulfillment of this leadership role by other disciplines is likely to increase.

Essential hospice team leader attributes include an appropriate fearlessness, a passion for hospice care with a commitment to excellence, high visibility, the ability to inspire others, the ability to be a good listener, a high degree of vitality, and an
unquestioned integrity (DeFord, 2003; Kleinman, 2004). Responsibilities of hospice team leadership include increasing employee job satisfaction and decreasing turnover, while considering and supporting staff needs and development (Aponte-Soto, Olson, Viernes, Parisi, & Krause, 2004). DeFord states that a predominant characteristic of a hospice team leader is the ability to maintain patient and family at the forefront of the decision-making process, thus facilitating patient and family satisfaction with care.

Because nurses have traditionally held the team leader role in hospice settings, the nursing perspective is predominant in care decisions. Another leadership model that supports the interdisciplinary culture is team leadership provided by various disciplines. Specialized training can lead to specialized perspectives (Sabur, 2003a). Equalizing discipline members who hold team leader roles ensures the opportunities for contributions of minority views. With the advent of the nursing shortage, there is a renewed focus on other disciplines participating in this role. Physicians, social workers, and pastoral counselors are examples of other disciplines serving as team leaders. Research is needed to examine the relationship of the team leadership role and interdisciplinary teams. Knowledge is required as to how to best structure the organizational environment and train team leaders to adequately support the hospice interdisciplinary team and influence team satisfaction.

Recruitment and Retention

Recruitment and retention of qualified staff are paramount issues in healthcare literature. Hospice team recruitment and retention are hypothesized to influence team effectiveness and team task satisfaction. Significant staff vacancy rates exist in the health
care system today. Hospital systems in particular are devoting much attention to staff recruitment and retention. Although there is limited research regarding this issue in the hospice literature, it is assumed that hospice organizations face the same challenges in recruiting and retaining a healthy workforce. At times, retention is magnified in hospice settings due to the greater demand and emotional distress of working with terminally ill patients (Kulbe, 2001).

A positive association between higher rates of group cohesion and work satisfaction has been demonstrated through research (Shader, Broome, Broome, West, & Nash, 2001). Garret and McDaniel (2001) reported that social networks and a supportive workplace were important factors in preventing dissatisfaction. Leppa (1996) found that interpersonal relationships were important parts of job satisfaction and were also associated with greater patient safety and higher quality of care. These findings lend support to use of interdisciplinary teams and the importance of positive work environments for staff recruitment and retention. More knowledge is needed to identify what organizational and team constructs influence job and task satisfaction and how team satisfaction influences patient/family satisfaction.

Financial Considerations

Medicare uses a prospective payment rate for each day of hospice care. Although payment rates have changed over time due to inflation and other cost increases, the payment method has remained the same. For that reason, there is increased scrutiny surrounding hospice payment expenditures. Medicare spent $6.7 billion on hospice care in 2004, and it is estimated that the Medicare program spent approximately $9.8 billion
Hospice spending is projected to increase at a rate of nine percent per year from 2004 to 2015, outpacing hospital, physician, skilled nursing facility, and home health services spending (MedPAC, 2006). Therefore, it behooves hospice organizations to examine the way that services are delivered. Because hospice payment is prospective in nature, hospice organizations must be efficient in meeting organizational goals of care. There is a financial interest in optimizing the way hospice care is delivered in order to be cost-efficient. In order to be efficient, hospice organizations must know how to internally structure to best support the interdisciplinary team to meet patient and family needs. Organizational structures become critically important for operational efficiency, staff support, and patient satisfaction. Increased knowledge of linkages among organizational structure, team processes, and staff and patient outcomes is essential in order to deliver quality, cost effective care.

Significance

The Institute of Medicine (2001) proposed designing and implementing more effective organizational support processes in order to make changes in care delivery possible. Without research, strategic changes cannot happen. Multiple national organizations have identified critical needs for hospice research to aid in understanding patient, caregiver, and health care system influences on patient outcomes (National Consensus Project for Quality Palliative Care, 2004; NHPCO, 2004; National Institutes of Health Consensus Development Panel, 2005). Although utilization of hospice care is increasing, there is a paucity of research examining the systems and linkages of hospice
care delivery. Organizational support processes are not known, thus, delivery system enhancement for efficient and effective patient care cannot be implemented.

The interdisciplinary team plays a critical role in hospice care delivery; yet there is a lack of knowledge of how organizations influence the interdisciplinary team, how the interdisciplinary team functions for patient care delivery, and how the interdisciplinary team influences team and patient/family outcomes. Outcomes are important in today’s health care environment, and unless there is an understanding of how interdisciplinary team processes influence outcomes, changes in health care delivery for outcome maximization cannot be achieved.

By examining a variety of variables related to hospice care delivery, using multiple levels of measurement and using multiple theoretical perspectives, it may be possible to better understand what variables influence team processes and effectiveness that in turn impact team and patient/family outcomes. With this knowledge, our understanding of hospice interdisciplinary team functioning will be enhanced, which may, in turn, facilitate meaningful operational changes to enhance patient care.

Identifying contextual variables important in hospice settings may provide additional direction in how to structure work environments for optimal team functioning in order to maximize patient and staff outcomes. The challenge in creating high-functioning interdisciplinary teams is ensuring that organizational structure facilitates team processes. Clearly, there is a need for research that examines the influence of organizational and team level constructs to help ensure successful functioning of the hospice interdisciplinary team.
CHAPTER II: CONCEPTUAL PERSPECTIVES

The phenomenon of interest for this study is the hospice interdisciplinary team. General systems theory (GST) provides the overarching framework for this study, with Donabedian’s model of structure-process-outcome providing guidance for the research conceptual model. Research variables are described.

General Systems Theory

Organizations are social systems open to their environments. Organizations serve as environments to their teams, and teams themselves are systems with team members nested within them (Ilgen, 1999). General systems theory (GST) views the object of interest as a dynamic structure of interacting spheres. Originally introduced in the 1930’s by Ludwig von Bertalanffy, GST has become a common basis for scientific inquiry (Barnum, 1994). Von Bertalanffy, a biologist, suggested that natural entities are irreducible wholes, with the whole being more than the sum of its parts.

The nursing process has its roots in general systems theory, because the basic nursing process model demonstrates a cyclic process of assessment, intervention, evaluation, and reassessment (Mason & Attree, 1997). Neuman (1980) developed her nursing theory based on GST, and community nursing theory has also embraced this worldview (Anderson & McFarlance, 1996). Central tenets of GST include dynamic interaction, organization, non-summative wholeness, control, self-regulation, equifinality, and self-organization (von Bertalanffy, 1968). The value of GST lies in its perspective of holism and interdependence and interrelationships among system components and system environments.
A system by definition is composed of interrelated parts or elements. A system represents elements that are more than (thus, different) the sum of its parts, embracing the concept of holism. Thus, a system can only be explained as a totality (Kast & Rosenzwieg, 1981). Nursing has embraced this concept regarding patient and the systems in which care is rendered. General systems theory assumes that one cannot break a system apart in order to fully understand the components, because once the system is put back together, interactions and self-organization occur. The hospice interdisciplinary team is an example of this concept. The team may be separated into the various disciplines involved in hospice care. Knowledge of discipline expertise and roles can be identified. However, when putting the team together as a whole, roles become blurred, integrated, and skills transferable. The interdisciplinary team is different than its individual members.

System interdependence is another tenet of GST. Systems do not exist in isolation. A system is composed of subsystems and is a part of a suprasystem (Kast & Rosenzweig, 1981). Hospice patients interact with the interdisciplinary team, which interacts with the organization, which subsequently interacts with the health care system. Changes in one system will impact components of other systems. Leaders must recognize the interdependence of changes at all levels of the organization – individual, group or team, organizational, and interorganizational – in addressing challenges (Institute of Medicine, 2001). Thus, changes in the health care system will ultimately affect the patient at the center of care. It is important to note that seemingly innocent changes at one level may affect the patient at a different level.
Boundaries define systems, and these boundaries may be open or closed. System boundaries delineate external and internal structure and processes. Closed boundary systems allow limited exchange with the external environment. The environment of a system may be defined as objects or systems existing external to the system of interest. Open boundaries facilitate exchange, importing free energy from the environment and creating states of increasing heterogeneity and order (von Bertalanffy, 1968). Boundaries are permeable, meaning that information and energy flows in and out of the system. The degree of permeability is variable with each system. Qualities of an open system include boundaries, structure, and feedback.

Energy is exchanged through input, throughput, and output processes (Kast & Rosenzweig, 1981). Input (energy, information, or matter) is assimilated into the system from the environment. It is then transformed by the system in some way (throughput), and exported into the external environment (output). A system uses feedback for transformation. A hospice patient is admitted to the hospice organization (input), works with the interdisciplinary team to meet the goals of care (throughput), and the patient is discharged (output). The throughput, or transformation, is of central interest in this research. The interdisciplinary team, through team processes, works with the patient and family for optimal outcomes. Identification of inputs is necessary to identify what structures help facilitate the team processes for optimal output (outcomes).

Systems, using negative entropy, can move in a positive process of self-organization and transform resources to become increasingly differentiated, exhibiting a higher level of organization. Systems exhibit equifinality, suggesting that certain results
may be achieved with different initial conditions and in different ways (Kast & Rosenzweig, 1981). The hospice interdisciplinary team, in working with hospice patients, exhibits these tenets of GST. The interdisciplinary team, by nature of its composition, uses each other’s strengths, weaknesses, and creativity in working with patients to achieve their end-of-life goals. The team is constantly changing and growing based upon experiences with patients. As each patient brings different life experiences into the system, the system creatively changes and becomes more diverse. With this diversity, the system self-organizes and evolves.

Healthcare in general, and hospice in particular, are complex human systems. Stakeholders with diverse perspectives, needs, and vested interests add to system complexity. General systems theory provides an overarching framework for viewing these complex, dynamic systems. As the interdisciplinary team operates within multiple systems, viewing the team in isolation will provide an incorrect assessment of how the team functions. It is important to use a multi-level approach to facilitate knowledge of the multiple systems that impact interdisciplinary team functioning, as these influences will ultimately impact team and patient satisfaction with care.

Application of Donabedian’s Model

Donabedian’s influence on research and quality has been extensive. Donabedian (1966; 1988; 1992) linked organizational structures, processes, and outcomes in a model for quality assessment and systems monitoring. The structure-process-outcome model provides a grounded approach to measuring aspects of the health care delivery system that impact patient care. The value of studying outcomes lies in understanding their
relationship to the structures and processes that produce them (Perrin, 2002); thus, a system must be viewed as a totality in order to understand the care delivery system. This approach assumes that outcomes are affected not only by the care provided (processes), but the structure surrounding this care.

Structure denotes the attributes of the setting in which care occurs (Donabedian, 1988). In addition, structure has been defined as the setting in which the process of care takes place and the instrumentalities of which are the product (Larson & Muller, 2002). However, the application of structure has also been expanded to include the interactional processes that occur among system structures. Van Driel and associates defined structure as the interaction between the health care system, society, and the individuals in society (van Driel, Sutter, Christiaens, & Maeseneer, 2005). Irvine, Sidani, and McGillis Hall (1998) combined structure attributes and interactions to define structure as factors relating to the patient, to the interpersonal aspects of care, and the setting in which care is provided. Thus, structure includes both organizational characteristics and interpersonal factors that provide the context for care delivery.

Identification of structural characteristics that impact processes is important because the ability to generalize from studies of process and outcome requires the specification of the context under which linkages have been identified (Meyer & Massaglia, 2001). In this study, structural characteristics included in the research model include organizational (organizational culture) and team attributes (team complexity and team leadership).
Process relates to what is actually done in the giving and receiving of care (Donabedian, 1988). Process refers to all the interventions and interactions between patients and health care providers (Shortell et al., 1994; van Driel et al., 2005). Mick and Mark (2005) state that gaps in research exist due to the lack of theoretical frameworks about organizational factors relating to work processes. Thus, linkages between structures and processes are important to understand in order to influence optimal outcomes. In this study, hospice interdisciplinary team processes selected were leadership, communication, coordination, and conflict management.

Outcomes are the consequences of health care provided, or the effects of care on the health status of patients and populations (Donabedian, 1988). Without an understanding of the relationships among structure, process, and outcome, one cannot begin to improve quality of care. Thus, good structure increases the likelihood of good process, and good process increases the likelihood of a good outcome (Donabedian). In this study, outcomes selected included team and patient/family outcomes. The intermediate team outcome included perceived team effectiveness, and the final team outcome was team task satisfaction. Family satisfaction with care was the patient/family outcome.

Irvine, Sidani, and McGillis Hall (1998) developed the Nursing Role Effectiveness Model based on Donabedian’s work. Structural aspects identified included nurse factors, organizational factors, and patient factors. Nursing roles included independent functions, dependent functions, and interdependent functions. Outcomes identified were patient and team related. Examination of the relationships among specific
structure, process, and outcome factors enhanced the validity of conclusions and provided for a framework to develop knowledge. The Nurse Role Effectiveness Model was tested with 372 patients and 254 nurses, and findings provided initial empirical support the propositions identified in each domain (Doran, Sidani, Keatings, & Doige, 2002). Sidani and Irvine (1999) adapted this model to facilitate identification and investigation of nurse sensitive outcomes of adult care nurse practitioners.

The Quality-Caring Model is also partially grounded in the works of Donabedian and influenced by Irvine and colleagues. This model blends the concepts of structure-process-outcome with major concepts in the Human Caring Model and places relationships at the core of the therapeutic process (Duffy & Hoskins, 2003). Structure in this model includes the provider, the patient/family, and health care system influences. Process defines the caring relationships that occur among the nurse/patient/family and collaboratively between the nurse and health care team members. Outcomes are defined by providers, patients, and systems. This model has been implemented in the acute care setting (Duffy, 2004).

The American Academy of Nursing Expert Panel on Quality Health Care identified a need for a model that was sensitive to nursing inputs and more useful in looking at structural and process variables related to patient outcomes. In 1998, the Quality Health Outcomes Model was published, incorporating Donabedian’s structure-process-outcome framework into a dynamic model with feedback loops among clients, the system, and interventions. The model was developed to provide a framework for
outcomes research and outcomes management at multiple system measurements (Mitchell, Ferketich, and Jennings, 1998).

A group of faculty and students at the University of Arizona adapted the Quality Health Outcomes Model after identifying concerns with the model (Brewer, 2002). The first concern was the inclusion of “system” as a model construct. System was taken out of the model and replaced by the construct context (Brewer et al., 2002). System became the background for the entire model. Client was placed in the antecedent position in the model, because the client drives the intervention. The third change was the addition of a link between interventions and outcomes (Brewer et al.). The resulting Systems Research Organizing Model (SRO) is a dynamic model that remains grounded in the structure-process-outcome framework, but recognizes the influence of context and client characteristics on the interventions-outcomes relationship (Doyle & McEwen, 2002).

The “black box” of outcomes research focuses on the critical need to identify what causes or produces effectiveness, quality, or outcomes (Mark, 1995). Without clear understanding of the causal relations among structure, process, and outcome, research findings cannot be generalized beyond the current study. Aiken and colleagues called for understanding of how contextual variables affect outcomes (Aiken, Sochalski, & Lake, 1997). Donabedian’s model provides a structure for this understanding.

Figure 1 represents the research conceptual model for the study using Donabedian’s concepts of structure, process, and outcome. The impacts of hospice organizational structures (organizational culture, team complexity, and team leadership) on team processes were examined. The subsequent impacts of team processes on
perceived team effectiveness were also examined. The influence of perceived team effectiveness on team task satisfaction and family satisfaction with hospice care was explored, and the influence of team task satisfaction and family satisfaction with hospice care was assessed in a limited sample.

FIGURE 1. Research Conceptual Model.

Hospice Interdisciplinary Team Model Variables

Linkages between structures, processes, and outcomes are examined in the causal model. Structure variables are present at multiple levels (organizational and team). Team processes include leadership, communication, coordination, and conflict management variables. Both intermediate and terminal outcomes are evident. Perceived team effectiveness is the intermediate team outcome, and team task satisfaction and family satisfaction with care are terminal outcomes.
Structures

Structure includes the attributes of the organization, including organizational patterns and operations, as well as the staff attributes and qualifications. Structural dimensions of organizations describe the internal characteristics of the organization. Organizational culture, team complexity, and team leadership are the structural variables that are hypothesized to influence team processes in this study.

Organizational culture. Organizational culture is defined as the organizational values, beliefs, and norms that shape its behavior, relative to the characteristic way work is approached and conducted (Shortell et al., 1995; Shortell et al., 2000). Culture plays a powerful and pervasive role in shaping the life of an organization and results from interaction among many variables, including mission, strategy, leadership, and human resources practices (Carney, 2006; Strasser, Smits, Falconer, Herrin, & Bowen, 2002). Organizational culture is important to understand because it influences operational development and care delivery, as often team goals and objectives are predetermined by the organization (Saltz & Schaefer, 1996; Westrum, 2004). A strong organizational culture makes it easier for employees to make sense of organizational events, determine what actions are important, improve communication and cooperation, and reduce ambiguity of roles (Cooke & Rousseau, 1988).

Organizational cultures that enhance both employee satisfaction and patient satisfaction consist of work environments where members have positive team interactions and approach tasks in order to meet personal and organizational goals (Cook & Rousseau, 1988). Cultures conducive to team collaboration and effectiveness foster openness, risk-
taking, and interdisciplinary cooperation rather than commitment to functional
departments (Stichler, 1995). Employees are more satisfied and experience less stress and
burnout when they work in organizations that have supportive and empowering
leadership, along with positive group environments that foster collaboration (Aiken,
Clarke, Sloane, Sochalski, & Silber, 2002; Stone, Pastor, & Harrison, 2006).

Research evidence supports a positive relationship between a healthcare
organization’s culture and higher functioning teams and patient satisfaction (Meterko,
Mohr, & Young, 2004; Strasser et al., 2002). Organizational culture and leadership that
provide effective communication, coordination, and problem-solving approaches result in
teams that are more cohesive and result in better quality care provision (Shortell,
Rousseau, Gillies, Devers, & Simons, 1991). Meterko and associates found a positive
relationship between a teamwork culture and patient satisfaction with inpatient care and a
negative relationship between bureaucratic culture and patient satisfaction.

Quinn and Kimberly (1984) defined four organizational culture types: group
culture based on norms and values associated with affiliation, teamwork, and
participation; developmental culture based on risk-taking innovation and change;
hierarchical structure reflecting the values and norms associated with bureaucracy; and
rational culture emphasizing efficiency and achievement. Different cultures are
conducive to different types of work. Shortell and associates (1995) reported that larger
hospital systems experienced lower outcomes and increased lengths of stay, due in part to
hierarchical and bureaucratic cultures. Hospitals with group/developmental cultures also
had greater implementation of quality improvement activities (Shortell et al.). It is
hypothesized that hospice organizations would have either a group or developmental organizational culture because these culture types emphasize teamwork and innovation in order to meet each patient and family’s unique needs.

Team complexity. Team complexity is defined for this study as a composite variable representing team variability and experience. A composite team variable was constructed using mean team characteristics in an attempt to identify how unique team membership influences team processes. The composite variable, team complexity, included average team census, average registered nurse (RN) caseload, and average years of team hospice experience. It was hypothesized that team size, average caseload requirements, and team experience would contribute to unique team differences. Average RN caseload was selected as a proxy measure for caseload. Although all disciplines have different caseload requirements, most hospice organizations use nurses as case managers.

Teams have become building blocks for care provision in many contemporary organizations, including those in health care, because teams are the linkage between organizations and the patients. A team is a group of people who are interdependent with respect to information, resources, and skills and who seek to combine their efforts to achieve a common goal (Thompson, 2000). Essential team features must be present for successful team functioning, such as central tasks, objectives, roles, and leadership. Teams operate on a continuum of degrees of interaction among team members and their degrees of responsibility. Points along this continuum are multidisciplinary teams, interdisciplinary teams, and transdisciplinary teams (Hall & Weaver, 2001). The focus of this research is on the interdisciplinary team.
The complexity of the interdisciplinary team brings additional diversity to the teamwork arena. Interdisciplinary teams are composed of at least two disciplines and are characterized by all members participating in the team’s activities, sharing leadership, and relying on each other to accomplish the goals of the team (Heinemann, 2002). Interdisciplinary practice refers to people with distinct disciplinary training working together for a common purpose, because they make complementary, unique contributions to patient-focused care (McCallin, 2000). Each discipline brings its own philosophy, perspective, and methods for goal attainment, drawing on the underlying assumption that the expertise of more than one practitioner can enhance outcomes (Saltz & Schaefer, 1996). This diversity brings advantages, including increased range of services, easier management of workload, collegial support, cross-fertilization of ideas, and a holistic approach to patient care (Hill, 2000).

Advantages of the interdisciplinary team include increased quality of care due to coordinated and collaborative efforts from different disciplines, improved holistic care planning, increased job satisfaction, and greater professional stimulation (Opie, 1997). Research suggests that patients who received care from an interdisciplinary team received more comprehensive care with a reduction in healthcare costs (Dyeson, 2005). Additionally, research has demonstrated a connection between higher levels of interdisciplinary team functioning and reduced medical services, reduced costs, and increased client satisfaction (Reese & Raymer, 2004). Hospice is a health care setting that utilizes the interdisciplinary team to guide and manage patient care.
Interdisciplinary team size and diversity have been hypothesized to affect team effectiveness, but research findings are conflicting. Kalisch and Begemyn (2005) found that a large team size, lack of familiarity, instability of work force and assignments, and the absence of a common purpose and destiny were barriers to teamwork among hospital nursing staff. Litchenstein and colleagues reported in their study of 1,004 individuals working on 105 interdisciplinary teams in the Department of Veterans Affairs psychiatric hospital setting that intergroup relations among the team members suffered and perceived level of team integration declined as teams became more diverse (Litchenstein, Alexander, Jinett, & Ullman, 1997).

In contrast, Magjuka and Baldwin (1991) found that larger team size, greater within-team heterogeneity, and greater access to information were positively associated with team effectiveness in their study of 72 teams in two manufacturing firms (as cited in Guzzo & Dickson, 1996). Team size positively predicted accurate and timely diagnosis for breast cancer patients; and greater professional diversity in breast cancer teams positively predicted team effectiveness (Haward et al., 2003). A larger team size was positively associated with self-rated and externally rated effectiveness in primary health care teams in the United Kingdom (Borrill, West, Shapiro, & Rees, 2000).

Studies emphasizing team-level issues have identified goal specificity, team leader attitude, team leader skills, team skills, training, and team complexity as variables affecting team effectiveness (Routhieaux & Guteck, 1997). Team characteristics associated with better team performance include increased years of professional work experience and increased ethnic diversity. Thus, team composition characteristics,
including team size, diversity, and experience, appears to influence team effectiveness, but more research is needed as findings are inconsistent.

Temkin-Greener and colleagues studied interdisciplinary team performance in a Program of All-Inclusive Care for the Elderly (PACE) setting (Temkin-Greener et al., 2004). The PACE setting is similar to the hospice setting in that the interdisciplinary team manages, implements, and evaluates care. Team variables studied included age, gender, ethnicity, education, professional and paraprofessional categories, employment status, years of experience in occupation or profession, and years of experience in PACE. Age was the only statistically significant individual level variable that influenced team performance, with older respondents assessing that team performance was better than younger respondents (Temkin-Greener et al.). Lichtenstein et al. (1997) found that older team members rated job-related attitudes (job satisfaction and turnover) and level of team integration more positively than younger team members. Thus, respondents who are older appear to have a more positive attitude (Schofield & Amodeo, 1999).

Currently, there is limited research regarding hospice interdisciplinary team composition and characteristics that influence team functioning. More research is required to understand fully how unique team characteristics influence hospice interdisciplinary team processes.

**Team leadership.** Team leadership is defined for this study as self-defined team leader behaviors and practices that influence team members to accomplish goals. Leadership has been defined as the process of influencing people to accomplish goals, with leadership style defined as the different combinations of task and relationship
behaviors used to influence people to accomplish goals (Huber et al., 2000). Leadership is concerned with building cohesive and goal-oriented teams because there is a causal link between team leadership and team performance (Hogan, Curphy, & Hogan, 1994). The team leader, or the intermediate level supervisor, has a crucial role in interpreting organizational mission, vision, and culture, facilitating team process, and retaining staff. An effective team leader must be both internally in touch with the state of the team and externally aware of the demands on the team (Rosen & Callally, 2005).

Leadership is a complex phenomenon that has been conceptualized in multiple ways. Bass (1990) utilized several domains to define leadership including: a focus on group processes, personality and its effects, the art of inducing compliance, the exercise of influence, acts or behaviors, a form of persuasion, and an emerging effect of interaction (as cited in Vance & Larson, 2002). Leadership dimensions identified by Temkin-Greener and associates included setting goals/standards, responding to changes, and supporting staff (2004). Team leadership was defined and measured in this study by the revised Leadership Practices Instrument, which conceptualized leadership from three domains: cognitive, behavioral, and supportive (Tourangeau & McGilton, 2004). Thus, leadership domains are similar among these perspectives, including activities of thinking, acting and supporting the team and its members.

Burns (1978) analyzed transactional and transformation leadership styles, with transactional leadership based on an exchange (transaction) between the leader and follower and transformation leadership that also involved a change in follower attitudes, values and behaviors as a result of the interaction. Transactional leadership involves an
economic exchange to meet each other’s needs. In contrast, transformational leaders exhibit idealized influence, inspiration, intellectual stimulation, and individualized consideration (Bass, 1985). Both transformational and transactional leadership were positively related to employee job satisfaction in a study focusing on a hospital work unit (Morrison, Jones, & Fuller, 1997). However, transformational leadership was more positively associated with followers’ attitudes, perceptions, performance, and organizational performance in another study (Vance & Larson, 2002).

Leadership style and behaviors have been linked to employee retention and employee satisfaction. Employees have become a valuable commodity in today’s health care environment, thus the importance of the middle manager role has been a crucial variable of interest. Leadership behaviors found to positively influence staff retention include high leader visibility, willingness to share leadership responsibilities, and support and consideration of staff (Kleinman, 2004; Shabbrook & Fenton, 2002). Boyle (1999) conducted a qualitative survey of 255 staff nurses in four urban hospitals to investigate the direct and indirect effects of manager characteristics of power, influence, and leadership style on nurse retention. Results suggested that leaders who sought out and valued contributions from staff through shared decision-making had higher retention rates. Thus, there is consistent evidence that supportive leader behaviors positively influence staff retention.

Leaders also influence employee job satisfaction. Force (2005) reviewed the nursing literature to identify leadership traits that contributed to job satisfaction and nurse retention. A transformational leadership style, extroverted personality traits, tenure, and a
graduate education were leadership traits that led to employee job satisfaction. Loke (2001) examined the effect of leadership behaviors on employee outcomes (job satisfaction, productivity, and organizational commitment) in Singapore. Use of positive leadership behaviors was significantly correlated to employee outcomes. Twenty-nine percent of job satisfaction, 22 percent of organizational commitment, and 9 percent of productivity were explained by use of positive leadership behaviors.

Nakata and Saylor (1994) studied management styles of first-line nurse managers and found a positive correlation between perceived management style and staff nurse job satisfaction. The closer the management style was to participative group management, the higher the level of staff nurse job satisfaction. McNeese-Smith (1993) collected data from 41 hospital department managers and 610 staff members in a study determining the relationship between a manager’s leadership style and employees’ productivity, job satisfaction, and commitment. There was a significant positive correlation between all positive leadership behaviors and the selected employee outcomes. In addition, McNeese-Smith (1995; 1997) identified that nurses felt that job satisfaction was most influenced by their manager.

Evidence suggests that positive leadership characteristics influence employee job satisfaction. A positive relationship between community case managers and their supervisors appeared to positively influence registered nurse case manager’s job satisfaction and retention. Common leadership themes identified were the need for staff to trust their supervisor, the connection of trust to job satisfaction, the need for nurses to feel empowered and have a voice at work, and a leadership style that influences job
satisfaction and job retention (Hogan, 2005). Navaie-Waliser and associates found a positive relationship between leadership practices and job satisfaction, as well as finding that reduced workload, improved work environment, and increased interaction with leadership were important in order to coordinate care in home care settings (Navaie-Waliser, Lincoln, Karuturi, & Reisch, 2004).

Approachability, availability, role modeling, and inspirational behaviors have been identified as important leadership characteristics by nurses. Communication skills, offering encouragement, defining expectations, and problem solving were the most common behaviors identified as desirable (Houser, 2003). Previous leadership experience has been positively correlated with leadership effectiveness. Predictors of leadership success, in order of contribution, include: previous nursing management experience, leadership continuing education, length of time in present position, previous leadership experience, and the level of nursing education (Irurita, 1988). Lourenco, Shinyashiki, and Trevizan (2005) found that greater knowledge exhibited by nurse managers was positively associated with power, teamwork, and coherence between values and attitudes. Therefore, there is evidence that prior management and leadership experience are beneficial to leadership effectiveness and subsequently, positive employee outcomes.

Limited research has explored how organizations affect leaders, and how leaders affect organizational outcomes (Vance & Larson, 2002). In addition, most leadership research has been descriptive in nature (Vance & Larson) and has been conducted in hospital and home health settings. Although it is hypothesized that research findings from these settings would be consistent with hospice organizations, research is needed to
identify if this is true. Finally, much of the leadership research has focused on nurses only. The assumption is that these leadership findings are applicable to the hospice interdisciplinary team, but this remains to be verified.

*Additional organizational structure knowledge.* Additional knowledge is available regarding organizational influences on processes and outcomes in health care organizations. Because this study was an exploratory examination of hospice interdisciplinary team processes and effectiveness and number of independent variables in the model was a concern, only the variables expected to influence team processes the most were included. This section will provide additional evidence and support regarding organizational influences on processes and outcomes that were not directly measured in the study. These organizational influences may be important to include in subsequent studies.

Organizational characteristics and influences have been studied extensively over the past 20 years in “magnet hospital” settings. The term “magnet hospitals” was used to designate a group of hospitals that attracted and retained staff despite national shortages (Flynn & Deatrick, 2003). The attributes associated with these hospitals promoted nurse recruitment and retention, but in addition, were associated with superior patient outcomes (Aiken, Havens, & Sloane, 2000). Organizational attributes include a professional practice environment with a highly visible nurse executive, participatory management practices, practice autonomy, and collegial relationships with physicians (Flynn & Deatrick). In a study examining hospital nurses’ job satisfaction and organizational characteristics, the nurses’ views of cohesion with colleagues and collaboration with
medical staff were found to be the best predictors of job satisfaction (Adams & Bond, 2000). Additional significant predictors included having sufficient staff with the right mix of skills.

There are limited studies identifying organizational features associated with “magnet home care agencies;” however, results of these studies support the conclusion that a professional practice environment is valued by nurses (Flynn, Carryer, & Budge, 2005; Flynn & Deatrick, 2003). In a 2003 study, seven focus groups, comprised of 56 home care nurses, identified the following as important home care organizational attributes: (a) extensive preceptor based orientation, (b) an organized and supportive office environment, (c) reasonable working conditions, (d) accessible field security, (e) competent and supportive management, and (f) a patient centered mission and vision (Flynn & Deatrick).

Flynn, Carryer, and Budge (2005) explored the importance of organizational traits in three settings: hospital, home care, and district. Home care nurses identified the following regarding traits as supportive of their practice: (a) supervisory staff supportive of nursing, (b) working with nurses who are clinically competent, (c) not being placed in a position of having to do too many things that are contrary to nursing judgment, (d) a nurse manager who is a good manager and leader, (e) a good orientation program for newly employed nurses, (f) freedom to make important patient care and work decisions, (g) good relationships with other departments, (h) a plan of care that is accessible and up to date for all patients, and (i) enough registered nurses on staff to provide quality patient
care. Thus, organizational structure characteristics such as supervisory support and staff training provide support for care provision and staff satisfaction.

Upper management commitment, employee involvement at all levels, and constant communication of mission and goals have also been identified as organizational factors predictive of team effectiveness (Higgins & Routhieaux, 1999). Interestingly, home care research suggests that nurses are not satisfied with the degree of input they have at the organizational level (Ellenbecker, 2001; Tullai-McGuineness, Madigan, & Anthony, 2005). No initiatives to date have been developed looking at organizational attributes associated with good staff and patient outcomes in hospice settings.

Organizational ownership status has been demonstrated to influence care provision. Ownership has been identified as an important structural variable in hospital studies, as ownership impacts hospital performance in relation to system operations and personnel issues (Baker et al., 2000). A recent Consumer Reports analysis concluded that not-for-profit nursing homes generally provided better care than for-profit homes (Consumer Reports, 2006). In addition, independently run nursing homes appeared to provide better care than those owned by chains. These findings are consistent with results identified by Aaronson, Zinn, and Rosko (1994).

There have been few studies exploring the relationship of ownership form and hospice outcomes. The percentage of nonprofit hospice organizations decreased from 67% in 2003 to 63% in 2004. The number of hospices that were for-profit grew during that same time period from 29% to 31% (National Hospice and Palliative Care Organization, 2004). Hamilton (1994) examined for-profit and not-for-profit hospices;
findings revealed little difference in cost or quality of service. However, there were significant differences in the numbers of patients served by ownership status. Results indicated that nonprofit hospices were patient maximizers, while for-profit hospices for profit maximizers.

For-profit hospices were compared to nonprofit hospices in a 1997 California Office of Statewide Health Planning and Development annual home care and hospice survey. The study concluded that for-profit hospices served a higher percentage of persons with noncancer diagnoses, residents of long-term care, and persons with government insurances. Differences in patterns of nursing services were related to patient characteristics (Lorenz et al., 2002). In another study on ownership status and patterns of care, patients cared for by for-profit hospices were more likely to be female, reside in an inpatient unit, have more activities of daily living, and receive care from hospices that were part of a chain. Results also showed that patients of for-profit hospices received a significantly narrower range of services than patients of non-profit hospices (Carlson, Gallo, & Bradley, 2004).

Average daily census and number of direct care staff are an indication of the organization’s size. Size has been associated with increased bureaucracy in hospital settings, with evidence of poorer patient outcomes (Shortell et al., 1995). No studies were identified that assessed organizational size in hospice organizations and its subsequent influence on outcomes.

Although much is known about organization structures and subsequent relationships in general, very little of this knowledge has been applied to hospice settings.
Effective functioning of hospice interdisciplinary care is crucial in order to provide optimum patient care. The interdisciplinary team needs to be supported systemically at the individual, team, and organizational level, calling for multilevel support (O’Connor et al., 2006). Much more research is required to further understanding of hospice structures and operations and subsequent influence on workforce and patient/family care.

Processes

Team processes were defined for this study as the activities and interactions that take place within a team and its leadership to achieve outcomes. The team process variables leadership, communication, coordination, and conflict resolution were selected because they had been identified in the literature as fundamental for effective teamwork (Heinemann, 2002; Saltz & Schaefer, 1996; Shortell et al., 1991; Temkin-Greener et al., 2004). These team processes are multidimensional and compatible with the interdisciplinary team literature. The team process communication is defined as the process of sending and receiving information (Grohar-Murray & DiCroce, 1997; 2003). Coordination is defined as the process of integrating or linking together different people or activities (Grohar-Murray & DiCroce). Conflict management is defined as the techniques and strategies employed to manage differing opinions and points of view, and leadership is staff perception of degree to which team leaders develop, communicate, and support the hospice interdisciplinary team.

Interdisciplinary team processes emphasize interdependence among members, congruent goals, collaborative efforts, and consensus leadership (Rice, 2000). Stewart and Barrick (2000) found that intra-team processes mediated the relationship between
team structure and performance in situations when team tasks were very interdependent. Gittel (2000a) has argued that work processes in service settings are highly interdependent and relatively non-programmable, calling for spontaneous coordination among work members. Hospice work processes require team members to constantly communicate, coordinate, and adjust as patient conditions and goals change. Intra-team processes can either enhance team production by facilitating efforts of members who work well together or generate work losses much greater than would normally be expected by one person (Hackman, 1987). Hospice, by nature of the work, is highly interdependent and team oriented. Hospice interdisciplinary teamwork is critical for the service and management of the entire person, family, and environment with the ultimate goal of a “good death” (Parker-Oliver, Bronstein, & Kurzejeski, 2005).

Interdisciplinary collaboration has been identified as an effective interpersonal process that facilitates the achievement of goals that cannot be reached when individual professionals act independently (Bronstein, 2003). Collaboration frequently is defined as an antecedent to coordination, cooperation, and sharing (McCallin, 2001), or an overarching concept that includes the dimension of communication, problem-solving/conflict management, and coordination (Hansen, Bull, & Gross, 1998). Antecedents to collaborative relationships include recognition and acknowledgement of team interdependence, shared decision making, and contribution of expertise; consequences include enhanced communication, improved team synergy to accomplish tasks that otherwise could not be achieved, increased employee satisfaction, and increased patient outcomes (Baggs & Schmitt, 1997; Henneman, Lee, & Cohen, 1995;
Stichler, 1995). It is not what people have in common, but their differences that make teamwork more powerful (Davies, 2000).

Bronstein’s model of interdisciplinary collaboration identifies five team process components: interdependence, newly created professional activities, flexibility, collective ownership of goals, and reflection on process (Bronstein, 2002; 2003). Professional roles, structural characteristics such as caseload and agency culture, personal characteristics such as trust, respect, and understanding, and history of collaboration are factors that influence the degree of the team collaboration process. Barriers are also present within the interdisciplinary team that negatively influences collaboration. Role ambiguity, conflict, history of disciplinary hierarchy, and lack of trust and respect are barriers that inhibit collaboration (Ruebling et al., 2000).

Thirty-six health care professionals from a 42 bed orthopedic unit were interviewed about their experience with multidisciplinary collaboration as a foundation for patient-focused care (Jones, 1997). Interview analysis revealed four collaboration categories: patient care process, communication, teamwork, and discipline/role. A suggested strategy for enhanced patient care derived from the themes included care coordination among all health professionals which involve patients and families. The process should include adequate time for planning, problem-solving, and development of patient care plans. Teamwork can be fostered through cross-training of health care professionals. These findings are similar to processes that occur within a hospice interdisciplinary team.
Temkin-Greener and associates (2004) adapted a team effectiveness model developed by Shortell and Rousseau to measure interdisciplinary team processes and perceived effectiveness in a long-term care setting (PACE). Effective team processes were expected to enhance team cohesiveness and influence team performance, measured as team effectiveness (Shortell et al., 1991). Team process variables (communication, coordination, conflict management, and leadership) explained 52% of the variance in team effectiveness (Temkin-Greener et al.). In addition, communication, coordination, conflict management, and leadership were positively significantly correlated with perceived team effectiveness (Temkin-Greener et al.). The team process variables of communication, coordination, conflict management, and leadership were further explored in this study.

**Communication.** Effective communication has been defined as the extent to which work group members engage in open, honest communication, share and accept constructive criticism, willingly share information with others, keep each other informed at all times, and have no hidden agendas (Campion, Medsker, & Higgs, 1993). Dimensions of communication include openness, accuracy, timeliness, understanding, and satisfaction (Shortell et al., 1991). Communication dimensions identified by Temkin-Greener and associates (2004) were accuracy, effectiveness, and openness, very similar to those identified by Shortell and associates.

Communication was found to affect team cohesion and team effectiveness most significantly in Temkin-Greener and associates’ study of interdisciplinary team effectiveness ($\beta = .43, p = <.01$). In addition, the quality of communication among
hospice interdisciplinary team members has been found to strongly influence client satisfaction (Childress, 2001; Grbich, Maddocks, & Parker, 2001). Higginson and Constantini (2002), in examining end-of-life communication in European countries, reported that poor communication among palliative care team members negatively affected patient quality of life for between 10 and 20 percent of patients.

Poor communication skills among different discipline members have been identified as a major factor in preventing teamwork (Mariano, 1999). Wittenberg-Lyles (2005) identified interdisciplinary communication as an issue during hospice team meetings. Although hospice is theoretically based on a biopsychosocialspiritual model of care, interdisciplinary meeting communication did not reflect this model. The biomedical model of care was supported, with humanistic communication used as nonessential contributors to the conversation. Because the medical model was more prevalent in team communication, other dimensions of care did not receive the same communication importance. Bokhour (2006) also identified communication issues at interdisciplinary team meetings in long-term care settings. Of the three methods of communication that were identified (giving report, writing report, and collaborative discussion), only collaborative discussion met team goals and occurred only 32 percent of the time.

Communication problems may be masked by a team approach; team members may function to protect each other rather than support the patient and family. Barriers to interdisciplinary communication include: territoriality, lack of common philosophy, difference in language style among the hospice disciplines, restricted contact due to busy schedules, and physician dominance of teams and decision-making (Abramson &
Mizrahi, 1997; Street & Blackford, 2001). These findings support that interdisciplinary communication is an important dimension of team processes because communication may affect staff and patients positively or negatively.

Coordination. Coordination has been defined as the degree to which work activities are coordinated among team members and between groups (Shortell et al., 1991). In addition, coordination refers to the extent that team members offer help and assistance, are receptive to other members’ opinions and views, and work together for the good of the group (Campion et al., 1993). Cohen, Ledford, and Spreitzer (1996) defined group coordination as group members working together without duplicating or wasting efforts and doing so with spirit and energy. Dimensions of coordination include work activities, protocols, and staff interaction (Temkin-Greener et al., 2004).

Barriers to a coordinated team effort with a full use of disciplines include lack of knowledge of the expertise of other professionals, role blurring, conflicts arising from the differences among the professionals in values and theoretical base, negative team norms, and administrative issues (Reese & Sontag, 2001). Larson (2003) reports that the hospice interdisciplinary approach is often undermined by the failure of team members to understand the unique contributions and expertise of other disciplines. Teams that report effective, coordinated group interactions were more successful in achieving improvements in processes and outcomes of care than teams that reported less successful interactions in a study evaluating whether training health care teams in quality improvement methods would result in patient outcomes (Doran et al., 2002).
Conflict management. Conflict management has been defined as the techniques and strategies employed to manage differing opinions and points of view. Conflict is usually based upon a difference over goals, objectives, or expectations between individuals or groups (Peoples Law Library, n.d.). Although conflict is a normal component of organizations, it is counterproductive to patient care and teamwork. Thus, team conflict management strategies become critical for the care coordination. According to a study by the American Management Association, managers spend an average of 20% of their time dealing with conflict, and conflict management skills are more important than planning, communication, motivation and decision-making (McElhaney, 1996). Organizational conflict has been identified as intrapersonal (conflict within the person), intrapersonal (intragroup conflict), intergroup, and interorganizational (Rahim & Bonoma, 1979). Conflict management dimensions identified by Temkin-Greener and associates (2004) include problem-solving, arbitration, and avoidance. Open, collaborative problem-solving approaches are advocated to resolve team conflicts. Effective teams are able to openly acknowledge sources of conflict in an atmosphere of mutual respect (Connor et al., 2002; Shortell et al., 1991).

Devine and associates surveyed 405 diverse United States organizations in their research on prevalence, duties, compositions, and structure of groups and teams in practice (Devine, Clayton, Philips, Dunford, & Melner, 1999). Low levels of reported conflict and smaller team size were associated with higher levels of team effectiveness. Reduced interpersonal conflict was the best predictor of perceived team effectiveness.
Cox (2003) reported that intrapersonal conflict had a direct negative effect on work satisfaction and team performance effectiveness. Cox (2001) also assessed the effects of unit morale and interpersonal relations on nursing unit conflict. Perceptions of unit morale and better interpersonal relations were associated with lower intragroup conflict and less anticipated turnover. Study conclusions suggested the importance of increasing team-building activities and decreasing stressful work environments

Leadership. Leadership, as defined from a team process perspective, is the interdisciplinary team’s perception of the degree to which team leaders develop, communicate with, and support the team. Temkin-Greener and colleagues (2004) defined leadership dimensions as setting goals/standards, responding to changes, and supporting staff. Team leadership is an important enabler of positive and effective team processes. Leadership sets the goals and standards for the team and will also facilitate or inhibit team processes (Mukamel et al., 2006).

A perceived lack of organizational and supervisory support has been identified as a primary factor contributing to staff job dissatisfaction (Cameron, Armstrong-Stassen, Bergeron, & Out, 2004). Hogan (2005) noted that a positive relationship between staff nurse case managers and their case management supervisors significantly affected job satisfaction and retention in case managers. Home healthcare employees reported that a knowledgeable and supportive manager and a strong, supportive administration as important organizational traits for enhanced job satisfaction (Flynn & Deatrick, 2003). Clearly, it is important to assess the influence of leadership from the employee’s perspective to gain insight into the nature of leadership effects.
McCallin (2001), in her literature review of interdisciplinary practice, stated that there is a notable lack of linkages from interdisciplinary concepts to contexts and more research is needed to provide empirical evidence of the processes teams use as they work and interact within the context of health care. There also needs to be empirical linkages to outcomes. Currently, there is limited research regarding hospice interdisciplinary teams and how they function.

Outcomes

Outcomes are the consequences of organizational structure and process. In this research model, there was an intermediate team outcome (perceived team effectiveness) and two terminal outcomes (team task satisfaction and family satisfaction with hospice care). Perceived team effectiveness was expected to positively influence team task satisfaction and family satisfaction with hospice care, and team task satisfaction was hypothesized to positively influence family satisfaction with hospice care. It was anticipated that hospice interdisciplinary teams that felt they were effective would be more satisfied in their work. In addition, interdisciplinary teams that felt effective and satisfied would provide care that resulted in satisfied families.

Perceived team effectiveness. Perceived team effectiveness was defined in this study as the interdisciplinary team perception of team function and achievement. Team effectiveness has been defined and examined in various ways. The classic definition by Hackman is the degree to which the group’s output meets requirements in terms of quantity, quality, and timeliness, the group experience improves its members’ ability to work together as a group in the future, and the group contributes to individual satisfaction
Team effectiveness has also been defined as team performance in two domains: effectiveness of perceived technical quality of care and effectiveness of meeting family needs (Shortell et al., 1991; Temkin-Greener et al., 2004). In palliative care, an effective interdisciplinary team addresses the various needs of the patient and family in an appropriate way and offers patients an appropriate package of care (Bliss, Cowley, & While, 2000; Toner, Miller, & Gurland, 1994). Because team effectiveness was assessed from the hospice interdisciplinary team perspective, perceived (self-assessed) team effectiveness was the construct measured in this study. Perceived team effectiveness was hypothesized as an outcome of antecedent team processes.

Effective teams are characterized by a common purpose, clear goals, competent members, a unified commitment, complementary skills, a collaborative climate, mutual responsibility, standards of excellence, and principles of leadership (Homans, 1995). Grohar-Murray and DiCroce (2003) stated that the benefits of a well-functioning, cohesive team include increased productivity, improved quality, reduced operational costs, reduced conflict, and increased adaptability and flexibility.

Structure and process variables have been found to influence team effectiveness. Many models of group effectiveness contain variables related to group composition (structural variables). Hackman’s (1987) model of group effectiveness consists of group size, team members’ technical and interpersonal skills, and a balance of homogeneity and heterogeneity in member mix (as cited in Cohen, Ledford, & Spreitzer, 1996). Gladstein’s (1984) model measures group composition in terms of adequate skills, heterogeneity, organizational tenure, and job tenure (as cited in Cohen, Ledford, &
Spreitzer). Campion, Papper, and Medsker (1996) studied the relationships of work team characteristics and team effectiveness. Structural characteristics included job design (examples include participation and task significance), team composition (heterogeneity, size, and flexibility), and context (training, managerial support, and communication/cooperation). Team process characteristics included workload sharing, social support, and interdependence (task and goal). Team effectiveness was measured by productivity, satisfaction, and manager judgments. Relationships were strongest among team effectiveness and process characteristics, followed by job design and context (structural) relationships. Findings suggest that team structures and processes influence team effectiveness (Campion et al.).

A national study by Shortell and associates (1991) also suggest that structure and process variables affect team effectiveness. In a study involving 42 intensive care units with over 1,700 respondents, organizational structural characteristics (team-satisfaction oriented culture and strong leadership) and organizational process characteristics (open and timely communication, effective coordination, and open collaborative problem-solving) were associated with improved team effectiveness and patient outcomes. Structure and process variables identified in this research are consistent with the current research model.

Domains of perceived team effectiveness were enhanced in a subsequent study by Shortell and associates (2004). Four domains of perceived team effectiveness were identified in a study that included data from 40 teams participating in the national evaluation of the Improving Chronic Illness Program. These four domains included:
overall team effectiveness, team skill, participating and goal agreement, and organizational support. Organizational support was an additional domain not included in the prior definition of team effectiveness. This factor reflected the team’s ability to obtain organizational resources and use of organizational reward factors to encourage work. Factors identified as influencing team effectiveness included organizational culture, organizational commitment to quality improvement, and the presence of a team champion. A focus on patient satisfaction, the presence of a team champion, and maintaining a balance of organizational culture values were associated with perceived team effectiveness.

Cox (2003) performed a study examining the effects of intrapersonal, intragroup, and intergroup conflict on team performance effectiveness and work satisfaction. Team performance effectiveness was conceptualized as having the following dimensions: quality of patient care provided, efficiency of the unit’s work, the unit’s morale and spirit of teamwork, interpersonal relations, and a willingness to help out. Findings suggested that nurses who worked on larger units had higher perceptions of team performance effectiveness, and nurses who worked on units with a higher percent of registered nurses had higher perceptions of team performance effectiveness. In addition, team performance effectiveness had a significant positive effect on work satisfaction. This is consistent with other studies in which team performance and work satisfaction were examined (Shortell et al., 1991; Weissman, Gordon, Cassard, Berger, & Wong, 1993; Zimmerman et al., 1993).
Evidence suggests that organizational and team structure characteristics influence team effectiveness. Organizational culture and values, team composition, and job design are variables that consistently influence team effectiveness. Interestingly, the team process variables used in this study (leadership, communication, coordination, and conflict management) have been conceptualized as both process variables and outcome measures of team effectiveness. Effective interactions and communications can be conceptualized as endpoints of successful team functioning. Perceived team effectiveness in the current study was treated as an outcome of successful team processes.

*Team task satisfaction.* Team task satisfaction is defined as the team’s shared attitude toward its task and the associated work environment (Mason & Griffin, 2003). Team task satisfaction has been conceptualized as the group-level counterpart to individual job satisfaction (Mason & Griffin, 2005). As the team is the level of interest in this research, the group level satisfaction is appropriate to measure. Group (team) task satisfaction has been conceptualized as being functionally independent of individual level job satisfaction (Mason & Griffin, 2002). Aggregation of individual level ratings leaves group level variance unexplained. Mason and Griffin propose that group satisfaction develops out of within group homogeneity, which is a product of shared work conditions, social influence processes, attraction-selection-attrition effects, and emotional group effects associated with work groups.

The structure of team task satisfaction is different from individual job satisfaction in that groups have an internal and external environment. Therefore, team task satisfaction reflects group satisfaction with the task itself, group satisfaction with quality
of the internal environment (the ability of the group to work together), and group satisfaction with the quality of the external environment (rewards, organizational culture) (Mason & Griffin, 2005). Team task satisfaction has explained greater variance in selected outcomes than aggregated individual aggregated ratings (Mason & Griffin).

Mason and Griffin have used this construct in two studies. An investigation of group task satisfaction in 157 students in 47 groups revealed within-group-agreement and significant between-group variance, indicating a group level variable. Student groups were able to distinguish among group task satisfaction, task cohesion, social cohesion, group climate, group potency, and individual job satisfaction. Group task satisfaction explained unique variance above the explained variance of aggregated individual job satisfaction (Mason & Griffin, 2003).

Another study investigated whether group task satisfaction would explain variance in citizenship behaviors, group performance, and absenteeism norms after aggregated individual job satisfaction ratings and group affective tone were taken into account. Data were collected from 66 work groups and 51 supervisors, with results indicating that group task satisfaction explained unique variance of citizenship behaviors and absenteeism norms, but did not explain unique contribution to group performance (Mason & Griffin, 2005).

Although research regarding group (team) task satisfaction is in its infancy, much is known about individual satisfaction. Satisfaction is a complex construct derived from work attitudes and perceptions of various work elements, including rewards, autonomy, and professional status (Shader et al., 2001). Shader and colleagues demonstrated a
positive association between high rates of group cohesion and work satisfaction. Social networks and a supportive workplace are important factors in preventing dissatisfaction (Garret & McDaniel, 2001; Payne, 2000). Leppa (1996) found that interpersonal relationships were an important part of job satisfaction and were also associated with greater patient safety and higher quality of care. These findings provide support for the importance of positive work environments and effective use of teams for enhanced work (task) satisfaction.

Weissman and associates (1993) examined the effects of a unit-level self-management model in clinical areas at John Hopkins Hospital. Team performance was defined as effectiveness, with team effectiveness self-rated by nurses as how the team functioned in the provision of patient care quality, efficiency of team, moral, teamwork, interpersonal relations of the team, and willingness to help team members out. Unit self-management was found to increase work satisfaction through two processes: coordination of care and effective team performance. Young (1994) also identified correlations between high functioning multidisciplinary teams and job satisfaction. Therefore, work satisfaction seems to be a consequence of team performance and coordination.

Significant variables impacting satisfaction identified from Blegan’s classic meta-analysis of nurses’ satisfaction were communication with supervisor, autonomy, recognition, routinization, communication with peers, fairness and locus of control (1993). Agho, Mueller, and Price (1993) examined determinants of employee satisfaction and concluded that the degree to which employees liked their job was influenced by a combination of environmental characteristics (opportunity), the job (routinization and
distributive justice), and personality variables (positive affectivity and work motivation), explaining 57% of variance in job satisfaction in their model. It is evident from these findings that structural organizational elements influence employee satisfaction.

Employees have global beliefs concerning the extent to which organizations value their contributions and care about their well-being. Perception of perceived organizational support has been associated with positive organizational outcomes, including employee satisfaction. A meta-analysis of the perceived organizational support literature revealed that three categories of beneficial treatment (fairness, supervisor support, and organizational rewards/favorable job conditions) were associated with perceived organizational support (Rhoades & Eisenberger, 2002). Perceived organizational support, in turn, was related to outcomes favorable to employees (satisfaction) and to the organization (employee affective commitment and performance).

Patrick and Laschinger (2006) looked at the effect of perceived organizational support on middle nurse manager’s role satisfaction. Structural empowerment was positively associated with the middle level manager’s perceived organization support, indicating that positive perceptions of organizational support may play an important role in retaining current managers. Shanock and Eisenberger (2006) also found that supervisors’ perceived organizational support was positively related to their subordinates’ perceptional of supervisor support. Thus, perceived organizational support and other organizational factors are important to acknowledge because they may influence satisfaction at multiple levels.
Although most research on satisfaction has occurred within the hospital setting, there are a few community based studies in hospice settings. DeLoach (2002; 2003) and DeLoach and Monroe (2004) examined job satisfaction among interdisciplinary hospice workers. Job satisfaction was defined as the degree to which an individual experiences pleasure in his or her work in hospice settings (DeLoach, 2003). Job satisfaction was viewed as multidimensional, with many factors affecting the degree of satisfaction. Supervisory support, positive affectivity, role ambiguity, autonomy, and routinization were significant predictors of job satisfaction. DeLoach (2002) reported that the majority of respondents, in one study of hospice team members (N=76), were satisfied with their jobs in hospice, and that job satisfaction in hospice was linked to team functioning.

Factors affecting job satisfaction of the hospice interdisciplinary team in a subsequent study included task significance, supervisory support, good relationships with co-workers, receiving rewards from the organizations, having a positive disposition towards work, having a variety of enjoyable and challenging responsibilities, manageable caseloads, and having a high level of motivation to do the job (DeLoach & Monroe, 2004). Although all interdisciplinary team members were satisfied with their work, social workers were the least satisfied because they did not feel that they were rewarded for their agency contributions and were not as autonomous (Monroe & DeLoach, 2004). From this limited research, it appears that many contextual factors identified in health care literature are congruent with hospice interdisciplinary team findings.

Understanding the impact of organizational and team attributes within hospice organizations provides a better framework on how to create environments conducive to
team task satisfaction. In the present study, team task satisfaction was the identified terminal staff outcome that influences family satisfaction with care.

*Family satisfaction with hospice care.* Family satisfaction with hospice care is defined as the family rating of important process and outcome attributes of the hospice experience. Hospice provides a unique setting for measuring patient satisfaction because very often the terminal outcome of care is death. Satisfaction with care has been identified as an important priority for hospice outcome research (Morrison, Siu, Leipzig, Cassel, & Meier, 2000; Teno, Byrock, & Field, 1999).

Patient satisfaction is the client’s perception of care received compared with the care the client expects (Kroposki & Alexander, 2006); however in hospice care, patients are very often unable to be interviewed as they are often weak, confused, or deceased (Fakhoury, 1998). Family and friends become proxy respondents for hospice patients. Proxies, defined as surrogate responders for persons at end of life, are frequently the only source of measurement for outcomes, and evidence indicates that they report objective states (mobility, service evaluation) more accurately than they report subjective states (pain, depression) (National Institutes of Health, 2005). Research describing the hospice experience has often relied on bereaved family members to report their observations and medical care provided to their loved ones (Teno, Clarridge, Casey, Edgman-Levitan, & Fowler, 2001). Proxies become a very important source of information as they are able to voice their own perceptions, observations, or report what the patient had told them (Teno, Byrock, & Field, 1999). In addition, as family members are included in the hospice unit
of care, understanding the family experience is also important (Addington-Hall & McPherson, 2001).

Proxy respondents, however, may be biased towards the surrogate’s perception of care rather than the patient’s; thus proxy responses may be quite different from the patient’s (Aspinal, Addington-Hall, Hughes, & Higginson, 2003; Morrison et al., 2000). An additional concern is that surveys completed after death may be subject to recall bias, and therefore not indicative of the true experience (Morrison et al.). Often individuals tend to remember the positive experiences and negative experience memories become weaker with time. These issues may affect the type of information organizations receive regarding care satisfaction, but further research is required to explore these issues more fully (Aspinal et al.).

Historically, outcome measures in hospice settings predominantly inquired about control of pain. Inquiries about symptoms, including nausea, vomiting, bedsores, and constipation, were more limited (Wilkinson, 1986). However, in the recent years, satisfaction with provision of hospice services and quality of life has become more common. Pevey (2005) performed one of the few studies on hospice satisfaction with living hospice patients. Thirty-eight patients were asked, “Has hospice been a comfort to you?” A follow-up question was, “How has it been a comfort?” Overwhelmingly, hospice patients were immensely comforted, with responses falling into categories of facilitating communication and allowing open discussion, providing human contact, and physical attention as their condition(s) declined.
Tierney and Horton (1998) assessed the relationships between hospice patients’ physical and psychological symptoms, quality of life, and satisfaction with inpatient care using a cohort study of 42 patients admitted to an Australian hospice’s inpatient service. Although there were marked variations in symptoms and quality of life scores, most patients were satisfied with their care. Satisfaction was lower among patients with lower quality of life scores, but there were no correlations with symptoms.

Steele and associates (2002) surveyed both patients and family members in their study to determine patient and caregiver satisfaction with hospice care. Data indicated that the majority of patients and their caregivers were very satisfied with the care they received. The highest rating on their patient survey was for being “treated with respect and courtesy by the staff” (Steele, Mills, Long, & Hagopain, 2002, p. 23). Symptom management had a lower mean than other scores, and patients rated their satisfaction with symptom management lower than their caregivers did. Pain control, emergency responsiveness, and stress and anxiety management also have been identified as factors influencing satisfaction (Welk & Smith, 1999).

More studies have been done measuring family satisfaction with hospice care. A large scale study involving data from 1,839 individuals receiving care from 17 hospice agencies revealed that family members were generally quite satisfied with the care their loved one received prior to death (Miceli & Mylod, 2003). This finding is consistent with Nolen-Hoeksema and associates’ study that found nearly 95 percent of 287 hospice families were satisfied with care received, and Welk and Smith’s findings that 97 percent
of families believed that the patient was “very satisfied” or “satisfied” with hospice care (Nolen-Hoeksema, Larson, & Bishop, 2000; Welk & Smith, 1999).

Situational factors play a key role in family satisfaction. The presence of psychological symptoms such as depression or anxiety, the degree of distress to the patient and family caused by their symptoms, and type and number of experienced symptoms account for discrepancies in satisfaction ratings (Field, Jagger, & Dand, 1995). The timing of hospice referral is critical, because families rated their satisfaction lower when their loved one was referred to hospice too late. Satisfaction scores tended to be highest for nursing care; issues that draw the most criticism had to do with ancillary team members and logistical issues such as scheduling and general availability (Miceli & Mylod, 2003). Baker and colleagues (2000) identified that family satisfaction was greater when the patient was perceived to have been in less pain, when patient and family preferences were followed, and when death occurred in the preferred place.

A 2001 survey by Press Ganey Associates found overall high levels of family satisfaction with hospice care, but also identified areas needing improvement. These areas included paying more attention to ancillary care services, logistical issues involved in care delivery, and the issue of late-timed referrals (as cited in Miceli & Wojciechowski, 2003). This finding is consistent with Miceli and Mylod’s research, thus lending support for the need to understand structural and team influences on care provision (2003).

Many issues exist in hospice satisfaction measurement. Little high quality research on satisfaction with hospice care has been done (Miceli & Mylod, 2003;
Morrison et al., 2000). Dying patients may refrain from honestly criticizing caregivers at this critical time in their lives, and family members often report less satisfaction than patients (Fakhoury, 1998). Family members tend to score symptoms more severely than patients, often over-estimating the severity of pain and dependency levels (Addington-Hall & McPherson, 2001; Hinton, 1996). In contrast, aspects relating to service provision, communication, desired level of knowledge, and care evaluations have shown agreement between patient and proxy responses (Field et al., 1995; Higginson, Priest, & McCarthy, 1994). Thus, there appears to be some validation for use of proxy respondents for some hospice care assessments of care provision, particularly for service evaluation (Addington-Hall & McPherson).

Donabedian (1966) identified patient satisfaction as the ultimate validator of quality of care. Very few hospice organizations use standardized approaches in measuring patient and family satisfaction, even though satisfaction has been identified as an important outcome for hospice care. Patient and family satisfaction surveys, such as those created by Press Ganey and Associates (2005), have been increasingly undertaken as management tools in many health care settings; however, little research has linked patient satisfaction to organizational dimensions (Aiken et al., 1997). There is also limited evidence that patient satisfaction is related to improved patient outcomes (Ervin, 2006). Thus, little is known about the relationships among subjective measures of care processes and patients’ perceptions of care (Terney & Horton, 1998).

There is evidence of general patient and family satisfaction with hospice care, but limited research on organizational and team influences on satisfaction. A lack of
knowledge exists regarding linkages among organizational structure, team processes, and patient outcomes. Knowledge of the elements that contribute to satisfaction enables hospice organizations to better anticipate and address patient and family concerns (Medigovich, Porock, Kristjanson, & Smith, 1999). For purposes of the current research, family satisfaction with hospice care was the terminal patient variable. This was examined in a limited hospice home care teams due to the lack of standardized data collection across hospice organizations.

Summary

General systems theory provides the overarching framework for this study, because the hospice interdisciplinary team operates within many systems. One must understand the influences of these systems in order to create optimal care environments. Donabedian’s model guided the research framework for this study.

There is a paucity of research examining linkages of structure, process, and outcome in interdisciplinary team research (McCallin, 2001; O’Connor et al, 2006; Schofield & Amodeo, 1999). Much of the literature regarding interdisciplinary teams is descriptive and empirically limited; thus, its effect as a centrally operative variable remains largely unknown (Rosen & Callaly, 2005). In addition, there is little knowledge regarding how the interdisciplinary team functions in hospice settings.

Theoretical support for the proposed model was illustrated, using knowledge from multiple health care fields. Because the interdisciplinary team is the primary intervention in hospice care, it is important to understand how best to support the team for optimal
outcomes. That can only be done through understanding how the team functions to influence organizational and patient/family outcomes.
CHAPTER III: METHODOLOGY

This chapter details the methodology of this study, including design, research aims, questions, and hypotheses, and sample criteria and selection. Model variables are described, including instrumentation analysis of reliability and validity. The data collection and analysis are discussed.

Research Design

This research tested a causal model of hospice interdisciplinary team processes and effectiveness. The impacts of organizational and team level structure constructs on team processes and perceived team effectiveness were explored. The influence of perceived team effectiveness on team task satisfaction and subsequent impact on family satisfaction with hospice care was examined using a correlational approach. A correlational approach was used to estimate the magnitude and direction of relationships specified in the proposed model. The relationship between team task satisfaction and family satisfaction with hospice care was examined using limited team samples.

The research study used a non-experimental, descriptive-correlational design. Data were used to examine the relationships among the variables and to determine whether organizational and team constructs were predictive of team processes and team outcomes. Path analysis was used to examine these influences.

Research Aims, Questions and Hypotheses

Research aims were twofold: 1) to test the proposed model with a full sample of teams; and 2) to explore the relationships of structure and process variables to team task satisfaction with the full sample and relationship of perceived team effectiveness to
family satisfaction with hospice care and team task satisfaction to family satisfaction with hospice care in a limited sample.

Research questions included:

1. What is the impact of organizational culture, team complexity, and team leadership on team processes?
   
   H1: Organizational culture, team complexity, and team leadership will have a positive direct effect on team processes.
   
   H2: Organizational culture, team complexity, and team leadership will have an indirect effect on perceived team effectiveness only through team processes.

2. What is the impact of team processes on perceived team effectiveness?
   
   H3: Team processes will have a positive direct effect on perceived team effectiveness.

3. Does perceived team effectiveness influence team task satisfaction?
   
   H4: Perceived team effectiveness will be positively correlated with team task satisfaction.

4. Does perceived team effectiveness influence family satisfaction with hospice care in a limited sample?
   
   H5: Perceived team effectiveness will be positively correlated with family satisfaction with hospice care.

5. Does team task satisfaction influence family satisfaction with hospice care in a limited sample?
H6: Team task satisfaction will be positively correlated with family satisfaction with hospice care.

6. Is there empirical support for the theoretical model?

H7: The majority of proposed linkages will be supported in the anticipated direction.

Setting, Sample, Human Subjects, and Recruitment of Subjects

Setting

Hospice organizations in a southwestern city in the United States were contacted about their interest in participating in the study. This southwestern city is a large urban community with multiple hospice organizations. These hospice organizations varied significantly in size and profit status. Organizations contacted were Medicare Certified and State Licensed.

Sample

Hospice organizational data were obtained from hospice administrators (or designees) and team leaders who agreed to participate. Individual level data were collected from hospice interdisciplinary team members who were members of a dedicated interdisciplinary hospice team and recruited for this study. Interdisciplinary team members included registered nurses, licensed practical nurses, pastoral counselors, medical social workers, certified home health aides, medical directors, volunteer coordinators, and bereavement counselors. As the research focal unit of interest was the hospice interdisciplinary team, individual team data were aggregated to the team level. All individual data utilized remained anonymous. Hospice staff eligibility criteria
included being 18 years of age or older, members of a dedicated interdisciplinary team, and on the interdisciplinary team for three months or greater.

Individual hospice family data were obtained from one hospice site only and from limited hospice home care teams. Data were collected via secondary analysis from organization specific Press Ganey reports and aggregated to the team level. No patient identifiers were present on the Press Ganey reports, thus patient and family anonymity was retained.

A convenience sample of hospice organizations and employees in the southwestern city was used for this study. Sample size was a concern because the research causal model involved multiple variables. In addition, the number of available hospice teams to test the model was small relative to the size and complexity of the research model. Although there are no absolute standards for the relationship between sample size and model complexity, there are established guidelines. Nunnely and Bernstein (1994) recommend 30 subjects per independent variable. Pedhazur (1997) suggests subject to variable ratios of 15:1 or 30:1 when generalization is critical. Marascuilo and Levin (1982) and Tanaka (1987) identify an ad hoc rule of thumb for statistical models placing the number of subjects to the number of independent variables at 10:1. Gorsuch (1983) and Hatcher (1994) recommend a minimum subject to item ratio of at least 5:1, although both note that higher ratios are preferable.

Because this research was an exploratory study to aid in further understanding of hospice interdisciplinary team processes, a subject to independent variable ratio of 5:1 was used. Based on these considerations and the availability of hospice interdisciplinary
teams, a minimum sample size of 45 teams was assumed to be adequate to test the model. Variable reduction was employed for variables lacking significant correlations with the key variables of team processes and effectiveness, thus decreasing the number of teams required to test the model.

**Human Subjects and Recruitment of Subjects**

Approval from the University of Arizona’s Human Subjects Protection Program was sought. Following approval, hospice administrators and/or hospice leaders were contacted to explain the study and seek permission for study participation and data collection. Site-specific subjects review was sought from one participating site. Site approvals were granted and submitted to the University of Arizona’s Human Subjects Protection Program. Meetings were held with site leaders and key staff to explain the study. Organizational data and number of eligible staff were obtained for two groups: team leaders and direct care staff.

Subsequent meetings were held with eligible team leaders and interdisciplinary team members. These meetings took place in conjunction with regularly scheduled team meetings. Interdisciplinary team members were encouraged to participate through hospice managers and/or team leaders. No coercion to participate was noted. Study explanation was given, informed consent obtained, and study packets distributed. Study packets included informed consent instructions, study description and purpose, instrument directions, and contact information for the researcher. The packet included two copies of the informed consent (one for the researcher and one for the participant), a demographic profile, and the data collection instruments.
Variable Definitions

Research variables included in the model were defined as follows:

1. Organizational Culture: The beliefs, values, and norms of the organization relative to the way work is performed (Shortell et al., 2000)

2. Team Complexity: Composite variable representing team variability and experience. Composite variable created from:
   a. Average team census
   b. Average RN caseload
   c. Average years of team hospice experience

3. Team Leadership: Self-defined team leader behaviors and practices that influence team members to accomplish goals

4. Team Processes: The activities and interactions that take place within a team and its leadership to achieve outcomes. Processes include:
   Communication, coordination, conflict management, and leadership
   a. Communication: Process of sending and receiving information; transfer of understanding from one person to another (Grohar-Murray & DiCroce, 1997)
   b. Coordination: Process of integrating or linking together different people and activities so that they function harmoniously in attainment of organizational objectives (Grohar-Murray & DiCroce, 1997)
c. Conflict Management: Techniques and strategies employed to manage differing opinions and points of view

d. Leadership: Staff perception of degree to which team leaders develop, communicate, and support the team

5. Perceived Team Effectiveness: Perception of team function and achievement

6. Team Task Satisfaction: The group’s shared attitude toward its task and the associated work environment (Mason & Griffin, 2003)

7. Family Satisfaction with Hospice Care: The family rating of important process and outcome attributes of the hospice experience

Instrumentation

Several instruments were used for the data collection process. Instruments were selected using criteria that included a detailed assessment of purpose or objectives, conceptual basis consistent with current research, measurement properties, and pragmatic issues (Strickland, 1991). All instruments used in this study had not been previously used in a hospice setting. The instruments are described within the conceptual domain for which they were used. Additional detail regarding data collection and instrument use is provided (Table 1).
TABLE 1. Variables and Instruments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Instrument</th>
<th>Data Type</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational Culture</strong></td>
<td>Hospital Organization Culture (Quinn &amp; Kimberly, 1984)</td>
<td>Self-report</td>
<td>Individual team leaders</td>
</tr>
<tr>
<td><strong>Team Complexity</strong></td>
<td>Composite variable representing average team census, average RN caseload, and average years of team hospice experience</td>
<td>Team Data + Self-report Team Level</td>
<td>Averaged team level data + individual team members (aggregated mean scores)</td>
</tr>
<tr>
<td><strong>Team Processes</strong></td>
<td>Interdisciplinary Team Process and Performance in Long-Term Care (Temkin-Greener et al., 2004)</td>
<td>Self-report Team level</td>
<td>Individual team members (aggregated mean scores)</td>
</tr>
<tr>
<td><strong>Perceived Team Effectiveness</strong></td>
<td>Interdisciplinary Team Process and Performance in Long-Term Care (Temkin-Greener et al., 2004)</td>
<td>Self-report Team level</td>
<td>Individual team members (aggregated mean scores)</td>
</tr>
<tr>
<td><strong>Team Task Satisfaction</strong></td>
<td>Group Task Satisfaction Scale (Mason &amp; Griffin, 2005)</td>
<td>Self-report Team level</td>
<td>Individual team members (aggregated mean scores)</td>
</tr>
<tr>
<td><strong>Family Satisfaction with Hospice Care</strong></td>
<td>Press Ganey Hospice Services Report</td>
<td>Secondary data via family report Team level</td>
<td>Individual (aggregated)</td>
</tr>
</tbody>
</table>
Organizational Culture

The dominant organizational culture present in hospice organizations was measured by the Hospital Culture survey (Quinn & Kimberly, 1984). The referent “hospital” was changed to “hospice” in the instrument title and all items. Quinn and Kimberly state that the instrument can and has been adapted to other types of health care and non-health care organizations because the items are generally applicable to all organizations.

This 20-item survey assesses an employee’s perspective of organizational culture regarding beliefs, values, and behaviors relative to how work is performed (Quinn & Kimberly, 1984). The measure asks the respondent to rate the level of each of the following five attributes, organization character, organization’s managers, organization cohesion, organization emphases, and organization rewards, on a 100 point scale (a total of four items per subscale, 20 items for full scale). Each descriptor represents one of four competing organizational cultures: group culture (affiliation, teamwork, coordination, and participation), developmental culture (risk-taking, innovation, and change), rational culture (efficiency and achievement), and hierarchical culture (rules, regulations, and reporting relationships) (Shortell et al., 2000). Points are then tallied to evaluate the operant (dominant) organizational culture present in the organization.

Shortell and colleagues (1995) used this instrument to examine the relationships among organizational culture and employees working in high quality improvement process areas (61 hospitals with up to 200 hospital employees). Reliability for the group culture scale was 0.79, developmental scale was .77, rational scale was low at .47, and
the hierarchical scale was .70. The group and development scales combined score was predictive of quality improvement implementation providing evidence for convergent construct validity. These scales emphasize teamwork, support, development of everyone’s potential, and a willingness to undertake some degree of risk. Thus, supportive (combined group and developmental) organizational cultures were predictive of quality improvement activities (Shortell et al).

In a subsequent study by Shortell and associates (2000), the organizational culture instrument was again utilized to assess the impact of total quality management and organizational culture on a set of patient outcomes following coronary bypass graft surgery (CABG). A supportive group culture (combined measure of group and developmental cultures) was associated with shorter postoperative intubation times and higher patient physical and mental functional health six months after CABG. The combined supportive culture measure exhibited a Cronbach’s alpha internal reliability of .79. Validity of aggregated scores was assessed with analysis of variance. The between group differences were significantly greater than the within group differences ($F = 8.79, p < .0001$), providing support for aggregation of responses to the group level.

Group culture was predicted to be the dominant hospice organizational culture, because group culture emphasizes teamwork and coordination. It was anticipated that the hospice environment would embrace those cultural values.
Team Complexity

The variable team complexity was a composite variable originally composed of average team census, average RN caseload, and average years of team hospice experience. This variable was designed to assess differences in team variability and experience, and it was hypothesized that team size, caseload, and experience (team structural elements) would impact team functioning.

Registered nurse caseload was selected as a proxy measure for average work performed by individual team staff. Caseload requirements are different for each discipline, thus averaging caseloads among all disciplines would not be a reliable indicator of workload. Registered nurses are typically designated as “case managers” and present in every hospice team; thus, it made logical sense to use RN caseload as a proxy measure for average work performed by individual staff members.

The team complexity composite variable was formed based on factor analysis supporting a one factor solution and exhibiting significant explained variance. Factor analysis assured that the selected variables fit under one factor with sufficient loadings. Factor scores were multiplied by the actual team scores, with the results added for the final team complexity score.

Team Leadership

Team leadership was measured with the Leadership Practices Inventory (LPI), an instrument that provides information about an individual’s leadership behavior (Posner & Kouzes, 1988). Two parallel forms of the LPI have been developed: one for self-evaluation and one for an evaluation of another person. The LPI-Self form was used in
this study. Both forms are identical in content, with the referents changed to reflect the subject of interest (Tourangeau & McGilton, 2004).

The Leadership Practices Inventory (LPI) was originally developed as a 30-item instrument with six statements reflecting each of five leadership practices: challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and encouraging the heart. A 10-point Likert scale is used with one indicating “almost never” and ten indicating “almost always” (Posner & Kouzes, 1993).

Cronbach’s alpha ranged between 0.81 and 0.91. Test-retest reliabilities are reported to be at 0.93 and above (Posner & Kouzes, 1993). The regression model for the five scales was highly significant ($F = 318.9; p < .0001$) and explained 76% of variance in reported leadership effectiveness (Kouzes & Poser, 2000). The LPI has been used to measure leadership behaviors across a variety of organizations, disciplines, and demographics; however, it has limited use in healthcare (Tourangeau & McGilton, 2004).

Tourangeau and McGilton (2004) investigated the psychometric properties of the LPI when exploring the leadership practices of nurses. Factor analysis identified a three factor solution that exhibited psychometric properties at least as strong as those in the original five factor solution. The LPI was reduced to 27 items, measuring three leadership domains. The new domains were labeled cognitive practices, behavioral practices, and supportive practices. Internal reliability for the new subscales ranged from 0.93 to 0.94. The cognitive practices subscale (10 items) had a mean of 75.3 (range 10-100, $SD = 11.1$), the behavioral practices subscale (11 items) had a mean of 90.4 (range 11-110, $SD = 6.7$), and the supportive practices subscale (6 items) had a mean of 45.2 (range 6-60,
Construct validity supported the newly derived subscales with statistically significant relations between the revised LPI and a similar instrument (Maslach Burnout Inventory) and known groups. Therefore, the revised version of the LPI was utilized for this research due to its strong psychometrics, lighter response burden, and variable conservation for the research model.

**Team Processes**

An adaptation of the Interdisciplinary Team Process and Performance in Long-Term Care survey was used to measure team processes (leadership, communication, coordination, and management) (Temkin-Greener et al., 2004). The Interdisciplinary Team Process and Performance in Long-Term Care instrument was originally adapted from Shortell and Rousseau’s (1989) hospital instrument measuring nurse-physician communication. Temkin-Greener and associates adapted this instrument to validate, investigate properties of, and apply the tool to measure interdisciplinary team processes and perceived effectiveness in a long-term care setting. A total sample of 1220 surveys was completed by team members of 26 Program of All-Inclusive Care of the Elderly (PACE) settings. This tool was selected for this study because PACE settings are very similar to hospice environments in that the interdisciplinary team is used to manage care and similar team processes are employed.

Eight domains of team performance are measured with the full instrument: leadership (9 items), team cohesion (7 items), communication (10 items), coordination (6 items), conflict management (10 items), team effectiveness (7 items), workplace conditions (5 items), and workplace resources (5 items). Cronbach’s alphas ranged from
.76-.89 for all domains of team process and effectiveness, with professional team members reporting higher alphas than paraprofessionals. Team process variables explained 55% of variance in team cohesion and 52% of variance in team effectiveness. Construct validity was demonstrated through regression analysis, indicating that leadership, communication, coordination, and conflict management were positive and significant ($p \leq 0.001$) predictors of team cohesion and effectiveness. The data also supported the appropriateness of aggregating individual responses to the group level (Temkin-Greener et al.).

Four subscales of the survey were used to measure the variables of team process for this study: leadership, communication, coordination, and conflict management. A 5-point Likert scale, with one indicating “strongly disagree” and five indicating “strongly agree” were used for subscales. Positive and negative phrasing in items was present. The leadership subscale assessed the degree to which team leaders are perceived to develop, communicate, and support the team. Cronbach’s alpha for professionals was .86 for this scale ($M=3.79$, $SD=.77$). The communication scale assessed the degree to which team members communicate. Cronbach’s alpha for professionals was .85 for this scale ($M=3.6$, $SD=.69$). The coordination scale identified the degree to which work activities within a team are coordinated. Cronbach’s alpha for professionals was .78 for this scale ($M=3.87$, $SD=.75$). The conflict management scale assessed the degree to which the team handles conflicts. Cronbach’s alpha for professionals was .79 for this scale ($M=3.55$, $SD=.66$). Each of the team processes was examined separately as part of the causal model.
Perceived Team Effectiveness

Perceived effectiveness of team performance was measured by the Perceived Team Effectiveness domain of the Interdisciplinary Team Process and Performance in Long-Term Care survey (Temkin-Greener et al., 2004). This subscale measured the perceived effectiveness of the team with respect to the technical quality of patient care and the ability of the team to meet the patient and family care needs and outcomes. The scale includes seven items, measured on a 5-point Likert scale with one indicating “strongly disagree” and five indicating “strongly agree”. Cronbach’s alpha was .91 for professionals and .87 for paraprofessionals ($M=4.19$, $SD=.69$). Team effectiveness was hypothesized as an intermediate outcome of team processes.

Team Task Satisfaction

A team measure of task satisfaction was used because the phenomenon of interest for this research was the interdisciplinary team. Group task satisfaction was defined as the group’s shared attitude toward its task and the associated work environment (Mason & Griffin, 2003). Group task satisfaction is the group-level counterpart to employee job satisfaction. Mason and Griffin (2002) identified that group level satisfaction was functionally independent of individual job satisfaction and instead is a product of shared working conditions, team social influences that occur within the team, and team emotions.

The original Group Task Satisfaction Scale was a 24 item scale measuring aspects of a group’s satisfaction with the task itself, the internal work environment, the group’s satisfaction with facets external to the group, and the wider organizational environment.
Subjects were asked to indicate a level of agreement on a 7-point Likert scale ranging from one (strongly disagree) to seven (strongly agree), with roughly equal numbers of positively and negatively worded items. The referent of the items was the group, as this was a group measure of satisfaction. One hundred fifty-seven students (representing 46 groups) from third-year psychology courses completed the questionnaire in a study assessing group task satisfaction (Mason & Griffin, 2003). Internal reliability was .83, and intraclass correlations (ICCs) ranged from .04 to .55. Fifty-five percent of the total variance in group task satisfaction was between-group variance, which was significant. Mean $r_{WG(i,j)}$ values ranged from .67 to .95, with the measure of group task satisfaction exhibiting the highest agreement at .95. The mean for group task satisfaction was 4.82 ($SD = .68$). Factor analysis revealed four factors, three of which were consistent with construct conceptualization: satisfaction with the internal work environment, satisfaction with the task itself, and satisfaction with the external work environment. One factor did not have loadings greater than .4 and was uninterpretable (Mason & Griffin, 2003).

In a subsequent study, Mason and Griffin (2005) used the Group Task Satisfaction tool and collected data from 66 work groups and 51 supervisors in a study investigating whether group task satisfaction would explain incremental variance in organizational citizenship behaviors, group performance, and absenteeism norms over variance explained by individual job satisfaction. Based upon the previous factor analysis (Mason & Griffin, 2003), three subscales were created with a total of ten items. Cronbach’s alpha for internal environmental satisfaction was .81, the alpha for task itself was .87, and the alpha for the external environment was .61. Mean $r_{WG(i,j)}$s ranged from .83
to .92. A three factor model was identified by confirmatory factor analysis with a good fit to data (GFI = .95, CFI = .97, NNFI = .95). Group task satisfaction explained more variance in group-rated absenteeism norms and in supervisor-rated civic helping behavior than aggregated individual norms (Mason & Griffin, 2005).

Team task satisfaction was considered a final team outcome of team processes in the proposed theoretical model. The total satisfaction score from the modified 10 item scale was used to assess Team Task Satisfaction.

*Family Satisfaction with Hospice Care*

An exploratory analysis of the relationship of perceived team effectiveness and team task satisfaction to family satisfaction with hospice care was assessed in a limited sample. There was an identified lack of standardized methods in obtaining family satisfaction data, because hospice organizations collect patient/family satisfaction data differently. Secondary data derived from standardized Press Ganey Hospice Services Surveys were used from one hospice organization for their home hospice teams only. Question number five in the Overall Assessment section of the survey was used as an indicator of family satisfaction with hospice care. This question, “overall quality of care provided by Hospice services”, was answered using a 5-point Likert scale, with one being very poor and five being very good. The family acted as a proxy for the patient, because organizational satisfaction surveys are administered after patients’ deaths. Individual family scores were aggregated to the team level to assess the influence of team task satisfaction on family satisfaction with hospice care. Family satisfaction with hospice
care was considered a terminal patient outcome that was influenced by perceived team
effectiveness and team task satisfaction.

Additional Descriptive Data

Demographic surveys were completed by organizational leaders, team leaders,
and hospice interdisciplinary team members. Organizational descriptive data obtained
included profit status, average patient daily census, number of team leaders, and number
of direct care staff. Team descriptive data collected included employee discipline, years
of hospice experience, years of education, age, gender, ethnicity, caseload, and work
setting. Team data was calculated from aggregated individual data. Descriptive data
collected included employee discipline, gender, years of education, years of hospice
experience, and years of management experience. Demographic data were used for
descriptive purposes only and were not represented in the theoretical model.

Data Collection

Organizational Data Collection

Organizational descriptive data were obtained from the hospice
administrators/directors, considered organizational experts, who agreed to complete the
data collection instruments. Data collection was completed through self-completion or
verbal response answers to a standardized survey. Organizational culture data were
obtained through hospice team leaders who completed the survey. Survey response rate
was calculated as to the number of surveys returned compared to the total number of
eligible staff.
**Team and Individual Data Collection**

All team data were obtained through self-completion of surveys by eligible individual staff. Eligible staff included dedicated team members of a hospice interdisciplinary team who had been on the identified team more than three months. The researcher explained the research purpose and proposal at routine interdisciplinary meetings with the eligible staff in attendance. The research purpose and informed consent were explained, and study packets (including surveys) were distributed for completion. Each survey was identified with a designated hospice organization and team number, but no other direct employee identifier was present to tie the employee to the survey response. Staff were asked to place the completed surveys in a collection envelope provided by the researcher. Snacks were provided to all teams for their time and willingness to help with research. The food was intended as a small token of appreciation and partial reimbursement for the participant’s time and willingness to participate. It was not expected to create pressure or undo influence.

**Family Satisfaction with Hospice Care Data Collection**

Family satisfaction with hospice care scores were obtained via Press Ganey hospice service reports from one hospice organization. Family satisfaction scores were sorted and aggregated by team. Patient identifying information was not present in the reports, thus anonymity was protected.

**Data Analysis**

The following section discusses data analysis, including analysis at both the individual and group level. Criteria for aggregation are detailed. Statistical analysis for
this study was computed using the statistical package SPSS Graduate Pack 14.0. Alpha was preset at $\leq 0.05$. All data were entered directly into SPSS by the researcher from the collected questionnaires.

**Individual Level Analysis**

All data were examined for data entry errors and corrected if necessary. Data were examined for missing value patterns. Missing data were handled with listwise deletion.

Descriptive statistics were used to examine organizational, team, and individual level variable data. Data were analyzed using descriptive statistics through the use of means, standard deviations, and minimum/maximum/range of all variables. Data were examined for skew, gaps in distribution of data, and outliers. Frequencies were also checked for missing values.

All measures were assessed for reliability and construct validity at the individual level. Internal consistency reliability was assessed using Cronbach’s alpha of .70 or above as many scales had limited use and were not yet established (Nunnally & Bernstein, 1994). Validity was assessed using factor analysis, with sufficient loadings as predicted.

**Group Level Analysis**

Group level analysis was appropriate because the research constructs of interest were group level variables. Individual level team data were aggregated to the team level after meeting criteria for aggregation. All instruments and scales were examined for content validity in order to reflect team as the level of interest (Verran, Mark, & Lamb, 1992). One hundred percent of survey items had a group level of referent. In addition,
only interdisciplinary teams that had individual response rates of $\geq 50\%$ of total team staff were included for analysis. Individual response rates of $\geq 50\%$ of total team staff are considered to be representative of the group response (Verran, Gerber, & Milton, 1995).

Multiple criteria were used to assess the reliability and validity of group level measures as valid measures of the team. An analysis of variance (ANOVA) was used, with the measure as the dependent variable and the team as the between group factor. A statistically significant (set at $p \leq .05$) between group difference was expected (Shortell et al., 1994). An Intraclass Correlation Coefficient (ICC) was calculated using the formula: ICC = (BMS-WMS)/BMS. The ICC is an estimate of how different the within group variability is from the between group variance. An ICC of at least .60 is recommended (Verran, Gerber, & Milton, 1995). Aggregated reliability was assessed by examining aggregated interitem correlations. Sixty percent of interitem correlations with $r$ greater than .40 is recommended.

Construct validity was assessed using the measure of agreement ($r_{wg}$) (Klein & Kozlowski, 2000). An average $r_{wg}$ value of .70 or greater is a criterion for justifying aggregation to the group level (George, 1990). It was estimated that aggregated sample size would be too small for factor analysis accuracy to further establish evidence of validity.

Statistical Analysis

Item analysis was performed to examine the fit of the individual items with other items and the total scale (Feretich, 1991). Inferential statistics, including Pearson’ Product-Moment correlation and analysis of variance (ANOVA), were used to examine
associations among the variables. Evidence of multicollinearity was assessed using correlations of the independent variables (Martinelli, 1999; Wade, 2004). Gorden’s criteria of $r$ less than .65 for correlation of variables entered into the same equation was used (1968). In order to examine relationships defined by the proposed model, data reduction procedures were undertaken to reduce the number of variables before entering them into regression processes. Variables with low correlations to key team process and effectiveness variables were eliminated prior to path analysis.

Path analysis using a stepwise multiple regression technique was used to test the proposed causal model. Path analysis is a multivariate method that uses regression analysis to test predictive and nonpredictive relationships among the observed model variables and answers questions regarding the relationships between a set of independent variables and a dependent variable (Munro, 2001; Pedhazur, 1997). Path analysis was used to test the direct, indirect, and total effects of the causal variables (Wade, 2004). Linear regression was employed to test each path in the model. Regression analyses with the enter method were performed in order to determine path coefficients for each direct and indirect relationship between the variables, with $\alpha = .05$ and $p < .10$ for statistical significance (Pedhazur, 1997). The significance level was set at .10 because the sample size was small. Evaluation of the significance of contribution resulted in adjusted $R^2$ values. Adjusted $R^2$ values equalize the influence of number of cases and are preferred for small sample sizes (Statistics Solutions, n.d.).

In addition to testing the proposed causal model, the relationship of perceived team effectiveness and team task satisfaction was assessed through the correlation matrix.
The relationship of perceived team effectiveness/family satisfaction with hospice care and team task satisfaction/family satisfaction with hospice care were also examined in a limited hospice sample using the correlation matrix.

In summary, this research tested a causal model of interdisciplinary team processes and effectiveness using a non-experimental, descriptive-correlational design. Data were used to examine the relationships among the variables to determine whether organizational and team constructs were predictive of team processes and team outcomes. This chapter detailed the methodology of this study, including descriptions of model variables and instrumentation analysis of reliability and validity.
CHAPTER IV: RESULTS OF DATA ANALYSIS

The purpose of this chapter is to share data analysis results for this study. This section discusses the findings of the identified research questions including the statistical analysis. Nonsignificant findings and additional inferences will also be examined.

Sample Description

A total of two southwestern city hospice agencies agreed to participate in this study, one small organization and one larger organization. Hospice Organization A consisted of three teams and two team leaders, with an average daily patient census of 220. Hospice Organization B consisted of 40 teams and 34 team leaders, with an average daily census of 2220. Both organizations had team leaders who led multiple teams; therefore, the number of team leaders was less than number of teams.

Organizational leaders completed the organizational demographic survey (Appendix C), and team leaders completed the team leader demographic survey (Appendix D), Hospice Organizational Culture survey (Appendix E), and Leadership Practices Inventory (Appendix F). Hospice interdisciplinary team members completed a demographic survey (Appendix G), Interdisciplinary Team Survey (Appendix H), and the Group Task Satisfaction Survey (Appendix I). A selected question from a standardized hospice Press Ganey survey was utilized to measure family satisfaction with hospice services for a limited sample of teams. Survey completion and data collection occurred during regularly scheduled team meetings with a convenience sample of interdisciplinary team members and related team leaders.
Instrument and Variable Data Analysis

Reliability and validity were assessed prior to subsequent statistical analysis. The following sections provide evidence for instrument and variable use in this study.

Interdisciplinary Team Data Analysis

A total of 410 interdisciplinary team members completed the surveys. A variety of interdisciplinary team members responded, with nine discipline categories represented (Table 2). Registered nurses comprised the largest responding discipline, represented at 46.80 percent. Eight-eight percent of respondents were women, and 84.90 of respondents were White, non-Hispanic. The average interdisciplinary team member age was 47 ($SD = 11.47$), with average length of hospice experience of 4.5 years ($SD = 54.54$). Length of time working in the surveyed specific hospice organization was slightly decreased ($M = 3.4$ years, $SD = 59.74$). Educational level was varied, which is expected for an interdisciplinary group, although approximately one third of the respondents held an advanced degree. The home setting was the primary location of work.

A total of 41 teams out of the potential 43 teams were appropriate for data analysis because two teams did not have at least a 50% return of individual surveys. Interdisciplinary team size ranged from 5 to 25 interdisciplinary members.
### TABLE 2. *Interdisciplinary Team Demographics (N = 410)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discipline</strong></td>
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<td></td>
</tr>
<tr>
<td>RN</td>
<td>191</td>
<td>46.8</td>
</tr>
<tr>
<td>LPN</td>
<td>37</td>
<td>9.1</td>
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<tr>
<td>Social Worker</td>
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<td>Medical Director</td>
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<td>2.9</td>
</tr>
<tr>
<td>CNA</td>
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<td>11</td>
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<td>Pastoral Counselor</td>
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<td>Volunteer Coordinator</td>
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<td>Bereavement Staff</td>
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<td>1</td>
</tr>
<tr>
<td>Other</td>
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<td>.5</td>
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<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
<td>359</td>
<td>88</td>
</tr>
<tr>
<td>Male</td>
<td>49</td>
<td>12</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
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<tr>
<td>White, non-Hispanic</td>
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<td>84.9</td>
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<td>Hispanic</td>
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<td>Black/African American</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Educational Level</strong></td>
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<td>Advanced Degree</td>
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<td>32</td>
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<td><strong>Primary Hospice Setting</strong></td>
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<td>Home</td>
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<tr>
<td>Inpatient</td>
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<tr>
<td>Group Home/ALF</td>
<td>87</td>
<td>21.3</td>
</tr>
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</table>
Interdisciplinary team processes. The Interdisciplinary Team Survey was used to measure the selected team process variables (leadership, communication, coordination, and conflict management) and team effectiveness. The Interdisciplinary Team Survey consisted of 42 questions, with a Likert scale response range from 1 to 5 points (1 = strongly disagree, 5 = strongly agree). Cronbach’s alpha for the total scale was .90, with 330 total respondents (19.50 percent missing data). Greater than 80 percent of item-total correlations were greater than .30, thus criteria met for item inclusion. No items, if deleted, would improve Cronbach’s alpha, therefore all scale items retained for the total scale.

The leadership subscale of the Interdisciplinary Team Survey contained nine items, with reverse coding present on items 3, 5, 7, and 9. Three hundred eighty-four team members completed the survey (6.30 percent missing data). Cronbach’s alpha was .78. Reversed items 3, 5 and 7 had low inter-item correlations, however item-total correlations were all greater than .36. No item, if deleted, would improve Cronbach’s alpha, thus all items retained in the subscale. Using principal component factor analysis, percent of explained variance was 37.45, which is slightly below optimal level. However, all items loaded well on one factor (.51-.76). Thus, the survey was deemed to be reliable, and there was support for its validity.

The communication subscale of the Interdisciplinary Team Survey contained 10 items, with items 14, 18, 21, and 26 reverse coded. A total of 394 team members completed the survey (missing data at 3.90 percent). Cronbach’s alpha was .78. Items 15 and 26 were the only problematic items, with correlations significantly lower (range from
-.02 to .31). However, Cronbach’s alpha only increased slightly by retaining the items. Eighty percent of item-total correlations were greater than .30. All items were retained in this scale. Factor analysis revealed that 38.83 percent of variance was explained by one factor. Factor loadings were acceptable, with a range of .30 to .79. The survey was reliable and had support for validity for the current study.

The coordination subscale of the Interdisciplinary Team Survey contained six items, with two items reverse coded. Total cases were 399 (2.70 percent missing data). Cronbach’s alpha was .71. One hundred percent of item-total correlations were greater than .37, and no item if deleted would increase Cronbach’s alpha. All items were retained. Forty-two percent of variance was explained using factor analysis, with all items loading well between .56 and .75.

The conflict management subscale of the Interdisciplinary Team Survey contained 10 items, three that were reverse coded. There were a total of 370 responses, with 9.80 percent missing data. Cronbach’s alpha was .55, as question 35 (“often, when team members disagree, they will ignore the problem, pretending it will ‘go away’”) did not correlate well with any other items. After item 35 deletion, Cronbach’s alpha increased to .71. Inter-item correlations are low for almost every item; however 62 percent of item-total correlations exceeded .30. Only 31.78 percent of variance was explained through factor analysis, however all items loaded strongly on the factor (.37 - .70).

The team effectiveness subscale of the Interdisciplinary Team Survey contained seven items, with a Cronbach’s alpha of .88. Three hundred ninety-nine members
responded, with a missing data percentage at 2.70. All inter-item correlations and item-total correlations greater than .30. All scale items were retained, because no item, if deleted, would increase Cronbach’s alpha. Almost 60 percent of variance was explained using factor analysis, and all items loaded strongly on one factor (.67 - .84). The survey was reliable and showed support for validity for the current study.

Team task satisfaction. The Group Task Satisfaction instrument was used to measure the team task satisfaction variable. The Group Task Satisfaction survey consisted of 10 items on a 1 to 7 point Likert scale (1 = strongly disagree; 7 = strongly agree). The survey asked respondents to select a number that accurately described your team and its work. Items 3, 4, 5, and 8 are reverse coded. Cronbach’s alpha was .84, with 383 valid cases (6.60 percent missing data). All inter-item correlations and item-total correlations met criteria, and no item if deleted would increase the alpha level. All items retained. Factor analysis revealed that 45.17 percent of variance was explained, and all items loaded strongly on one factor (range .461 - .786). The survey was reliable and had support for validity for use in this study.

Team Leader Data Analysis

A total of 36 team leaders completed the surveys, however, four team leaders managed multiple teams. Descriptive statistics, as well as statistical analysis of reliability and validity, were completed using an unduplicated N of 32. Teams managed by duplicated team leaders were removed from team leader data analysis due to small sample size and possible skewing of results.
Approximately 81 percent of team leaders were nurses, and approximately 90 percent were female. Many team leaders were highly educated, with 37% possessing an advanced degree. Team leaders had an average of 8.23 years of hospice experience ($SD = 75.97$), and 2.7 years of team leader experience ($SD = 25.98$). The average age was 51 years old ($SD = 8.44$).

**TABLE 3. Team Leader Demographics ($N = 32$)**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discipline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN</td>
<td>26</td>
<td>81.3</td>
</tr>
<tr>
<td>Social Worker</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>29</td>
<td>90.6</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Educational Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>10</td>
<td>31.3</td>
</tr>
<tr>
<td>Baccalaureate (non-nursing)</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Baccalaureate (nursing)</td>
<td>7</td>
<td>21.9</td>
</tr>
<tr>
<td>Advanced Degree</td>
<td>12</td>
<td>37.5</td>
</tr>
</tbody>
</table>

*Organizational culture.* The variable organizational culture was measured using the Hospice Organizational Culture survey. Thirty-one team leaders completed the survey, thus there were 3.10 percent missing data. The Hospice Organizational Culture survey contained 20 questions, five questions per subscale for a total of four subscales. The subscales included group culture, developmental culture, hierarchical culture, and
rational culture. Respondents were asked to distribute 100 points among four descriptions depending upon how similar the description was to their organization.

The group culture subscale (Cronbach’s alpha = .43), the developmental culture subscale (Cronbach’s alpha = -.09), and the hierarchical culture subscale (Cronbach’s alpha = .17) were not found to be reliable. No items in any of the subscales were found to increase the alpha significantly if deleted.

Factor analysis was also suspect with these identified subscales. Items were forced to load on one item to assess if the items belonged together and measuring the same concept. Items loaded on one factor for the group culture subscale, however two loadings were negative. Approximately 41 percent of variance was explained. When developmental culture items were forced to load on one factor, there was one strongly negative item loading (-.55) and two strong positive loadings (.79, .86). Approximately thirty-seven percent of variance was explained. Factor analysis revealed a 31 percent variance explanation for the hierarchical subscale; however, two negative loadings were present. Thus, validity for these scales was not found to be supported. The hospice organizational culture variables for group culture, developmental culture, and hierarchical culture were eliminated from further analysis.

The rational culture subscale, which emphasized efficiency and achievement, exhibited a Cronbach’s alpha of .66. Items 12, 16, and 20 inter-item correlations met criteria, and 80 percent of item-total correlations was greater than .30. No significant increase in Cronbach’s alpha was noted if any item were deleted. Thus, rational culture was the only subscale found to be reliable. Factor analysis revealed a 45.48 percent
explained variance, with all loading strongly positive (range from .50 - .85). Thus, validity for this subscale was supported.

*Team leadership.* The variable team leadership was measured using the Leadership Practices Inventory. The Leadership Practices Inventory (LPI) was completed by 31 team leaders (3.10 % missing data). The LPI consists of 27 questions pertaining to three subscales: *cognitive, behavioral, and supportive.* Subjects were asked to respond to each question as to how frequently they engaged in the behavior using a 10 point Likert scale, with 1 being “almost never” and 10 being “almost always”.

The *cognitive subscale* of the LPI consisted of 10 items. The LPI cognitive subscale was reliable, as evidenced by a Cronbach’s alpha of .92. Inter-item correlations met the criteria because most correlations were between .30 and .70. One hundred percent of item-total correlations were between .30 and .80. The only potentially problematic question was number 27 (“makes it a point to let people know about his or her confidence in their abilities”), which had a mean of 9.0 (SD = .98). Thus, a possible ceiling effect for this question may be present with little variation present in team leader responses. This question also correlated only slightly with LPI question 1 \((r = .13)\) and with LPI question 20 at \((r = .18)\); thus, the question may be measuring something different. However, Cronbach’s alpha was not substantially increased without the question, so the item was retained. Factor analysis was completed using principle component analysis. One component was extracted for the cognitive subscale, with strong loadings greater than .57. This one factor solution accounted for 60.83 percent of variance.
Eleven items were present on the LPI *behavioral subscale*. All 32 team leaders responded, thus no missing data were present. Cronbach’s alpha was .82, thus the subscale was deemed to be reliable. Item means were high, as only LPI items 8, 9, 17, 23, and 26 were below nine. LPI items 3, 9, 13, and 14 were problematic, because inter-item correlations were low and did not meet criteria. However, item-total correlations were strong and met criteria. Only items 9 and 13 would increase Cronbach’s alpha if deleted, but there were marginal gains. All items were retained for this scale. Factor analysis was completed, and one component was extracted. Items loaded strongly on the component, with item 13 loading at .30, and the rest loading greater than .46% of variance

The *supportive subscale* of the LPI contained six items, and no missing data were present. Cronbach’s alpha for this scale was .80. LPI item 24 was the only problematic question, because it did not relate well to other subscale questions (correlation range from .16 to .28 for four out of five items). One hundred percent of item-total correlations were above .30, and Cronbach’s alpha was only slightly increased without the item. Item 24 was retained in scale. Factor analysis for the LPI supportive subscale identified one component with strong loadings greater than .50. Explained percent of variance was 54.60. The LPI was found to be a reliable instrument with support for validity for this study. A summary of individual analyses are presented in Table 4.
TABLE 4. Individual Analysis Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>α</th>
<th>Loadings (Forced to one factor)</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational Culture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Group</td>
<td>.43</td>
<td>.86, -.19, .90, .67, -.18</td>
<td>41.37</td>
</tr>
<tr>
<td>2) Developmental</td>
<td>-.09</td>
<td>.37, .79, -.55, .27, .86</td>
<td>37.37</td>
</tr>
<tr>
<td>3) Hierarchical</td>
<td>.17</td>
<td>.95, .31, -.30, .65, -.23</td>
<td>31.05</td>
</tr>
<tr>
<td>4) Rational</td>
<td>.66</td>
<td>.50, .57, .85, .75, .65</td>
<td>45.48</td>
</tr>
<tr>
<td><strong>Team Complexity</strong></td>
<td></td>
<td></td>
<td>73.39</td>
</tr>
<tr>
<td>Ave. Team Census</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN Caseload</td>
<td>.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Team Members</td>
<td>.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Team Leadership</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Cognitive</td>
<td>.92</td>
<td>Loadings ≥ .57</td>
<td>60.83</td>
</tr>
<tr>
<td>2) Behavioral</td>
<td>.82</td>
<td>Loadings ≥ .46</td>
<td>39.05</td>
</tr>
<tr>
<td>3) Supportive</td>
<td>.80</td>
<td>Loadings ≥ .50</td>
<td>54.60</td>
</tr>
<tr>
<td><strong>Interdisciplinary Team Processes</strong></td>
<td>.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Leadership</td>
<td>.78</td>
<td>Loadings ≥ .51</td>
<td>37.45</td>
</tr>
<tr>
<td>2) Communication</td>
<td>.78</td>
<td>Loadings ≥ .30</td>
<td>38.83</td>
</tr>
<tr>
<td>3) Coordination</td>
<td>.71</td>
<td>Loadings ≥ .56</td>
<td>42.05</td>
</tr>
<tr>
<td>4) Conflict Management</td>
<td>.71</td>
<td>Loadings ≥ .37</td>
<td>31.78</td>
</tr>
<tr>
<td><strong>Team Effectiveness</strong></td>
<td>.88</td>
<td>Loadings ≥ .67</td>
<td>59.89</td>
</tr>
<tr>
<td><strong>Team Task Satisfaction</strong></td>
<td>.84</td>
<td>Loadings ≥ .46</td>
<td>45.17</td>
</tr>
</tbody>
</table>
Team Complexity Data Analysis

The variable team complexity was developed as a composite variable representing team variability and experience. The variable was originally developed using data from average team census, average RN caseload, and average years of hospice experience. The variable “average RN caseload” became problematic, because when working in hospice inpatient units, often it is the LPN who performs a care management role and maintains the caseload. The team leader performs oversight of the care and processes. Thus, the variable was changed to “average nurse caseload,” with RN caseloads used in hospice home settings, and LPN caseloads used in hospice inpatient settings (N = 3). When forced into one factor using factor analysis, almost 60 percent of variance was explained; however, factor loadings were suspect. Nurse caseload and average team census loaded strongly on one component; however, average years of hospice experience had a strong negative loading. Thus, hospice experience plays a significant role for the team, however does not belong in this composite variable. The hospice experience variable was retained for additional analysis as an individual variable, but removed from the composite variable team complexity.

Research demonstrates that number of team members plays a role in team functioning (Campion et al., 1993; Sundstrom, De Meuse, & Futrell, 1990). The variable number of team members was added to the variables average nurse caseload and average team census to form the composite variable team complexity. Variables were forced into one component using principal component factor analysis. Seventy-three percent of variance was explained by this composite variable, with strong loadings on one
component (.68 -.96). The revised variable of team complexity was retained for further analysis. The research conceptual model was modified based upon psychometric analysis results.

FIGURE 2. Research Conceptual Model, Revised.

Level of Analysis

All variables in the proposed model were measured at the individual level; however, the unit of theory was at the team level. The team was the focus of interest, thus the team level of analysis was used. Individual interdisciplinary team member responses were aggregated, with the mean expressed as a team value. Group level content validity was assured as all instruments contained items with a group referent, representativeness was assured because only groups (teams) with a greater than 50 percent individual response rate were included in this study, and reliability and validity were assessed with
the aggregated item means (Rousseau, 1985; Verran, Gerber, & Milton, 1995; Verran, Mark, & Lamb, 1992). Greater than 60 percent of aggregated inter-item correlations among subscales were higher than the minimum threshold of .40, therefore reliability was demonstrated for the aggregated subscales and appropriate to use for team analysis (Verran, Gerber, & Milton).

For the present study, individual survey data were aggregated to create a team-level assessment for the team variables (team processes, perceived team effectiveness, and team task satisfaction). A one-way analysis of variance (ANOVA) was completed with the team as the independent variable to verify the appropriateness of aggregation to the team level and to verify that between-group differences were significantly larger than within group differences (Doolen, Hacker, & Van Aken, 2006). Intraclass Correlation Coefficients (ICCs) were calculated using the formula: ICC = (BMS-WMS)/BMS. All ICCs were less than the recommended requirement of .60, with leadership at .32, communication at .32, coordination at .34, conflict management at .30, perceived team effectiveness at .31, and team satisfaction at .06 (Verran, Gerber, & Milton, 1995). Thus, between-group variances were not significantly larger than the within-group variances, and aggregated group means were not reliable indicators of group agreement using intraclass correlation coefficients. Schneider and Reichers (1983) have suggested that people in work settings will tend to agree rather than disagree, and that one would not expect to find large differences across groups that belong to the same organization (cited in Doolen et al.). Additional analysis was completed to assess for significant differences
among the teams in order to assure that aggregated means were appropriate to use as a

group measure.

Within-group agreement was assessed by $r_{wg}$ (James, Demaree, & Wolf, 1984). The $r_{wg}$ compares the amount of variance observed between group members to an
expected random variation. An average $r_{wg}$ value of .70 or greater is a criterion for
justifying aggregation to the group level (George, 1990). The team process variables
expressed the following $r_{wg}$: leadership = .90, communication = .92, coordination = .86,
conflict management = .90, team effectiveness = .96, and team task satisfaction = .98.
Thus, there was sufficient evidence for aggregating all interdisciplinary team members’
responses to the group level, and use of the mean was an appropriate measure for the
team response. Table 5 provides a summary of the final model analyses.
### TABLE 5. Final Model Summary  
*(Agreement Indices, Means, Standard Deviations, and Intercorrelations)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICC</th>
<th>( r_{wg} )</th>
<th>( M )</th>
<th>( SD )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Hospice Team Experience</td>
<td>59.57</td>
<td>25.15</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Leadership</td>
<td>.32</td>
<td>.90</td>
<td>4.22</td>
<td>.24</td>
<td>ns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Communication</td>
<td>.32</td>
<td>.92</td>
<td>3.91</td>
<td>.22</td>
<td>-.37***</td>
<td>.46***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Coordination</td>
<td>.34</td>
<td>.86</td>
<td>4.16</td>
<td>.22</td>
<td>ns</td>
<td>.61***</td>
<td>.51***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Conflict Management</td>
<td>.30</td>
<td>.90</td>
<td>3.83</td>
<td>.23</td>
<td>-.47***</td>
<td>.60***</td>
<td>.55***</td>
<td>.57***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Perceived Team Effectiveness</td>
<td>.31</td>
<td>.96</td>
<td>4.49</td>
<td>.22</td>
<td>-.33**</td>
<td>.58***</td>
<td>.66***</td>
<td>.66***</td>
<td>.64***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Team Task Satisfaction</td>
<td>.06</td>
<td>.98</td>
<td>5.76</td>
<td>.46</td>
<td>ns</td>
<td>.35**</td>
<td>.59***</td>
<td>.49***</td>
<td>.60***</td>
<td>.68***</td>
<td></td>
</tr>
<tr>
<td>8) Family Satisfaction</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

* \( p \leq .1 \).  ** \( p \leq .05 \).  *** \( p \leq .01 \)
Data Analysis Results

Path analysis was used to test the relationships among model variables for all teams \((N = 41)\). The revised model proposed that rational hospice culture, team complexity, hospice team experience, and team leadership (cognitive, behavioral, and supportive) would directly influence team processes (leadership, communication, coordination, and conflict management). Subsequently, team processes would directly influence perceived team effectiveness, and perceived team effectiveness would directly influence team task satisfaction. The model also hypothesized that perceived team effectiveness and team task satisfaction would correlate positively with family satisfaction with hospice care.

In the first step of path analysis using stepwise regression, the team process variable \textit{leadership} (dependent variable) was regressed on rational hospice culture, team complexity, hospice team experience, and team leadership (cognitive, behavioral, supportive). Exploratory analysis of hospice team experience was included as this variable was strongly associated with team processes in the prior analysis. No relationships were identified among any of the independent variables and leadership.

In the second step, \textit{communication} (dependent variable) was regressed on rational hospice culture, team complexity, hospice team experience, and team leadership (cognitive, behavioral, and supportive). Rational hospice culture and team complexity were positively correlated with communication \((r = .22, p = <.10; r = .33, p = <.05)\), and hospice team experience was negatively correlated with communication \((r = -.37, p = <.01)\). Hospice team experience was the only variable that significantly influenced the
team process variable communication, explaining 11 percent of the variance ($\beta = -.37, p = <.05, R^2 = .11$). An adjusted R square was used due to limited sample size (Munro, 2001).

In the third step, coordination (dependent variable) was regressed on rational hospice culture, team complexity, hospice team experience, and team leadership (cognitive, behavioral, and supportive). Rational hospice culture was positively correlated with coordination ($r = .24, p = <.10$); however, this finding was nonsignificant with regression analysis.

In the fourth step, conflict management (dependent variable) was regressed on rational hospice culture, team complexity, hospice team experience, and team leadership (cognitive, behavioral, and supportive). Hospice team experience was negatively correlated with conflict management ($r = -.47, p = <.01$). Team complexity was positively correlated with conflict management ($r = .27, p = <.10$). However, team hospice experience was the only variable that directly influenced conflict management, explaining 20 percent of the variance ($\beta = -.47, p = <.01, R^2 = .20$).

Perceived team effectiveness was positively correlated with all team process variables (leadership: $r = .58, p=.000$, communication: $r = .66, p=.000$, coordination: $r = .66, p=.000$, conflict management: $r = .64, p=.000$). Perceived team effectiveness also correlated positively with rational hospice culture ($r = .31, p = <.05$). Hospice team experience was negatively correlated with perceived team effectiveness ($r = -.33, p = <.05$).
In the fifth step, *perceived team effectiveness* (dependent variable) was regressed on rational hospice organizational culture, team process variables (leadership, communication, coordination, and conflict management), and hospice team experience. These independent variables were the only variables included in this step because they were the only ones found significant in the previous four regressions. Stepwise regression showed that leadership, communication, and coordination exhibited direct positive influences on perceived team effectiveness (leadership: $\beta = .27, p = .05$, communication: $\beta = .36, p = .01$, coordination: $\beta = .33, p = .05$). In addition, hospice team experience exhibited a direct negative influence on perceived team effectiveness ($\beta = -.20, p = .10$). Sixty-four percent of variance was accounted by these variables, with the greatest contribution exhibited by the communication variable.

*Team task satisfaction* was positively correlated with perceived team effectiveness ($r = .68, p = .00$) and the team process variables (leadership: $r = .35, p = .05$, communication: $r = .59, p = .00$, coordination: $r = .49, p = .01$, and conflict management: $r = .60, p = .00$). Consistent with prior analyses, organizational team leadership variables did not correlate with team task satisfaction. In the sixth step, team task satisfaction was regressed with perceived team effectiveness and all team process variables. Only perceived team effectiveness and conflict management influenced team task satisfaction, accounting for 48 percent of the variance (perceived team effectiveness: $\beta = .50, p = .01$, conflict management: $\beta = .28, p = .10$). Perceived team effectiveness exhibited the greatest contribution to the explained variance. Path analysis regression detail is provided in Figure 3.
Hospice Organization B utilizes standardized Press Ganey satisfaction surveys for their hospice home care teams. Thus, a small sample of hospice home care teams \((N = 23)\) had data for family satisfaction with hospice care. Family satisfaction with hospice care was positively correlated with team task satisfaction \((r = .40, p = .<.10)\), team communication \((r = .41, p = .05)\), and conflict management \((r = .36, p = .<.10)\).

A predictive model was constructed (Figure 3). An adequate team sample size was maintained for path analysis \((N = 41)\), because six independent variables were maintained in the model (a ratio of five teams to one independent variable was deemed acceptable for use in path analysis). Three of the original seven research hypotheses were supported. All team processes except conflict management had positive direct effects on perceived team effectiveness. Perceived team effectiveness had a positive direct effect on team task satisfaction, and team task satisfaction was positively correlated with family satisfaction with hospice care in a limited sample. However, the results demonstrated that the proposed structure factors (hospice organizational culture, team complexity, and team leadership) did not impact hospice interdisciplinary team processes or effectiveness. Perceived team effectiveness was not correlated with family satisfaction with hospice care. In conclusion, only four of the eleven proposed linkages were supported in this model.

Six nonhypothesized linkages were significant. Hospice team experience, a variable not specified originally in the model, exhibited a negative direct effect on communication, conflict management, and perceived team effectiveness. The team process variable conflict management exhibited a direct positive influence on team task
satisfaction and a positive correlation with family satisfaction with care, and team communication had a positive direct correlation with family satisfaction with hospice care.

Data demonstrated additional important findings. Approximately sixty-five percent of the variance in perceived team effectiveness was explained by team hospice experience and the team leadership, communication, and coordination. Almost fifty percent of the variance in team task satisfaction was explained by the conflict management and perceived team effectiveness.

Conclusion of Results

Three of the original seven hypotheses were supported, and six nonhypothesized relationships were significant. Therefore, the causal model was not supported by data as originally specified. This research found interesting data results regarding the hospice interdisciplinary team that will be further reviewed in the next section.

Summary

This research tested a causal model of hospice interdisciplinary team processes and effectiveness. A non-experimental, descriptive-correlational design was used to examine the influence of organizational culture, team complexity, and team leadership on team processes and perceived team effectiveness. In addition, the influence of perceived team effectiveness on team task satisfaction and family satisfaction with hospice care and team task satisfaction and family satisfaction with hospice care was examined. All measures were assessed at both the individual and group levels for psychometric analysis. Path analysis was used to test the proposed causal model, with examination of direct and indirect hypothesized relationships.

Approximately sixty-five percent of the variance in perceived team effectiveness was explained by team hospice experience and the team leadership, communication, and coordination. Almost fifty percent of the variance in team task satisfaction was explained by the conflict management and perceived team effectiveness.
CHAPTER V: DISCUSSION AND RECOMMENDATIONS

The purpose of this research was to test a causal model of interdisciplinary hospice processes and effectiveness. This research examined the impacts of organization and team level structure constructs (organizational culture, team complexity, and team leadership) on hospice interdisciplinary team processes and subsequent influence on perceived hospice team effectiveness. The relationships among perceived team effectiveness, team task satisfaction, and family satisfaction with hospice care were also examined.

Measurements were utilized in this research that had not been used in prior hospice settings, thus psychometric properties were reported at both the individual and team level. Path analysis using multiple regression provided an initial understanding of the causal relationships influencing a hospice interdisciplinary team. Discussion of research findings is organized by Donabedian’s model of structure-process-outcome. Following interpretations of research findings, limitations of the study and implications for future study will be presented. The last section will discuss the relevance of the research findings to nursing science.

Research Study Structure Variables

The first research question assessed the impact of organizational culture, team complexity, and team leadership on team processes. It was hypothesized that the identified structural variables would positively affect team processes. These hypotheses were not supported, because organizational culture, team complexity, and team leadership did not directly affect team processes significantly. In addition, these structural
variables did not indirectly affect perceived team effectiveness through team processes. A non-hypothesized variable, hospice team experience, exhibited a negative direct effect on communication, conflict management and perceived team effectiveness.

**Organizational Culture**

Group culture, developmental culture, and hierarchical culture were not reliable and valid at the individual level of analysis, thus, they were dropped from further analyses. Rational culture exhibited evidence of reliability and validity, thus it was retained for further analysis. Further path analysis revealed that although rational culture was positively correlated with communication, coordination and perceived team effectiveness, the relationship was not significant. Organizational culture was eliminated from the final model.

It is interesting that of the four culture types, only one type, rational, exhibited evidence of reliability and validity. Although the organizational culture survey had not been used in a hospice setting to this author’s knowledge, a group or developmental culture type was expected to be the dominant culture because the hospice team environment exhibits similar attributes to those identified in prior research (Shortell et al., 1995). Group and developmental cultures exhibit values reflective of teamwork, affiliation, participation, and innovation (Quinn & Kimberly, 1984). These values are similar to values expressed within hospice interdisciplinary teams.

However, the rational culture type does make logical sense, because this organizational culture type emphasizes efficiency and achievement. Organizational culture may be viewed differently from an organizational perspective, a team leader
perspective, and a team perspective. Because this model viewed organizational culture from a team leader perspective, the values and attributes of rational culture may be consistent with the values inherent in a prescribed team leader role. These role-specific values and attributes may be very different from team level values and attributes.

The possibility existed that model stages were misspecified, and that organizational culture influenced team leadership, and team leadership in turn affected the hospice interdisciplinary team. Exploratory regression analysis was completed by means of the restaged model with hospice organizational culture directly influencing team leadership. Rational culture was negatively correlated with cognitive team leadership ($r = -.32, p < .05$), behavioral leadership ($r = -.38, p < .05$), and supportive leadership ($r = -.30, p < .05$). Hierarchical culture was also negatively correlated with supportive leadership ($r = -.26, p < .10$). Developmental culture was positively correlated with cognitive team leadership ($r = .30, p < .05$) and behavioral leadership ($r = .22, p < .10$) and group culture was positively correlated with supportive leadership ($r = .30, p < .05$). However, all path analysis regressions were nonsignificant for all relationships; thus, there is a continued lack of support for organizational culture variable. No conclusions can be drawn because of the psychometric limitations with these scales.

There is a possibility for an inherent problem with instrument subscales and use in the hospice environment. First, the rational subscale is the subscale that has a reported low Cronbach’s alpha (.47); however, was significantly higher in this study (.66) (Zammuto & Kramer, 1991). Group and developmental culture scales were combined as one measure in Shortell and associates’ (1995) research on continuous quality
improvement implementation. Other subscale reliability measures were not reported in this study, thus it is not known how they performed. For these reasons, there are inconsistent and missing data in the published studies supporting reliability and validity of the measurements.

Second, the survey is confusing to complete because the respondent is required to distribute 100 points among four questions evaluating four different organizational types. This may have been an issue if the respondent did not attend to detail or was constrained by time. Because group and developmental culture types are similar, it may have been difficult to adequately and thoughtfully complete the instrument if there was not enough time allowed to capture organizational differences in these subscales.

Last, team leaders may assess organizational culture differently than do hospice interdisciplinary teams. Thus, there may be discrepancies in how team leaders view organizational culture and how the hospice interdisciplinary team views organizational culture. Organizational culture may be role specific, not an overarching organizational world view that is consistent among all organizational staff. Role-specific culture may be the predominant influence on staff behavior and performance.

**Team Complexity**

Team complexity was hypothesized to be a composite variable measuring team variability and experience. As previous noted, the original data obtained from average team census, average RN caseload, and average years of hospice experience did not form a good composite variable. The revised *team complexity* variable was comprised of
average team census, average nurse caseload, and number of team members. This variable was found to be a valid indicator because seventy-three percent of variance was explained with strong factor loadings on one component.

Although correlated positively with the team process variables communication and conflict management, team complexity was not a significant predictor of team processes. One possible reason for this outcome was a lack of variability among the teams. Most organizations have target caseloads and team sizes; therefore, the data included for the composite variable may have been very consistent among all teams. Additional research is required to assess what team composition data would help differentiate high functioning interdisciplinary teams and those teams that do not function as well.

_Hospice Team Experience_

Hospice team experience was not hypothesized as an independent variable in the original model; however, the results suggested that this variable strongly influenced hospice interdisciplinary team processes. Hospice team experience was negatively correlated with team complexity, communication, conflict management, and perceived team effectiveness. In addition, hospice team experience negatively influenced the team processes of communication and conflict management and negatively impacted perceived team effectiveness. Thus, the greater hospice team experience, the less the team communicated and resolved conflicts. One possible reason is that teams that know each other well because of time and experience working together may spend less time talking with each other and managing conflict.
Interestingly, the greater the team experience, the less the perceived team effectiveness. This finding needs further exploration, because one would expect that a team with more experience would perceive they were more effective. The standardized coefficient was only -.2, thus the strength of the influence was not great. One possible reason for this unexpected finding is that the theory and model do not apply to hospice interdisciplinary teams. A second possible reason is that team experience as used and measured in this research is actually measuring another unintended concept. For example, increased hospice experience may be a proxy for staff burn-out or other concepts that are negatively associated with longevity. This finding remains an open question that requires additional research.

*Team Leadership*

The team leadership variables were problematic for the proposed model. All subscales (cognitive, behavioral, and supportive) were reliable and had support for validity via Cronbach’s alpha and factor analysis. However, there were no significant correlations or effects of team leadership on team processes or effectiveness. This complete lack of significance and relationship is interesting, as one would assume, based upon previous research and literature, that team leader behaviors would directly affect hospice interdisciplinary team functioning. This was not the case in this study.

The specified model of investigation may be missing a critical variable. Hospice interdisciplinary teams may operate more as self-regulating teams, not as traditional teams do in hierarchical organizations. If this is the case, the variable of *self-regulation*
may be missing from the research model. This would change the way team leaders are defined and the roles that are performed.

Self-directed work teams are also referred to as autonomous, empowered, self-regulating, or self-directed (Beckham, 1998). Attributes of this team type include a relatively whole task to perform; members who each possess a variety of skills relevant to the job task; worker discretion over decisions on how to perform the work (methods, schedules, assignments); assignment of members to different tasks; and feedback on the group performance (Beckham). A team usually consists of five to eighteen people working in a relatively unsupervised work process to produce a product or service (Blyth, 1999). A self-directed work team demands both individual and team accountability and common commitment. A key characteristic is the high degree of self-regulation that group members exert on their interdependent tasks (Beckham; Bertolotti, Macri, & Tagliaventi, 2005). Self-directed work teams exhibit a large amount of autonomy and control over their immediate work setting (Morgeson, 2005).

Hospice interdisciplinary teams meet these criteria. Although team leaders are present, the interdisciplinary team works together relatively autonomously to perform the service. The team together plans and executes the goals of care. Each discipline is responsible for providing care related to those goals; however, there is independence and team interdependence in how the services are completed. There is oversight of the team processes, but the team directs how goals are accomplished.

The role of the team leader, originally defined in a traditional leadership role, may be more that of a coach, facilitator, or consultant (Beckham, 1998). Major responsibilities
of a team leader in a self-directed work setting include facilitation of group process, communication, decision making, and conflict resolution (Blyth, 1999). Morgeson (2005) suggests that team leaders working with self-managing work teams are most needed when the team encounters unique problems. The team leader facilitates team preparation (building team capacities before events occur), provides team coaching (acting as a noninvasive resource of team decision making and fostering team independence), and provides sense making (managing and interpreting outside environmental events) (Morgeson). Other general responsibilities include promoting teamwork, filling in for absent team members, facilitating the growth of team members, answering general questions, and representing the team at outside meetings (Beckham).

This may be more of the model that hospices utilize, although the research organizational model was envisioned in a more traditional structure. If the interdisciplinary team operates independently with support, interpretation, and facilitation by the team leader, the model may be incorrect and misspecified. Team leadership may need to be defined and measured in a different manner, and the variable self-regulation may need to be added to team processes.

Research Study Process Variables

The second research question assessed the effect of team processes on perceived team effectiveness. It was hypothesized that team processes would have a positive direct effect on perceived team effectiveness. Three of the four team processes (leadership, communication, and coordination) exhibited a positive direct effect on perceived team
effectiveness. Conflict management had no significant effect on perceived team effectiveness.

The Interdisciplinary Team Survey was found to be reliable and have support for validity, with a Cronbach’s alpha for the total scale at .90 and subscales equal or greater than .70 (leadership = .78, communication = .78, coordination = .71, and conflict management = .70). Factor analysis provided evidence for validity, because all subscale items loaded on one factor (loadings greater than .30).

The conflict management subscale was the only subscale that did not exhibit robust psychometrics. One item (item 35) was deleted as it did not correlate well with the other items in the scale. With the item deleted, Cronbach’s alpha was .70, which met minimal criteria (Nunnely, 1994). However, only 32% of variance was explained. Hospice interdisciplinary teams seemed to have more difficulty answering questions regarding this process. Missing data was increased for this subscale (9.80% versus a low of 2.70%). It may be that the other processes are viewed as “positive” in nature, whereas conflict management may be viewed as “negative”. Team members may have wanted to avoid conflict and negativity, and therefore did not want to admit and address the fact that teams do have conflict and other issues that need resolution.

Leadership, communication, and coordination exhibited a positive direct effect on perceived team effectiveness. Sixty-two percent of variance in team effectiveness was explained by these three variables, with communication having the greatest impact. Percent of variance increased to 64% with the addition of hospice team experience; however, the direct effect was negative (as hospice team experience increased, perceived
team effectiveness decreased. Conflict management did not influence perceived team effectiveness.

Other interesting nonhypothesized team process effects were identified. The communication team process exhibited a positive correlation with family satisfaction with hospice care ($r = .41$). The better the team communication, the more satisfied family members were with the care they received. This intuitively makes sense because the more people know what is going on and what to expect, the more they feel in control and part of the process. Excellent communication with patients and families would lead to more satisfied customers.

Conflict management exhibited two direct influences not hypothesized in the original model. There was a positive direct effect on team task satisfaction and a positive direct correlation with family satisfaction with hospice care. Thus, interdisciplinary team members and families were more satisfied when hospice teams were able to manage conflict. Most people do not like conflict, and many lack the skills to help resolve disagreements. These data suggest that teams that are able to manage conflicts and disagreements successfully have more satisfied team members, and that families are more satisfied with teams that are able to work together successfully.

Research Study Outcome Variables

The fourth and fifth research questions assessed the influence of perceived team effectiveness and team task satisfaction on family satisfaction with patient care. It was hypothesized that perceived team effectiveness would be positively correlated with team task satisfaction and family satisfaction with patient care. Due to model augmentation,
the variable team task satisfaction was able to be fully analyzed using path analysis. Perceived team effectiveness directly influenced team task satisfaction; however, perceived team effectiveness was not correlated with family satisfaction with patient care. Thus, teams that felt they were effective were more satisfied in their work, but did not improve family satisfaction with care. Thus, hypothesis four was supported by data; hypothesis five was not.

All team process variables were positively correlated with team task satisfaction; however, only conflict management directly influenced team task satisfaction. Perceived team effectiveness and conflict management together accounted for 48 percent of variance in team task satisfaction. Perceived team effectiveness accounted for the greater effect on team task satisfaction, contributing with a standardized coefficient of .50 versus .28 for conflict management. Thus, hospice interdisciplinary teams that felt that they were effective were satisfied with their jobs. This finding is consistent with existing research and literature.

Perceived team effectiveness did not correlate with family satisfaction with hospice care. Hospice is a unique health care setting. Many family members are in a situation that they have not experienced before. When a loved one is dying, families are dealing with unfamiliar emotions and unfamiliar circumstances. Perceived team effectiveness may not be a priority quality outcome for team members and families at this time. As noted in the prior analyses, a team that communicates and works well with each other providing a seamless level of support for the dying patient and family may be more important than perceived team effectiveness as defined in this study.
Research question six assessed whether team task satisfaction influenced family satisfaction with hospice care. The research hypothesis was that team task satisfaction would be positively correlated with family satisfaction with hospice care, and this study provided evidence that it did. Team task satisfaction was significantly correlated with family satisfaction with hospice care. The more hospice staff were satisfied with their work, the happier families were with the hospice care provided.

The majority of causal linkages were not supported in the anticipated direction (research question six). Thus, the causal model was not supported by data. This study did, however, provide significant theoretical and data support for linkages not previously studied in a hospice setting.

Study Limitations

This section will discuss limitations of the study in terms of methodology and those related to study findings. Suggestions for study refinement are provided as indicated.

Limitations Related to Methodology

Access to an adequate sample size for the proposed research was problematic. It was anticipated that recruitment would be difficult due to the highly competitive nature of the hospice industry; however, most local hospice organizations did not return inquiry phone calls. The sample used in this research was a convenience sample drawn from two local hospices in a single community. Lack of randomization and diversity prevents generalization of study findings.
A minimum recommendation for factor analysis is five subjects for each independent variable. Therefore, a lack of participating teams required variables potentially essential in explaining variance to be eliminated from the model. This may have resulted in model misspecification and error. An adequate $N$ was maintained for final model testing in this study.

The sample used for this study was an issue for multiple reasons. First, a convenience sample of hospice interdisciplinary team members was surveyed at the beginning or end of a usual team meeting. This was potentially problematic in several areas. Although descriptive data provided evidence that all disciplines were represented, only those who attended the identified team meeting were included in the survey process. Surveys were given to members who were not in attendance, but these surveys were not returned to the researcher. The sample may be biased to people who attend meetings.

Second, because the survey was administered during a team meeting, there may have been time pressures. These time pressures may have been communicated either verbally or perceived by the team in an unstated fashion. Although missing data did not prove to be an issue, it was noted by the researcher that most items that were missing occurred in the second survey in the packet. Thus, lack of time and/or test fatigue may have been issues. Lack of attention may have also been a factor in survey completion, because team meetings have other team communication and events occurring in the same time period.

Third, the sample was comprised of teams from one large hospice and one small hospice. Differences between the organizations would have been dampened and data
skewed related size/sample differences. Maximizing diversity in hospice organizations would possibly enhance the ability to detect differences among the organizations and teams.

Finally, some teams had only one individual per discipline (for example, medical director) and one team leader. Therefore, although survey completion was anonymous and confidentiality was maintained, there may have been a hesitance on the part of the team member to complete survey as they could potentially be identified, especially if there was something negative to report.

Limitations Related to Findings

Potential model and variable misspecification, model staging errors, and/or measurement errors may have occurred with the proposed model. Refinement of midrange theories along with research would enhance the specification of significant model variables. More research is needed to identify significant contextual influences that impact the interdisciplinary team, with subsequent examination of the relationships. Organizational leaders must understand the impact of contextual factors in order to facilitate structures that support the interdisciplinary team. This area was lacking in the present study.

Family satisfaction with care could only be assessed in a limited sample due to lack of a standardized data collection process. Therefore, generalization is not appropriate. Data, however, provide a beginning understanding of processes and influences on family satisfaction with care.
In summary, the present research has several limitations. Sample size, non-randomized convenience sampling, and model misspecification limit study findings. Findings do inform a beginning understand of the model relationships and provide theoretical support and guidance for further study.

Implications for Further Research

Results of this study suggest opportunities for future research, because it provided preliminary knowledge of the hospice interdisciplinary team despite being limited by sample size and participation. The lack of organizational culture and team leadership influence on hospice interdisciplinary processes is concerning. Applying systems theory, interdisciplinary teams do not exist in isolation from the external organizational context; they are influenced in by other systems that surround them. The concept of organizational culture needs to be analyzed. There is a possibility that the conceptual definition of organizational culture is not congruent with this study. In addition, the hospice organizational culture survey may not have contained essential elements that measured the critical aspects of the hospice environment.

The team complexity variable, although exhibiting strong evidence of validity, did not influence team processes. A concept analysis of team complexity needs to be done in order to define essential team complexity elements to allow for accurate measurement. Future research needs to identify what complexity elements make teams unique and different. Subsequent assessment of this relationship to team processes and effectiveness can then be explored.
The role of team leadership needs to be explored. Team leadership, although supported in the literature and traditional management research as a critical component in organizations, did not significantly influence team processes and subsequent effectiveness. Additional research is needed to more clearly define and operationalize the concept of team leadership. There is a possibility that team leaders operate differently with the interdisciplinary team (as a coach or facilitator), and thus the instrument was not appropriate for use in this study and setting.

The identified team process variables were appropriate for this study and directly influenced other model variables. Team process variables were limited in this study, thus more research is required to more fully understand how teams function to achieve positive staff and patient/family outcomes. Self-regulation may be an interesting variable to explore conceptually, because the hospice interdisciplinary team is truly unique in that it is a *team* that works together and exhibits most qualities of a self-directed team. This may also influence the nature and role of the team leader and change the way team leaders are hired and trained.

Further research is needed to explore the effects of organizational culture on the hospice interdisciplinary team, the role and influence of the team leader, and self-regulation as a key variable in team processes. Additionally, further research is needed on how team processes and effectiveness influence staff satisfaction and patient satisfaction with care.
Relevance of Research Findings to Nursing Science

Theory allows nurse leaders to better understand the dynamic relationships within organizations. Systems theory provides a framework for understanding the multiple influences that impact patient care provision. The results of this study focused on the interdisciplinary team working in hospice settings. Although the findings are preliminary and limited in nature, they suggest what team processes are important to support and nurture in order to enhance staff and patient/family satisfaction. Communication and conflict management exhibited evidence of multiple influences on team and family outcomes, therefore, training in these team processes may be beneficial.

This research also provides direction for further research. The lack of support for organizational variables in this study was an unexpected finding. Nurse leaders need to understand how organizational factors influence interdisciplinary team processes in order to best support the team and enhance outcomes.

Summary

Hospice is currently in its infancy as part of the health care delivery system and growing rapidly, delivering cost-effective, quality end of life care. The hospice interdisciplinary team is charged with the care and coordination of this population, managing multiple needs requiring multiple disciplines. Although the team is responsible for this care, little is known how the hospice interdisciplinary team functions and the subsequent influence on individual team members and patients.

The purpose of this study was to examine the relationships among organizational and team level structures, hospice interdisciplinary team processes, and team and
patient/family outcomes. This study described the reliability and validity of instruments used to measured the proposed study variables of interest at the individual and aggregate level. Three hypothesized structural variables, hospice organizational culture, team complexity, and team leadership, did not influence hospice interdisciplinary team processes. One non-hypothesized variable, team hospice experience, negatively influenced communication, conflict management and perceived team effectiveness. Only three of the hypothesized team processes exhibited positive effects on perceived team effectiveness. In addition, communication was positively correlated with family satisfaction with hospice care. Conflict management positively influenced team task satisfaction and was positively correlated with family satisfaction with hospice care. Perceived team effectiveness positively influenced team task satisfaction, and team task satisfaction was positively correlated with family satisfaction with hospice care. Approximately sixty-five percent of the variance in perceived team effectiveness was explained by team hospice experience and the team processes leadership, communication, and coordination. Almost fifty percent of variance in team task satisfaction was explained by the conflict management process and perceived team effectiveness.

Relationships identified in this research are viewed as preliminary. Future research should modify and re-examine model relationships with a larger sample drawn from diverse hospice organizations. Structural variables influencing the hospice interdisciplinary team need to be re-examined for appropriateness and conceptual relevance because this study did not support their influence on the hospice interdisciplinary team. However, this study provided a foundation for understanding
hospice interdisciplinary team processes and the influence of these processes on team and family satisfaction. Using this knowledge, hospice organizations can facilitate and enhance team processes for optimal hospice outcomes.
APPENDIX A

LETTERS OF PERMISSION
September 14, 2006

Beth Hale, RN, MS
University of Arizona
bhaler@hov.org

Dear Ms. Hale:

I am writing in response to your recent request for permission to use the all or parts of the Quality Implementation Improvement Survey (QIS) questionnaire. This letter should serve as formal indication that I give you permission to use the QIS as long as it is cited in any publications and written materials that may result from your research. The citations for this survey are:


You may adapt the instrument to fit your needs.

We would be very interested in learning of the results of your research. Our best wishes in your work.

Thank you very much.

Sincerely,

Stephen M. Shortell

Stephen M. Shortell, Ph.D.
KOUZES POSNER INTERNATIONAL  
15419 Banyan Lane 
Monte Sereno, California 95030 USA  
FAX: (408) 354-9170

September 1, 2006

Ms. Beth Hale  
304 W. Gardenia Drive  
Phoenix, Arizona 85021

Dear Beth:

Thank you for your request to use the Leadership Practices Inventory (LPI) in your dissertation. We are willing to allow you to reproduce and modify the instrument as outlined in your request, at no charge, with the following understandings:

(1) That the LPI is used only for research purposes and is not sold or used in conjunction with any compensated management development activities;  
(2) That copyright of the LPI, or any derivation of the instrument, is retained by Kouzes Posner International, and that the following copyright statement is included on all copies of the instrument: "Copyright © 2005 James M. Kouzes and Barry Z. Posner. All rights reserved. Used with permission.";
(3) That one (1) electronic copy of your dissertation and one (1) copy of all papers, reports, articles, and the like which make use of the LPI data be sent promptly to our attention; and,
(4) That you agree to allow us to include an abstract of your study and any other published papers utilizing the LPI on our various websites.

If the terms outlined above are acceptable, would you indicate so by signing one (1) copy of this letter and returning it to us. Best wishes for every success with your research project.

Cordially,

Barry Z. Posner, Ph.D.
Managing Partner

I understand and agree to abide by these conditions:

(Signed)  
Date: 9-7-06
Beth Hale

From: Ann Tourangeau [ann.tourangeau@utoronto.ca]
Sent: Wednesday, September 06, 2006 9:50 AM
To: Beth Hale
Cc: McGilton, Kathy; Ann at UofT
Subject: RE: LPI revised
Attachments: LPI Observer - items in new 3-factor solution found by Tourangeau & McGilton in 2004.doc

Hi Beth,

That is great news. I am attaching the instructions for the 27-item, 3 subscale LPI observer instrument. This one is for the observer-LPI. The wording for the self-LPI is slightly different as it refers to oneself but is exactly the same item content. Best of luck with your research and please keep in touch!

Ann Tourangeau

Dr. Ann Tourangeau
Assistant Professor & Career Scientist
University of Toronto, Faculty of Nursing
215-155 College Street
Toronto, ON Canada  M5T 1P8
Phone: 416-978-6919
Fax: 416-978-8222

From: Beth Hale [mailto:blale@hov.org]
Sent: September 6, 2006 12:09 PM
To: Ann Tourangeau
Subject: RE: LPI revised

Good morning, Dr. Tourangeau! I received a letter from Dr. Posner yesterday with permission to reproduce and modify the LPI. As it is a letter, do you have a fax so that you can verify I have received permission?

I am very interested in the specifics of the revised LPI, as I would like to use this version for my dissertation. As I am performing causal modeling with teams, the three factor instrument would be extremely beneficial as opposed to the five factor instrument.

I look forward to hearing from you.

Beth Hale

From: Ann Tourangeau [mailto:ann.tourangeau@utoronto.ca]
Sent: Tuesday, August 29, 2006 7:40 AM
To: Beth Hale
Cc: Ann at UofT; Barry Posner
Subject: RE: LPI revised

Hi Beth,

9/6/2006
Greetings from Toronto, Canada!

Your dissertation plans sound very exciting. I would be pleased to share our LPI findings with you but I do not actually have the rights to allow others to use the LPI. Barry Posner & James Kouzes have copyright for the LPI. I am copying Barry Posner on this email so that you might contact him directly. Once you have permission to use the LPI, please re-contact me and I will share the specifics of the items we found for the revised LPI.

Best of luck with your plans and I look forward to hearing from you soon.

Ann

Dr. Ann Tourangeau  
Assistant Professor & Career Scientist  
University of Toronto, Faculty of Nursing  
215-155 College Street  
Toronto, ON Canada M5T 1P8  
Phone: 416-978-6919  
Fax: 416-978-8222

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From: Beth Hale [mailto:bhale@hov.org]  
Sent: August 28, 2006 7:32 PM  
To: ann.tourangeau@utoronto.ca  
Subject: LPI, revised

Good afternoon! I am currently a doctoral student at the University of Arizona in the United States and working on my dissertation. I am currently reviewing literature in preparation for writing my dissertation proposal. I am very interested in your work with the LPI. My research interest is organization, team, and team leadership influences on hospice interdisciplinary team processes and subsequent effectiveness. I am currently looking for a leadership instrument suitable for middle managers, but with a light response burden.

Would you be willing to share the revised instrument?

Thank you so much for your consideration.

Beth A. Hale, RN, MS  
University of Arizona Doctoral Candidate

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Beth Hale

From: Temkin-Greener, Helena [Helena_Temkin-Greener@URMC.Rochester.edu]
Sent: Tuesday, July 11, 2006 4:59 PM
To: Beth Hale
Subject: RE: Interdisciplinary team process and performance instrument
Attachments: Team Survey doc; Outcomes Research in PACE.doc

Attached please find the survey tool and a one page summary indicating which survey items comprise which of the domains examined. Best wishes in your research.

Helena Temkin-Greener

---

From: Beth Hale [mailto:bhale@hov.org]
Sent: Tue 7/11/2006 7:10 PM
To: Temkin-Greener, Helena
Subject: Interdisciplinary team process and performance instrument

Dr. Temkin-Greener,

I am a doctoral candidate in nursing at the University of Arizona. I am in the process of reviewing literature in preparation for writing my dissertation proposal. My research interest is organizational, team, and individual influences on interdisciplinary team processes, that in turn affect team effectiveness in a hospice environment. Your model published in Medical Care, 2004. is very similar to my working model at this time. I believe that your instrument would prove to be very beneficial to my work.

I am writing to inquire whether you would be willing to share the instrument with me. I would be very interested in assessing its appropriateness to my research.

Beth A. Hale, RN
Doctoral Candidate, University of Arizona

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CONFIDENTIAL NOTICE: This e-mail, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information exempt from disclosure under applicable law. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by e-mail and destroy all copies of the original message and attachments. Thank You.

7/12/2006
Hi Beth,

I’ve managed to dig out my write-up of the exploratory factor analysis that I did on the group task satisfaction scale when I was completing my doctorate. I’ve attached that write-up to this email - it provides the scale items and shows you how they loaded. I used a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) and the respondents were asked to identify the level of agreement within their team to the statements making up the scale.

I’m afraid it is all a bit hazy in my memory, but I did use the scale in two health organizations and so it should fit your situation. Obviously I would recommend deleting the item which formed a separate factor on its own.

All the best with your own research,

Claire

At 06:41 AM 13/07/2006, you wrote:

Good afternoon! I am a doctoral student at the University of Arizona in the United States. I am currently reviewing literature in preparation for writing my dissertation proposal. I am very interested in your Group Task Satisfaction Scale. My research interest is organization, team, and individual influences on the hospice interdisciplinary team. A terminal outcome will be team satisfaction.

I would very much like to review the instrument for appropriateness to my research. Would you be willing to share the scale with me? Are there any changes that you will be making to the scale in light of your factor analysis results published in 2005?

Thank you so much for your consideration.

Beth A. Hale, RN, MS
University of Arizona Doctoral Candidate
Good morning! Thank you so much, Claire – this helps immensely. I will keep you posted.

Beth

From: Claire Mason [mailto:cm.mason@qut.edu.au]
Sent: Friday, September 08, 2006 1:40 AM
To: Beth Hale
Subject: RE: Group Task Satisfaction Scale

Hi Beth,

Sorry I’ve taken a while to get back to you. I think i’ve got the answer that you want - I hope so.

The three items assessing the group’s satisfaction with its internal work environment are:
Our team is happy with the way we work together as a group
Our team experiences dissatisfaction because of conflict among group members (R)
Our team experiences frustration when trying to work together (R)

The three items assessing the group’s satisfaction with its task are:
Our team finds its work fulfilling
Our team feels it gets a lot out of its work
Our team finds its work stimulating

The three items assessing the group’s satisfaction with its external environment are:
Our team is dissatisfied with the resources available for the team (R)
Our team is satisfied with the level of support form other groups within this organisation
Our team is satisfied with senior managers of this organization
Our team is dissatisfied with the rewards it receives (R)

I’m sorry I didn’t send you these items the first time - it is just that we did a few different versions of the analyses and I didn’t remember which ones we went with in the end.

All the best,
Claire

At 09:13 AM 31/08/2006, you wrote:

Good afternoon! I apologize for “bugging” you again, but I was wondering if you had your ten item scale available to send me. Thank you so much for sending me the 24 item scale, but I am having difficulties in narrowing the items down to the ten items published in your 2005 article in Group & Organizational Management.

Again, thank you so much for your time. I think your scale will work well with my research.

Beth
October 25, 2006

Beth A. Hale, RN, MS
304 W. Gardenia Dr.
Phoenix, AZ 85021

Dear Ms. Hale,

Serenity Hospice and Palliative Care is granting authorization to Beth Hale, RN, PhD candidate from the University of Arizona College of Nursing, to utilize our organization in her dissertation study “Hospice Interdisciplinary Team Processes and Effectiveness.” I understand that our organization’s and our employees’ participation in this survey is strictly voluntary and that either party may decide not to participate at any time.

Thank you,

Ruth Siegel
Vice President, Serenity Hospice and Palliative Care
September 26, 2006

Dear Ms. Hale:

Hospice of the Valley is granting authorization to Beth Hale, RN, PhD candidate from University of Arizona College of Nursing, to utilize our organization in her dissertation study “Hospice Interdisciplinary Team Processes and Effectiveness.” I understand that our organization’s and our employees’ participation in this survey is strictly voluntary, that either party may decide not to participate at any time and is conditional upon University of Arizona’s Human Subjects Approval and Hospice of the Valley’s research committee approval.

Sincerely,

[Signature]

Callene Bentoncourt
Director of Operations
Hospice of the Valley
APPENDIX B

HUMAN SUBJECTS – EXEMPT STATUS
31 October 2006

Beth Hale, MS
Advisor: Joyce Verran, Ph.D.
College of Nursing
PO Box 210203

RE: HOSPICE INTERDISCIPLINARY TEAM PROCESSES AND EFFECTIVENESS

Dear Ms. Hale:

We received documents concerning your above cited project. Regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101(b) (2)] exempt this type of research from review by our Institutional Review Board. Note: Copies of your Disclaimer Forms, with IRB approval stamp affixed, are enclosed for duplication and use in enrolling subjects.

Please be advised that clearance from academic and/or other official authorities for site(s) where proposed research is to be conducted must be obtained prior to performance of this study. Evidence of this must be submitted to the Human Subjects Protection Program office.

Exempt status is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consenting instrument used (copies of which we have on file) without the review and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

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

Sincerely,

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

cc: Departmental/College Review Committee
HOSPICE ADMINISTRATOR DISCLAIMER FORM
Title of Project: HOSPICE INTERDISCIPLINARY TEAM PROCESSES AND EFFECTIVENESS

You are being invited to voluntarily participate in the above-titled research study. The purpose of the study is to examine the relationships of organizational and team influences on hospice interdisciplinary team processes and effectiveness. The relationship of team effectiveness and satisfaction will also be assessed. You are eligible to participate if you are 18 years or older and have knowledge of your hospice organization. If you agree to participate, your involvement will comprise completing the attached survey. The survey can be completed in a location convenient for you and will take approximately five minutes. You may choose not to answer some or all of the questions, and you may withdraw from the study at any time. Your name does not appear on the survey, and your confidentiality will be maintained in all reports of this project.

Any questions you have regarding the study will be answered, and you may withdraw from the study at any time. There are no known risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time. You will not be compensated for your participation, however snacks will be provided. No language barrier has prevented you from understanding this disclaimer form or from participating in the study.

Only the principal investigator will have access to the information you provide. In order to maintain your confidentiality, your name and identity will not be revealed in any reports that result from this project. Survey information will be locked in a cabinet in a secure place.

You can obtain further information from the principal investigator (Beth Hale, RN, MS, a doctoral student at the University of Arizona), at bhale@nursing.arizona.edu or 602-997-9544. If you have any questions concerning your rights as a research subject, you may call the University of Arizona Human Subjects Protection Program office at (520)626-6721.

By completing the survey, you are giving permission for the investigator to use your information for research purposes.

Thank you.

Beth Hale, RN, MS

Instructions:
Please complete the surveys at your earliest convenience.

Some of the items may appear similar. Please answer the items in order and do not go back and compare answers. Just answer the item as you believe at that moment.

Place the completed survey in the attached envelope, seal it, and return it.

Please return before _______
TEAM LEADER AND HOSPICE INTERDISCIPLINARY TEAM
DISCLAIMER FORM
Title of Project: HOSPICE INTERDISCIPLINARY TEAM PROCESSES AND
EFFECTIVENESS

You are being invited to voluntarily participate in the above-titled research study. The purpose of
the study is to examine the relationships of organizational and team influences on hospice
interdisciplinary team processes and effectiveness. The relationship of team effectiveness and
satisfaction will also be assessed. You are eligible to participate because you are member of a
hospice interdisciplinary team or a hospice team leader and at least 18 years of age or older. If
you agree to participate, your involvement will comprise completing the attached surveys. The
surveys can be completed in a location convenient for you and will take approximately 15
minutes. You may choose not to answer some or all of the questions, and you may withdraw
from the study at any time. Your name does not appear on the survey, and your confidentiality
will be maintained in all reports of this project.

Any questions you have regarding the study will be answered, and you may withdraw from the
study at any time. There are no known risks from your participation and no direct benefit from
your participation is expected. There is no cost to you except for your time. You will not be
compensated monetarily for your participation, however snacks will be provided in appreciation
of your time. No language barrier has prevented you from understanding this disclaimer form or
from participating in the study.

Only the principal investigator will have access to the information you provide. In order to
maintain your confidentiality, your name and identity will not be revealed in any reports that
result from this project. Survey information will be locked in a cabinet in a secure place.

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of Arizona Human Subjects Protection Program office at (520)626-6721.

By completing the survey, you are giving permission for the investigator to use your information
for research purposes.

Thank you.

Beth Hale, RN, MS

Instructions
Please complete the surveys at your earliest convenience.

Some of the items may appear similar.
Please answer the items in order and do not go back and compare answers. Just answer
the item as you believe at that moment.

Place the completed survey in the attached envelope, seal it, and return it.

Please return before _______.
APPENDIX C

ORGANIZATIONAL SURVEY
ORGANIZATIONAL SURVEY

Please provide the following information. Remember confidentiality of the information will be maintained. Thank you for your participation!

1. Hospice Name_________________________________________________________

2. Number of hospice teams________________________________________________

3. Number of direct care staff per team
   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____
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   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____
   Team Name_____________________ Number on team___________ Census____

4. Number of team leaders (middle managers)___________________________________

5. Profit status
   ________ For-profit
   ________ Not-for-profit

6. Average patient daily census
   ________ Patients per day
APPENDIX D

TEAM LEADER SURVEY
TEAM LEADER SURVEY

Please provide the following information. Remember confidentiality of the information will be maintained. Thank you for your participation!

1. Hospice Name_________________________ 2. Team Name (if applicable)

3. What is your age? ________years

4. What is your gender? _______female _______male

5. What is your discipline? _________RN

   _______LPN

   _______Social Worker

   _______Medical Director

   _______Other (Specify):

   ____________________

6. What is your highest educational level? _________Less than high school

   _______High school

   _______Diploma

   _______Associate degree

   _______Baccalaureate degree

   (non-nursing)

   _______Baccalaureate degree

   (nursing)

   _______Advanced degree: Specify

   ____________________

7. How long have you worked in hospice? _________years _______months

   *Specify months if <1 year

8. How long have you worked for this hospice? _________years _______months

   *Specify months if < 1 year

9. How long have you been a team leader? _________years _______months

   *Specify months if < 1 year

Thank you for your participation!
APPENDIX E

HOSPICE ORGANIZATIONAL CULTURE
HOSPICE ORGANIZATIONAL CULTURE

Instructions: These questions relate to the type of hospice that your organization is most like. Each of these items contains four descriptions of hospices. Please distribute 100 points among the four descriptions depending on how similar the description is to your hospice. None of the descriptions is any better than the others; they are just different. For each question, please use all 100 points.

For example: In question 1, if Hospice A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.

Hospice Character (Please distribute 100 points)
1. _____ Hospice A is a very personal place. It is a lot like an extended family. People seem to share a lot of themselves.
2. _____ Hospice B is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
3. _____ Hospice C is a very formalized and structured place. Bureaucratic procedures generally govern what people do.
4. _____ Hospice D is very production oriented. A major concern is with getting the job done. People aren't very personally involved.

Hospice's Managers (Please distribute 100 points)
5. _____ Managers in Hospice A are warm and caring. They seek to develop employees' full potential and act as their mentors or guides.
6. _____ Managers in Hospice B are risk-takers. They encourage employees to take risks and be innovative.
7. _____ Managers in Hospice C are rule-enforcers. They expect employees to follow established rules, policies, and procedures.
8. _____ Managers in Hospice D are coordinators and coaches. They help employees meet the hospice's goals and objectives.

Hospice Cohesion (Please distribute 100 points)
9. _____ The glue that holds Hospice A together is loyalty and tradition. Commitment to this hospice runs high.
10. The glue that holds Hospice B together is commitment to innovation and development. There is an emphasis on being first.

11. The glue that holds Hospice C together is formal rules and policies. Maintaining a smooth running operation is important here.

12. The glue that holds Hospice D together is the emphasis on tasks and goal accomplishment. A production orientation is commonly shared.

**Hospice Emphases (Please distribute 100 points)**

13. Hospice A emphasizes human resources. High cohesion and morale in the organization are important.

14. Hospice B emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.

15. Hospice C emphasizes permanence and stability. Efficient, smooth operations are important.

16. Hospice D emphasizes competitive actions and achievement. Measurable goals are important.

**Hospice Rewards (Please distribute 100 points)**

17. Hospice A distributes its rewards fairly equally among its members. It's important that everyone from top to bottom be treated as equally as possible.

18. Hospice B distributes its rewards based on individual initiative. Those with innovative ideas and actions are most rewarded.

19. Hospice C distributes rewards based on rank. The higher you are, the more you get.

20. Hospice D distributes rewards based on the achievement of objectives. Individuals who provide leadership and contribute to attaining the hospital's goals are rewarded.

**YOUR ASSISTANCE IS VERY MUCH APPRECIATED!**

APPENDIX F

LEADERSHIP PRACTICES INVENTORY
Leadership Practices Inventory: Self

Organization:

Instructions: You are being asked to assess your leadership practices. Below are 27 statements describing various leadership practices. Please read each statement carefully. Then look at the rating scale and decide how frequently you engage in the behavior described.

Below is the rating scale you will use for your responses:

1 = Almost Never  
2 = Rarely  
3 = Seldom  
4 = Once in a While  
5 = Occasionally  
6 = Sometimes  
7 = Fairly Often  
8 = Usually  
9 = Very Frequently  
10 = Almost Always

When selecting each response, please be realistic about the extent to which you actually engage in the behavior. Do not answer in terms of how you would like to behave or in terms of how you think you should behave. Answer in terms of how you typically behave on most days, on most projects, and with most people.

To what extent do you typically engage in the following behaviors? Choose the number that best applies to each statement and record it in the blank space to the left of the statement.

<table>
<thead>
<tr>
<th>1 Almost Never</th>
<th>2 Rarely</th>
<th>3 Seldom</th>
<th>4 Once in a While</th>
<th>5 Occasionally</th>
<th>6 Sometimes</th>
<th>7 Fairly Often</th>
<th>8 Usually</th>
<th>9 Very Frequently</th>
<th>10 Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Seek out challenging opportunities that test my own skills and abilities.________________</td>
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<td>2. Talk about future trends that will influence how my work gets done.________________</td>
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<tr>
<td>3. Develop cooperative relationships among the people I works with.__________________</td>
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<td>4. Set a personal example of what I expect from others._____________________________</td>
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<td>5. Praise people for a job well done.____________________________________________</td>
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<tr>
<td>6. Challenge people to try out new and innovative approaches to their work.____________</td>
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<td>7. Describe a compelling image of what our future could be like.________________________</td>
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<tr>
<td>8. Actively listen to diverse points of view.________________________________________</td>
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</tbody>
</table>
9. Spend time and energy on making certain that the people I work with adhere to the principles and standards that have been agreed on.

10. Make it a point to let people know about his or her confidence in their abilities.

11. Search outside the formal boundaries of my organization for innovative ways to improve what we do.

12. Appeal to others to share an exciting dream of the future.

13. Treat others with dignity and respect.

14. Follow through on the promises and commitments that I make.

15. Make sure that people are creatively rewarded for their contributions to the success of projects.

16. Show others how their long-term interests can be realized by enlisting in a common vision.

17. Support the decisions that people make on their own.

18. Am clear about my philosophy of leadership.

19. Publicly recognize people who exemplify commitment to shared values.

20. Experiment and take risks even when there is a chance of failure.


22. Give people a great deal of freedom and choice in deciding how to do their work.

23. Make certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.

24. Find ways to celebrate accomplishments.

25. Speak with genuine conviction about the higher meaning and purpose of our work.

26. Make progress toward goals one step at a time.

27. Give the members of the team lots of appreciation and support for their contributions.

Reference

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APPENDIX G

INTERDISCIPLINARY TEAM DEMOGRAPHICS
INTERDISCIPLINARY TEAM DEMOGRAPHICS

Please provide the following information. Remember confidentiality of the information will be maintained.

1. Hospice Name____________________________ 2. Team Name_________________

3. What is your age? ________years

4. What is your gender? _______female _______male

5. What is your discipline? 
   ________RN 
   ________LPN 
   ________Social Worker 
   ________Medical Director 
   ________CNA 
   ________Pastoral Counselor 
   ________Volunteer Coordinator 
   ________Bereavement Staff 
   ________Other (Specify): ____________________

6. What is your highest educational level? 
   ________Less than high school 
   ________High school 
   ________Diploma 
   ________Associate degree 
   ________Baccalaureate degree (non-nursing) 
   ________Baccalaureate degree (nursing) 
   ________Advanced degree: Specify 

7. How long have you worked in hospice? ________years _______months 
   *Specify months if <1 year

8. How long have you worked for this hospice? ________years _______months 
   *Specify months if < 1 year
9. How would you describe your ethnicity? _________ White, non-Hispanic
_______ Hispanic
_______ Native American
_______ Black/African American
_______ Asian
_______ Other (Specify):

10. What is your average daily caseload? _________ patients

11. What is your primary work setting? _________ Home setting
_______ Inpatient setting
_______ Group homes/ALF

Thank you for your participation!
APPENDIX H

INTERDISCIPLINARY TEAM SURVEY
# INTERDISCIPLINARY TEAM SURVEY

**Directions:** Please answer the following questions by circling the number from 1 to 5 that most accurately describes your work environment, with 1 meaning Strongly Disagree and 5 meaning Strongly Agree.

**Definitions:**
- **Team:** Co-workers with whom you share responsibility for patient care.
- **Team Leader:** Generally, this is the person to whom you report. However, there may be more than one person you consider your team leader. If this is the case, please check the answer that most closely corresponds to your overall impression of your leadership.

## Section I: Part A

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) When possible, my team leader allows team members to solve their own patient care problems.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2) As a team member, I am able to influence my team leader as much as she/he influences me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3) My team leader does not encourage me to solve my own problems.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4) My team leader gives me opportunities for personal growth and development.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5) I am uncertain where I stand with the team leader.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6) My team leader stresses standards of excellence to the team.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7) My team leader does not make her/his expectations clear to team members.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8) My team leader is sensitive to the needs of the team.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9) The team leader does not encourage members to take the first step.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

## Section I: Part B

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) In our team meetings, we talk about and resolve the necessary issues.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2) We usually do not get much done in team meetings.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3) Our team meetings are disorganized.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

## Section I: Part C

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Written plans and schedules within our team, are very effective.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>2) It is not easy to talk to other members of the team.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3) I never have to double-check information given to me by other team members.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4) When team members talk, we all understand each other.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5) I find it easy to ask the advice of others in my team.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6) I have received incorrect information from others in this team more than once.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7) I enjoy talking to other members of the team.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8) Information passed between team members is accurate.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9) I feel that certain team members do not totally understand the information they receive.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10) Team members are easily available to assist each other.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11) Others in my team have a good understanding of patient care plans and goals.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12) There is effective communication between most team members about patient care.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13) I feel that I have a good understanding of patient care plans.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14) Team members are not well informed regarding events that happen on other shifts.</td>
<td>1 2 3 4 5</td>
<td></td>
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</table>

**Section I: Part D**

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<tbody>
<tr>
<td>1) All team members work hard to solve a problem.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2) Our team does a good job in meeting family member needs.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>3) A dispute between team members will not be resolved until everyone is happy with the decision.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>4) All team members contribute based on their experience and expertise to produce a quality solution.</td>
<td>1 2 3 4 5</td>
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<tr>
<td>5) When two members of a team disagree, they generally involve their team leader in resolving their issue.</td>
<td>1 2 3 4 5</td>
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<tr>
<td>6) Our team does a good job in meeting patient care needs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7) Disagreements between team members are ignored or avoided by other team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8) Our team responds well to emergencies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9) Often, when team members disagree, they will ignore the problem, pretending it will 'go away'.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10) Our team leader rarely has to resolve a dispute between team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11) Our team almost always meets its patients' care needs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12) Team members tend to withdraw from a conflict.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13) Although there are a variety of patients, our team's outcomes are very good.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14) Overall, our team functions very well together.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15) In this team, there are problems that regularly need to be referred to someone higher up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16) Within our team, all points of view are considered when solving a problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please put completed survey into return envelope provided and place in the assigned box.

THANK YOU VERY MUCH!!!

IF YOU HAVE ANY QUESTIONS OR NEED ASSISTANCE IN COMPLETING THIS SURVEY, PLEASE CALL Beth Hale at 602-997-9544.


APPENDIX I

GROUP TASK SATISFACTION
GROUP TASK SATISFACTION

Instructions: Please answer the following questions by circling the number from 1 to 7 that most accurately describes your team and your team’s work, with 1 meaning Strongly Disagree and 7 meaning Strongly Agree.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Our team is happy with the way we work together as a group.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. Our team finds its work fulfilling.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. Our team is dissatisfied with the resources available for the team.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. Our team experiences dissatisfaction because of conflict among group members.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. Our team is dissatisfied with the rewards it receives.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. Our team gets a lot out of its work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. Our team is satisfied with senior managers of this organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. Our team experiences frustration when trying to work together.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9. Our team finds its work stimulating.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. Our team is satisfied with the level of support from other groups within this organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your participation!

REFERENCES


Perrin, E.B. (2002). Some thoughts on outcomes research, quality improvement, and performance measurement. Medical Care, 40(6), 89-91.


Schonwetter, R. (2006). Hospice and palliative medicine: Ten years has made a difference. *Journal of Palliative Medicine, 9*(2), 236-238.


