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Resilience and Speed of Recovery after Critical Illness

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Abstract

Length of stay in the critical care setting is a topic of concern for both patients and the health care system. However, the subject of psychological influences on recovery time after critical illness is a one that little to no research has been conducted.

This extensive literature review aims to look specifically at the relationship between resilience and speed of recovery after critical illness and research that has been done on this subject matter. Within this review lies an extensive review of literature, in-depth definitions of resilience, factors affecting length of stay in the intensive care units, a theoretical framework with which to build upon, along with recommendations to advanced practice nurses for further research on this subject matter. It also includes a tool which measures resilience developed by Wagnild and Young.

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Resilience and Speed of Recovery after Critical Illness

CHAPTER I

INTRODUCTION

Increasing length of stay in the intensive care unit is a real problem for advanced practice nurses today. Examining the reasons for lengthy stays, complications associated with ICU stays, and ways to avoid these can provide the advanced practice nurse with crucial knowledge to improve patient outcomes. By doing so, practitioners can provide more effective and efficient care.

Recently, the role that a nurse practitioner can have in health care has gained more attention in the medical and public communities. Nurse practitioners place much emphasis on preventative medicine and wellness care. This may include care for patients in a critical care setting.

The study of resilience is an important concept for nurses as they endeavor to assist individuals to meet challenges of living with illness (Jacelon, 1997). By assessing patient resilience upon entering the ICU, then promoting behaviors to enhance resilience, practitioners can be an even more integral part of the medical team.

Background and Significance

For years, nurses have been aggressively treating and attending to the medical needs of critically ill patients. Health care has come a long way due to advancements in evidence-based care. More patients are surviving more severe illnesses and injuries due to the level of care medical professionals are able to provide. One thing that frequently is forgotten in the intensive care unit is psychological well-being. Service providers in the

medical and rehabilitation communities not only need to understand the medical implications of recovery, but also the psychosocial implications of recovery (Ferguson, Richie, & Gomez, 2004).

If health care providers address the psychosocial needs in addition to the physical needs, the healing process can be more speedy and effective, leading to a successful recovery. Ryff and Singer (2000) have emphasized the linkage between psychosocial factors and vulnerability to disease and have suggested applying psychosocial therapies to prevent, treat, and rehabilitate disease (Chann & Wong, 2006).

Long stays in the intensive care unit are associated with high costs and burdens on patients and patients' families and in turn affect society at large (Gruenberg, 2006). It is important to continue research to look for more ways to shorten hospital stays, in particular ICU, to improve patient outcomes as a whole. The study of resilience is an important concept for nurses as they endeavor to assist individuals to meet the challenges of living with illness (Jacelon, 1997).

Statement of the Problem

Increased length of stays in the hospital can lead to increased risks of complications following illness or injury. No study has addressed the correlation between psychological characteristics and length of stay (Gruenberg, 2006). Further research on innovations to reduce length of stay should address the impact of psychological health (Gruenberg, 2006).

Literature on stress and coping has been focused mainly on the negative or pathogenic consequences of stressful encounters (Chann & Wong, 2006). This one-sided focus may portray an incomplete picture of posttraumatic outcomes (Chann & Wong,

2006). Instead of solely focusing on pathological or behavioral variables, there is increasing evidence that cognitive adaptation indicators have implications for physical health as well as psychological well-being (Chann & Wong, 2006). The needs of seriously injured adults require evidence-based nursing to reduce complications, enhance survival, and improve functional outcomes (Jacoby, Ackerson, & Richmond, 2006).

Nurses are integral in designing interventions to optimize the recovery process (Jacoby, Ackerson, & Richmond, 2006). Early mobilization mediated by nursing staff can prevent respiratory complications, deep vein thrombosis, and pressure ulcers (Jacoby, Ackerson, & Richmond, 2006). Maintenance of good nutrition, appropriate pain control, and emotional support are important nursing goals in the care of injured patients, and further evidence-based practices are needed to make a tangible difference in hospital-based outcomes (Jacoby, Ackerson, & Richmond, 2006). With stronger evidence, nurses will be better prepared to design and test interventions to enhance the survival and recovery of older adults who experience severe injury (Jacoby, Ackerson, & Richmond, 2006).

The ability of some people to weather adversity is of great interest to nurses (Jacelon, 1997). By identifying traits of these people, or the process they employ to maintain or recover integrity, nurses may be able to predict which clients are at risk from succumbing to their circumstances, encourage those who have the potential to persevere, and promote development of skills useful in successfully negotiating variations in health (Jacelon, 1997).

Significance of the Study

The central element in the study of resilience lies in the power of recovery and in the ability to return once again to those patterns of adaptation and competence that characterized the individual prior to the pre-stress period (Jacelon, 1997). Flach (1930, 1988) described the dynamic process of resilience as a system which can be learned at any point in life (Jacelon, 1997). Fine (1991), in her work with physically disabled individuals, found that personal perceptions and responses to stressful life events are crucial elements of survival, recovery, and rehabilitation, often transcending the reality of the situation or the interventions of others (Jacelon, 1997).

Further studies can potentially provide the health care community with new research on the correlation between one's resilience and the speed of their recovery after critical illness. Little research has been done in this area, as the study of resilience is a fairly new concept. If one can design interventions to speed the recovery of critically ill patients, one can in turn lessen the chance of complications associated with critical illness and increased length of stays. This literature review is aimed to compile the existing studies involving resilience and length of stay in the intensive care unit so that one may be able to direct their emphasis of study on the subject in the future.

Theoretical Framework

Kristen Swanson's Theory of Caring is utilized within this study due to its purpose of trying to help practitioners deliver nursing care that focuses on the needs of the individual in a way that fosters their dignity, respect, and empowerment (Tomey & Alligood, 2006). Another purpose of this theory, not explicitly embedded in the matrix

of the theory, is to promote wholeness and healing to enhance contemporary nursing practice while bringing the discipline back to its traditional caring-healing roots.

The theory of caring was formulated empirically using inductive methodology. With inductive reasoning, hypothesis and relationships are induced by experiencing or observing phenomena and reaching conclusions (Tomey & Alligood, 2006). Therefore, this theory was generated because Dr. Swanson induced the phenomena of caring from her research with women who experienced unexpected pregnancy loss, caregivers to premature and ill babies in the NICU, and socially at risk mothers who received long-term care from master's-prepared nurses.

The purpose of Swanson's Theory of Caring is to help practitioners deliver nursing care that focuses on the needs of the individuals in a way that fosters their dignity, respect, and empowerment (Tomey & Alligood, 2006). The purpose of the theory is very broad. The theory does not only apply to perinatal nursing, or to nursing alone. This theory can be applied beyond the nurse-client relationship, possibly in the field of education, psychology, sociology, and parenting. The theory of caring has a positive value orientation. The purpose of the Theory of Caring reflects understanding, in a cause and effect-type relationship. The reader can deduct that if one takes certain actions of caring, they will see better results over-all in their patients. This creates meaning to the reader of the theory.

Another purpose of this theory of caring, not explicitly embedded in the matrix of the theory, is to promote wholeness and healing to enhance contemporary nursing practice while bringing the discipline to its traditional caring-healing roots.

Within the Theory of Caring, there is one major concept with sub concepts organized under it. There are seven concepts within the theory; caring, knowing, being with, doing for, enabling, maintaining belief, and intended client outcome. The concepts are configured in such that caring is the wanted end-result, that must be accomplished by completing all of the sub concepts as previously listed. All of the concepts can be interrelated. The concepts are broad in scope. These concepts are fairly explicit, easily understood. One can make the concepts more abstract in one's interpretation of the meaning, but they can be applied fairly explicitly. The explicit nature and consistency of language used to define the concepts allows students and nurses to understand and apply Swanson's theory in practice. There is very little highly abstract content within the Theory of caring, therefore the balance leans toward more explicitness.

There are seven concepts within the Theory of Caring. The concepts can be related or ordered in such a manner that caring is delivered as a set of sequential processes (sub concepts) that are created by the nurse's own philosophical attitude (maintaining belief), understanding (knowing), verbal and nonverbal massages conveyed to the client (being with), therapeutic actions (doing for and enabling), and the consequences of caring (intended client outcome) (Tomey & Alligood, 2006).

The following concepts are defined within the theory of caring: caring, knowing, being with, doing for, enabling, and maintaining belief. Swanson (as cited in Tomey & Alligood, 2006) said, "Caring is defined as a nurturing way of relating to a valued other toward whom one feels a personal sense of commitment and responsibility. Knowing is striving to understand the meaning of an event in the life of the other, avoiding assumptions, focusing on the person cared for, seeking cues, assessing meticulously, and

engaging both the one caring and the one cared for in the process of knowing. Being with means being emotionally present to the other. It includes being there in person, conveying availability, and sharing feelings without burdening the one cared for. Doing for means to do for others what one would do for self if at all possible, including anticipating needs, comforting, performing skillfully and competently, and protecting the one cared for while preserving his or her dignity. Enabling is facilitating the other's passage through life transitions and unfamiliar events by focusing on the event, informing, explaining, supporting, validating feelings, generating alternatives, thinking things through, and giving feedback. Maintaining belief is sustaining faith in the other's capacity to get through an event or transition and face a future with meaning, believing in other's capacity and holding him or her in high esteem, maintaining a hope-filled attitude, offering realistic optimism, helping to find meaning, and standing by the one cared for no matter what the situation" (p. 764).

The major relationship within Swanson's Theory of Caring is that between the nurse and the client, the caring relationship. Swanson claims that knowing, being with, doing for, enabling, and maintaining belief are essential components to the nurse-client relationship. This is the obvious relationship. The implied relationships within the theory are those between the client and their health, the client and their environment, and health and the environment, and nursing, health, client, and environment.

The relationship between the nurse and the client includes all of the concepts within the theory. The relationships between client and the environment, client and their health, and health and the environment do not include all of the concepts defined within the theory. Some concepts are included in multiple relationships, such as the concept of

caring is included in the relationship among the four different assumptions of the theory, nursing, person, health, and environment. There is not a hierarchy of relationships described or implied within the theory of caring. The relationship between the nurse and the client creates meaning and understanding of the concept of caring. Caring is a nurturing way of relating to a valued other (the client) toward whom one (the nurse) feels a personal sense of commitment and responsibility (Tomey & Alligood, 2006). The relationships within the theory create meaning and understanding by describing, explaining, and predicting. They describe the processes, which must take place for a caring relationship to exist, explain the underlying four main phenomena of concern to the nursing discipline, and predict the outcome of client well being by means of enhanced comfort and accelerated healing. The nurse-client relationship is directional. The direction it takes is toward the desired outcome of client well being, as illustrated in Dr. Swanson's depiction of The Structure of Caring.

The implied relationships listed above among the phenomena of concern to the nursing domain are not illustrated within the theory. They are implied relationships one may derive from reading the assumptions Swanson defined. These relationships are multi-directional and all encompassing. Each of the phenomena relates to the other in some way, but not in one direction.

The following assumptions underlie the theory: nursing, person, health, and environment. These assumptions made explicit by Swanson are about the four main phenomena of concern to the nursing discipline (Tomey & Alligood, 2006). Swanson has defined the phenomena implicitly.

Swanson (as cited in Tomey & Alligood, 2006) defines nursing as "informed caring for the well being of others. She asserts that the nursing discipline is informed by empirical knowledge from nursing and other related disciplines, as well as "ethical, personal and aesthetic knowledge derived from the humanities, clinical expertise, and personal and societal values and expectations" (p. 766).

Swanson (as cited in Tomey & Alligood, 2006) defines person as "unique beings who are in the midst of becoming and whose wholeness is made manifest in thoughts, feelings, and behaviors. The life experiences of each individual are influenced by a complex interplay of a genetic heritage, spiritual endowment and the capacity to exercise free will" (p. 766). Swanson views persons as dynamic, growing, self-reflecting, yearning to be connected with others, and spiritual beings. Swanson (as cited in Tomey & Alligood, 2006) "Spiritual endowment connects each being to an eternal and universal source of goodness, mystery, life, creativity, and serenity. The spiritual endowment may be a soul, higher power/Holy Spirit, positive energy, or, simply grace. Free will equates with choice and the capacity to decide how to act when confronted with a range of possibilities" (p. 766).

Swanson noted that limitations might prevent individuals from exercising free will, such as race, class, gender, or access to care. She also noted that nurses do not only serve people as individuals, but also families, groups, and societies. Therefore, nurses should take on leadership roles in fighting for human rights, equal access to health care, and other humanitarian causes. Swanson (as cited in Tomey & Alligood, 2006) "Lastly, when nurses think about the other to whom they direct their caring, they also need to think of self and other nurses and their care as that cared-for other" (p. 766).

Swanson (as cited in Tomey & Alligood, 2006) states that to experience health and well-being is "to live the subjective, meaning-filled experience of wholeness. Wholeness involves a sense of integration and becoming wherein all facets of being are free to be expressed. The facets of being include the many selves that make us a human: our spirituality, thoughts, feelings, intelligence, creativity, relatedness, femininity, masculinity, and sexuality, to name just a few" (p. 766).

Swanson (as cited in Tomey & Alligood, 2006) sees reestablishing well being as a complex process of curing and healing that includes "releasing inner pain, establishing new meanings, restoring integration, and emerging into a sense of renewed wholeness" (p. 766-767).

Swanson (as cited in Tomey & Alligood, 2006) defines environment in relationship to nursing is "any context that influences or is influenced by the designated client. There are many kinds of influences on environment, such as cultural, social, biophysical, political, and economic realms, to name only a few" (p. 777). Swanson also feels that the terms person-client and environment in nursing may be viewed interchangeably (Tomey & Alligood, 2006).

The information presented in this project is designed to aid nurses in assisting individuals to have a speedy and effective recovery after critical illness. By following the framework set forth by Kristen Swanson, one can more effectively do so.

Purpose of the Study

The purpose of this study is to examine the literature in the realm of nursing for existing studies in the field of resilience and length of stay in the intensive care unit. This literature review is designed to see if a significant correlation between one's resilience

level and the speed of their recovery after critical illness has been shown to exist. The study of resilience is not only aimed at the patient, but also the family.

Research Statement

The participant's speed of recovery after critical illness is related to a score on the Resilience Scale. It is this researcher's belief that by expanding upon the variables that exist in a critical care admission, hospitals and care providers will better be able to care for their patients. A relationship between a patient's level of resilience and length of stay in the ICU may in fact be present.

The current lack of adequate resources to address the psychological difficulties engendered by traumatic experiences (Courtois & Gold, 2009) essentially paves the way for this review of literature. The speed of recovery after critical illness is important because much research has been conducted regarding increased morbidity and mortality with increased length of stay in the intensive care unit. Exploring the reasons for speedy recovery could help staff members to facilitate a faster recovery in their patients. Overall, improving patient outcomes is the sole purpose of this study.

Research Variables

The following is a list of the variables identified in this study.

Independent variable: The resilience score as identified upon completion of the "Resilience Scale" by Waginald and Young is the independent variable.

Dependent variable: The dependent variable is the speed of recovery after critical illness.

Intervening variables: The intervening variables include the patient's age, comorbidities, diagnosis or injury severity, quality of care, and family support.

Definitions of Terms

The following is a list of definitions that are found in this research study.

Resilience: The dynamic process that individuals exhibit positive behavior adaptation when they encounter significant adversity, illness, or trauma (Jacelon, 1997).

Speed of recovery: Time measured in days from admission to the intensive care unit to discharge from the ICU.

Critical illness: Illness or injury which requires patient to be admitted to the intensive care unit.

Significant correlation: Correlation which is deemed as statistically significant (Burns & Grove, 2005).

Operational Definitions:

The following is a list of operational definitions that are found in this research as defined by the researcher:

Resilience: A score on the Resilience Scale.

Length of stay: The number of days the participant is in the intensive care unit starting at admission, ending with dismissal, as evidenced by the medical record.

Limitations

Limitations of the review of literature will be discussed in this section. A review of literature reveals that very little research has been conducted on the correlation between resilience and speed of recovery after critical illness. Therefore, little evidence is available to show that the correlation actually exists. This researcher aims to lay the groundwork for future researchers that wish to explore the relationship between the psychological aspects of critical care nursing.

Summary

This study aims to look specifically at the relationship between resilience and speed of recovery after critical illness. An extensive literature review is done to provide future researchers with the necessary information that is already available on the subject. The following chapter is an exhaustive review of literature pertaining to this study.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Increasing length of stay in the intensive care unit is a real problem in the United States today. These longer stays put the patients at risk for developing complications secondary to the reason they were admitted in the first place. By taking a look at previous research on decreasing length of stays, increasing rehabilitation potential and time, and resilience, evidence-based practice can aid in improving patient outcomes and lessening hospital costs.

This researcher examined an extensive body of literature relating to resilience and recovery after critical illness. Several of the studies were scanned for content. The content was aligned in such a way as to provide the reader with a more accurate portrayal of the research that has been done thus far on the subject matter.

Length of Stay in ICU

Long stays in the intensive care unit are associated with high costs and burdens on patients and patients' families and in turn society at large (Gruenberg et al, 2006). In the United States, intensive care accounts for 30% of hospital expenses, with an annual cost of $180 billion (Halter et al, 2006). Although the total number of hospitals, hospital beds, and inpatient days decreased during the years 1985 to 2000, the number of critical care beds and days in critical care increased dramatically during the same period (Gruenberg et al 2006).

Stricker et al found that whereas only 11% of patients admitted to the ICU stay for more than 7 days, these patients used more than 50% of ICU resources (Gruenberg et

al, 2006). Furthermore, in several studies the mortality of patients with ICU admissions lasting 14 days or longer was estimated to be nearly 50% (Gruenberg et al, 2006). Fakhry et al found that 70% of patients with stays longer than 2 weeks reported less than 50% functional recovery (Gruenberg et al, 2006).

Generally, a primary goal in intensive care is to decrease length of stay when medically appropriate in order to both improve the quality of medical care and reduce cost and excess use of resources (Gruenberg et al, 2006). The continuing escalation of healthcare costs fuels the desire of providers and consumers to undertake only those treatments that have benefit when considering evidence-based care (Halter et al, 2006). The type and severity of patients' illnesses can directly affect the length of ICU stays (Gruenberg et al, 2006). Although mortality and length of stay in the ICU increase with age, outcome is mainly related to the severity of illness; age by itself may not be a reliable predictor of outcome after admission to the ICU (Gruenberg et al, 2006). Race and sex are also not correlated with increased length of stay (Gruenberg et al, 2006).

There are many complications associated with increased length of stay in the ICU other than increased mortality. The major risk factor for the development of contractures was length of ICU stay, and the odds of acquiring a contracture increased markedly between weeks two and eight in the ICU (Herridge, 2008). There is robust literature from many investigators in different countries and involving diverse patient populations that demonstrates important impairments in health-related quality of life among patients who have had a critical illness (Herridge, 2008). These decrements in quality of life may persist for years and may be irreversible in some cases (Herridge, 2008). Contractures acquired during a prolonged ICU stay are another important contributor to decreased

quality of life (Herridge, 2008). Large joint contractures can now be added to the growing list of physical and neuropsychological sequelae that follow critical illness (Herridge, 2008). There appears to be significant potential for harm arising from the current ICU culture of patient immobility and an often excessive or unnecessary use of sedation (Herridge, 2008). ICU stays may contribute to the inability of patients to regain premorbid functional status (Herridge, 2008). The current literature supports that patients in critical care settings may be mobilized without harm, even while receiving mechanical ventilation, and that wakefulness is safe and may be associated with improved neuropsychological outcomes (Herridge, 2008). These studies show that patients need to be awake, cooperative, and mobile. This is one way for nurses to encourage patient resilience during critical illness.

We have a responsibility to understand patients' innate resilience following critical illness and their ability to return to an acceptable quality of life and functional independence (Herridge, 2008). Detailed knowledge of these outcomes may inform decisions to prioritize certain vulnerable patient subsets for early mobilization and rehabilitation during their ICU stay, which may have practical importance in the context of limited allied health resources (Herridge, 2008). The physical and neuropsychological consequences of an ICU stay represent a burgeoning public health issue that has not been adequately addressed. As our population ages, there will be many patients discharged fro the ICU with disability (Herridge, 2008). Let us now invest in optimizing outcomes for the survivors and caregivers of this costly and arduous intervention of critical care by promoting patient resilience.

Gruenberg et al (2006) posit that factors affecting length of stay in the ICU can usefully be categorized as institutional, medical, social, and psychological. Further research on innovations to reduce length of stay should address the impact of each of these categories. This literature review focuses on the psychological aspects of reducing recovery time after critical illness.

Resilience

The ability of some people to weather adversity is of great interest to nurses (Jacelon, 2007). The central element in the study of resilience lies in the power of recovery and in the ability to return once again to those patterns of adaptation and competence that characterized the individual prior to the pre-stressed period (Jacelon, 2007). Research on the concept of resilience is a fairly new process. In the 1980's, studies regarding children with schizophrenic mothers were exploring the concept of resilience. Researchers wanted to find the elements that lead some of these children to succumb to the adversity and others to succeed in school and society. Emmy Werner was one of the first scientists to conduct studies of resilience. She researched children in Hawaii with alcoholic or mentally ill parents. She found that some of the children had violent tendencies and tended to fail in school, while others excelled and succeeded. Those that were survivors are the epitome of the concept of resilience.

In 1997 Polk developed a middle range theory of resilience. Rew and Horner developed the Youth Resilience Framework in 2003. These developments are all recent and much more work is still in progress.

This researcher aimed to attain a better understanding of the concept of resilience at the completion of the analysis. Within this analysis theoretical and operational

definitions of the term were constructed. Measurement tools used to assess where one falls on the continuum of resilience were evaluated. The researcher also related the term of resilience to the field of nursing.

Resilience was defined by Wikipedia, the free on-line encyclopedia as, "the dynamic process that individuals exhibit positive behavioral adaptation when they encounter significant adversity or trauma" (n.d.). This definition was used as this researcher's preliminary definition.

Other definitions such as, "the property of a material to absorb energy when in is deformed elastically and then, upon unloading to have the energy recovered. In other words, it is the maximum energy per volume that can be elastically stored. It is represented by the area under the curve in the elastic region of the Stress-Strain diagram," (Wikipedia, n.d.) and, "the ability to rebound or spring back, " (Wikipedia, n.d.) are examples of resilience used in different contexts.

A literature review was conducted using a variety of sources from multiple facets of study including nursing, psychology, environmental science, and physics. On-line dictionaries, internet search engines, and on-line databases were explored. This student found that nursing literature regarding the concept of resilience was primarily focused in two directions; studies regarding the resilience of nursing staff, and studies of the resilience of patients ranging from children to the geriatric population. Within these sources resilience was referred to as a personality trait, a process, a phenomenon, or an outcome.

As cited by Jacelon, "Resilience as a trait was defined by Wagnild and Young (1993) as a personality characteristic that moderated the negative effects of stress and

promotes adaptation," (2007). Resilience is an important concept for nurses as we endeavor to assist individuals to meet the challenges of living with illness and ageing (Jacelon, 2007). Jacelon also stated in her article The Trait and Process of Resilience, "Researchers from many disciplines in both the social and health sciences have investigated resilience of individuals throughout the life cycle in a variety of situations related to health as well as other life events, " (2007).

Mayo Clinic defined resilience as, "adapting to stress and adversity," (n.d.) Resilience typically refers to the tendency to spring back, rebound, or recoil and involves the capacity to respond and endure, or develop and master in spite of life stressors or adversity (Mandleco & Peery, 2000). Resilient individuals successfully adapt and rapidly adjust to major life events or to chronic stressors (Mandleco & Peery, 2000). Mandleco and Peery proposed an organizational framework for conceptualizing resilience in children based on relevant literature that clarifies, differentiates, organized, and elaborates on pertinent factors associated with resilience in children (2000).

Hardy, Concato, and Gill found that functional and psychosocial factors are associated with high resilience while studying the resilience of community dwelling older persons. Lawford and Eiser explored the links between the concepts of quality of life and resilience by separately defining each concept, then relating the need for using resilience research in constructing a theoretical model of quality of life.

Resilience was also studied in relation to families. Although resilience as a concept emerged from research whose focus was on successful individual development, the relevant concepts have recently been adapted and applied to the study of family functioning (Holroyd, 2005). Holroyd wrote a commentary on the resilience of Korean

families with a chronically ill child. A family as a support system also was studied as a prerequisite or characteristic of resilience. Enns, Reddon, and McDonald conducted a study looking at the need for family support to facilitate the process of resilience in people admitted to a psychiatric unit.

The resilience of staff members in the nursing profession is of great interest in the current nursing literature available. Nursing is a challenging profession. It requires individuals who are able to overcome, adapt, and endure. The trait of resilience is one that can be taught. Promoting resilience in clinicians has the potential to reduce the risk of burnout and hence staff attrition, promoting staff retention and occupational mental health (Edward, 2005). Nichols discussed the importance of resilience in nursing staff that are employed in palliative care realms. She addressed the difficulties of an aging workforce, specialization, and bereavement.

New nurses seem unable to find a means of flourishing professionally in acute care practice and, consequently, exit far earlier than expected (Hodges, Keeley, and Grier, 2004). Resilience is an essential element for practice in a chaotic practice world (Hodges, Keeley, and Grier, 2004).

The term resilience is used not only in nursing or psychology. It is also used in the field of engineering, environmental science, and physics. Building structures that are able to withstand the forces of nature is of interest to the field of engineering. The study of resilient ecosystems that can withstand shocks and rebuild itself when necessary comes from the field of environmental science.

Mapping the concept of resilience can be done by laying out the antecedents, defining characteristics, and consequences of the term. One can then get a more accurate picture of how the concept is constructed.

Antecedents to the concept of resilience are adverse life situations. Some examples of such are: trauma, divorce, actual or perceived loss, illness, disease, poverty, low socioeconomic status, and dysfunctional family situations. Anything an individual has to overcome in order to succeed is an antecedent to the concept of resilience.

Defining characteristics of the term resilience can be seen as traits or as a process. This student identified best with the example set out by Project Resilience in 1999. They constructed a Resiliency Mandala, which was divided into rings and wedges. Each wedge represents a characteristic of resilience. Each concentric circle represents a developmental stage of each characteristic; childhood, adolescence, and adulthood, with the characteristic as the outermost layer. The inner circle is self. Insight, independence, relationships, initiative, humor, creativity, and mortality are all defining characteristics of resilience. All of these characteristics come together to form self. A good sense of self is the most important characteristic one must possess to be resilient in the face of adversity.

Consequences of resilience are positive in nature. Good outcomes regardless of high-risk status, constant competence under stress, recovery from trauma, inner strength, success, and happiness are all consequences of resilience. Those individuals referred to as resilient are ultimately survivors.

This student's resulting theoretical definition is as follows; resilience is the ability to adapt well to stress, adversity, trauma, or tragedy, while maintaining overall stability

and healthy levels of psychological and physical functioning in the face of disruption or chaos.

Multiple tools have been constructed to measure resiliency. Some examples of measuring tools are: Baruth Protective Factors Inventory, Connor-Davidson Resilience Scale, Resilience Scale for Adults, Adolescent Resilience Scale, Brief-Resilient Coping Scale, and the Resilience Scale. There are also measuring tools available to the public on-line so one can measure there own resilience. These are quizzes one takes that are scored at completion. The site provides a result for the individual which gives them an idea of where they fall on the continuum of resilience. Some examples of the on-line quizzes can be viewed at http://www.resiliencycenter.com and http://discoveryhealth.queendom.com/cgi-bin/tests/short_test.cgi.

The measurement of resilience is not an exact science. It is a subjective measurement that may continually change depending on the current circumstances of an individual. Ahern, Kiehl, Sole, and Byers conducted a comparative study of some resilience measuring tools. They compared the theoretical bases on which the tools were constructed, target populations, study settings, study type and designs, length of follow-up, missing data, number of items, psychometric properties, reliability, validity, advantages, disadvantages, and applications for the use of the measurement instruments. Upon completion of their study, they concluded the Resilience Scale was most applicable to all ages and ethnic groups.

The student also found that the Resilience Scale most clearly measures resilience as she theoretically defined it.

The Resilience Scale is a 25-item scale using a 7-point rating (1-7) Likert scale. It has two factors, personal competence and acceptance of self and life, which measure the construct of resilience. The scale was created by Wagnild & Young in 1993. Although originally tested with adult subjects, numerous studies have validated that the scale has worked well with samples of all ages and ethnic groups (Ahern, Kiehl, et al, 2006).

Once one has taken the test, combine the scores; higher score equals higher resilience.

The concept of resilience is applicable to all areas of nursing. In the student's area of critical care nursing, it is especially applicable. Patients admitted to the intensive care unit are in a crisis of some sort, whether it be trauma, acute exacerbation of chronic illness, or acute illness. Most of these patients have been near death at some point, and may have died without medical intervention. It is very interesting as a nurse to observe the patients as time progresses to see if they will recover and to what extent they will recover. The concept of resilience is key to decide if the individuals will recover. Nurses and doctors can only take a patient's level of health to a certain point. Past that point, it is up to the patient to become a partner in their own recovery, and at some point to take over.

Resilience is a trait that can be taught and facilitated. It is the role of the nurse to assist clients in developing this trait; or if they already possess such qualities, it is the role of the nurse to facilitate in the process. It is also the role of the nurse to properly assess individuals' level of resilience and to assist patients in overcoming illness and situational crisis by promoting behaviors which are known to encourage resilience.

It is the student's belief that the continued study of resilience is important in the field of nursing. Continued research can be done to discover further implications for practice. It is also important to further examine what internal and external factors facilitate the process, trait, or phenomenon of resilience. The concept of resilience is so new to nursing research, it is the student's belief there is still much more knowledge to be gained regarding the subject.

Mayo Clinic's website defined resilience as, "adapting to stress and adversity," (n.d.) Resilience typically refers to the tendency to spring back, rebound, or recoil and involves the capacity to respond and endure, or develop and master in spite of life stressors or adversity (Mandleco & Peery, 2000). Resilient individuals successfully adapt and rapidly adjust to major life events or to chronic stressors (Mandleco & Peery, 2000). Mandleco and Peery (2000) also proposed an organizational framework for conceptualizing resilience in children based on relevant literature that clarifies, differentiates, organizes, and elaborates on pertinent factors associated with resilience in children.

Hardy, Concato, and Gill found that functional and psychosocial factors are associated with high resilience while studying the resilience of community dwelling older persons. Lawford and Eiser explored the links between the concepts of quality of life and resilience by separately defining each concept, then relating the need for using resilience research in constructing a theoretical model of quality of life.

One can map the concept of resilience by laying out the antecedents, defining characteristics, and consequences of the term. One can then get a more accurate picture of how the concept is constructed.

Antecedents to the concept of resilience are adverse life situations. Some examples of such are: trauma, divorce, actual or perceived loss, illness, disease, poverty, low socioeconomic status, and dysfunctional family situations. Anything an individual has to overcome in order to succeed is an antecedent to the concept of resilience.

Defining characteristics of the term resilience can be seen as traits or as a process. This student identified best with the example set out by Project Resilience in 1999. They constructed a Resiliency Mandala, which was divided into rings and wedges. Each wedge represents a characteristic of resilience. Each concentric circle represents a developmental stage of each characteristic; childhood, adolescence, and adulthood, with the characteristic as the outermost layer. The inner circle is self. Insight, independence, relationships, initiative, humor, creativity, and mortality are all defining characteristics of resilience. All of these characteristics come together to form self. A good sense of self is the most important characteristic one must possess to be resilient in the face of adversity.

Consequences of resilience are positive in nature. Good outcomes regardless of high-risk status, constant competence under stress, recovery from trauma, inner strength, success, and happiness are all consequences of resilience. Those individuals referred to as resilient are ultimately survivors.

Summary

There is a need for further research on the psychological aspects that influence patient lengths of stay in intensive care units. Resilience is a trait or process that if captured or facilitated by nurses could have the potential to improve patient outcomes. The following chapter is an exhaustive discussion of the implications for advanced practice nursing regarding resilience and recovery after critical illness or injury.

CHAPTER III

IMPLICATIONS TO ADVANCED PRACTICE NURSING

This chapter will include a discussion of the implications the study of resilience and recovery after critical illness has to advanced practice nursing. It will also include subject matter regarding an appropriate measurement tool used in the assessment of patient resilience.

Benefits of Decreasing Length of Stay in ICU

Decreasing length of stay in the ICU for critically ill patients is of utmost importance. By doing so, nurses can decrease mortality and morbidity, increase post-illness functional capacity, and decrease complications associated with intensive care stays. This is a task which is multifaceted. It includes cooperation from the physicians, advanced practice nurses and other mid-level practitioners, nurses, and ancillary staff, including physical therapist, occupational therapist, speech pathologists, and respiratory care practitioners.

By focusing on patient-centered outcomes, advanced practice nurses may improve patient care tremendously. Advanced nursing practitioners have the ability to really get to know their patients, which further enables them to focus on their strengths and recruit help in areas of weakness. By assessing patient resilience upon entering the intensive care unit, practitioners can enhance plans of care to include interventions in which involve those areas of strength. In areas of weakness regarding resilience, practitioners may employ the help of external sources. For example, if a patient does not have a good social support system, the practitioner may choose to involve social services to aid in building an adequate support system for the patient for both during and after the intensive

care unit stay. Resources of individual family members, of the family unit, and of the community can already exist or can be developed and used for management of specific family demands (Leske & Jiricka, 1998). Knowing the patients' and family's previous level of functioning and resilience can aid in developing a more complete and effective plan of care.

The central element in the study of resilience lies in the power of recovery and in the ability to return once again to those patterns of adaptation and competence that characterized the individual prior to the pre-stress period (Jacelon, 1997). Flach (1930, 1988) described the dynamic process of resilience as a system which can be learned at any point in life (Jacelon, 1997). By understanding the construct of resilience, advanced practice nurses may teach and promote behaviors to enhance patient resilience, which in turn will improve patient outcomes. Fine (1991), in her work with physically disabled individuals, found that personal perceptions and responses to stressful life events are crucial elements of survival, recovery, and rehabilitation, often transcending the reality of the situation or the interventions of others (Jacelon, 1997).

Family in Relationship to Resilience and Critical Illness or Injury

Critical injury or illness is a potential crisis situation for both the injured or ill person and his or her family members (Leske & Jiricka, 1998). The unexpected hospitalization has a significant impact of family members. During this period, families must deal with many stressors, including role changes, financial concerns, uncertain prognosis, isolation from other family members, dramatic disruption in daily routines, and unfamiliar critical care environments (Leske & Jiricka, 1998).

Challenges in forming and maintaining relationships with other family members and with healthcare providers are the most frequently cited family demands (Leske & Jiricka, 1998). Critical injury interferes with family structure and functions and challenges the family's established patterns of behavior. If the event is not handled optimally, the result may be prolonged physiological and psychological instability of family members, a situation that may affect patients' outcomes (Leske & Jiricka, 1998).

Family hardiness decreases the demands placed on family members and is a key variable in influencing family adaptation (Leske & Jiricka, 1998). The terms hardiness and resilience are often used interchangeably. Hardiness positively influences health outcomes of stressful situations, the manner in which resources are used, and use of coping behaviors that strengthen family relationships (Leske & Jiricka, 1998).

Family coping refers to strategies, patterns, and behaviors designed to maintain and/or strengthen the family, maintain the emotional stability and well-being of family members, obtain and/or use family and community resources to manage the situation, and initiate efforts to resolve the family hardships created by the stressor (Leske & Jiricka, 1998). Emotional reactions of family members also directly influence patients' coping responses (Leske & Jiricka, 1998). Some researchers have found a significant relationship between family coping and beneficial outcomes in patients (Leske & Jiricka, 1998).

Understanding the medical condition and having information about the patient's progress are required for appropriate family problem solving (Leske & Jiricka, 1998). Nurse practitioners can provide family-focused interventions that promote family adaptation and positively influence patient outcomes.

Research Tool

The measurement of resilience is not an exact science. It is a subjective measurement that may continually change depending on the current circumstances of an individual. Ahern, Kiehl, Sole, and Byers conducted a comparative study of some resilience measuring tools. They compared the theoretical bases on which the tools were constructed, target populations, study settings, study type and designs, length of follow-up, missing data, number of items, psychometric properties, reliability, validity, advantages, disadvantages, and applications for the use of the measurement instruments. Upon completion of their study, they concluded the Resilience Scale was most applicable to all ages and ethnic groups.

The researcher also found that the Resilience Scale most clearly measures resilience as she theoretically defined it.

> The Resilience Scale is a 25-item scale using a 7-point rating (1-7) likert scale. It has two factors, personal competence and acceptance of self and life, which measure the construct of resilience. Wagnild & Young created the scale in 1993. Although originally tested with adult subjects, numerous studies have validated that the scale has worked well with samples of all ages and ethnic groups (Ahern, Kiehl, et al, 2006).

According to (Ahern, Kiehl, et al, 2006), once one has taken the test, the scores are combined. Higher score correlates with a higher level of resilience.

Summary

Intensive care is a very complex process which employs evidence-based practice to improve patient outcomes. One thing that frequently is forgotten in the intensive care

unit is psychological well-being. Service providers in the medical and rehabilitation communities not only need to understand the medical implications of recovery, but also the psychosocial implications of recovery (Ferguson, Richie, & Gomez, 2004). This is where family nurse practitioners can have a big role. By employing family assessment skills, the use of Kristen Swanson's Theory of Caring, and strong patient-centered care, nurse practitioners can improve patient outcomes after critical illness or injury.

If health care providers address the psychosocial needs in addition to the physical needs, the healing process can be more speedy and effective, leading to a successful recovery. Ryff and Singer (2000) have emphasized the linkage between psychosocial factors and vulnerability to disease and have suggested applying psychosocial therapies to prevent, treat, and rehabilitate disease (Chann & Wong, 2006).

Long stays in the intensive care unit are associated with high costs and burdens on patients and patients' families and in turn affect society at large (Gruenberg, 2006). It is important to continue research to look for more ways to shorten hospital stays, in particular ICU, to improve patient outcomes as a whole. The study of resilience is an important concept for nurses as they endeavor to assist individuals to meet the challenges of living with illness (Jacelon, 1997). By assessing and promoting patient resilience and including the family in the assessment and plan of care, advanced nursing practitioners may provide better patient care, and in turn obtain better end results for patients.

Chapter IV

CONCLUSION

This chapter will include a summary of what this researcher has learned by conducting this extensive literature review about resilience and speed of recovery after critical illness. It will also include a comprehensive table with a portion of the research articles used as references in this literature review. This researcher has learned a breadth of knowledge about the personality construct of resilience and factors surrounding increased lengths of stay in the intensive care unit. The following provides a summary of reviewed studies as well as recommendations to the advanced practice nursing community regarding continuation of the study of resilience and speed of recovery after critical illness.

Summary of Reviewed Studies

The following table serves as a summary of the research studies that have been conducted in regards to resilience and speed of recovery after critical illness. It helps to show the reader that little to no research has been conducted on this subject matter. It also further proves that research needs to be done in the future to provide more substantial evidence that the psychological aspect of resilience should play a role in the care of critically ill patients. Many studies have been done regarding resilience and family coping, factors affecting length of stay in the intensive care unit, family coping with babies in the neonatal intensive care unit, costs associated with stays in the intensive care unit, etc. This researcher was unable to identify a study regarding the correlation between resilience and speed of recovery after critical illness. The following table is a visual aid that shows a synopsis of the research articles used in this literature review.

Table 1 Summary of Reviewed Studies

Reference	Pupose	Population	Findings	Limitations	Significance
Gilespie et al, 2007	To identify current theoretical and operational definitions of resilience and to identify and describe defining attributes of resilience	N/A, this was a literature review	A conceptual model of resilience postulates that the constructs of self-efficacy, hope and coping are defining attributes of resilience	The level of theory is influenced by previous conceptualisations which may no longer be applicable, thus the findings from this form of analysis are always tentative	Further theoretical clarification of the ways in which individuals transform stressful experiences into opportunities for increased growth may contribute to nursing knowledge in the form of better understanding of the resilience concept in the context of identifying strategies that build it
Boulanger et al, 2007	To estimate the prevalence of serious blunt and penetrating trauma-related hemorrhage among patients admitted to U.S. trauma centers along with excess in-hospital mortality, length of hospital stay,	65,750 patients with blunt trauma and 12,992 patients with penetrating trauma	In both blunt and penetrating trauma cases, serious hemorrhage is significantly associated with excess mortality, longer hospital stays, and higher costs	Patients with blunt versus penetrating trauma were evaluated separately, because the nature of the injury and treatment practices were expected to differ for these two trauma types	The first study to evaluate the cost consequences of trauma-related hemorrhage using the NTDB, although other studies have undertaken economic analyses of other aspects of

Reference	Pupose	Population	Findings	Limitations	Significance
	and inpatient costs				trauma using NTDB data
Pinelli et al, 1997	To determine the relationship of family coping and family resources with family adjustment and parental stress in the acute phase of the neonatal intensive care unit (NICU) experience	36-bed tertiary level NICU that is the referral center for a section of a province in central Canada from 124 mother and father pairs	Adequate family resources were more strongly related to positive family adjustment and parental stress than either family coping or being a first-time parent	The nature of this study made data collection difficult and possibly inaccurate	The experience of having an infant in the NICU is stressful for parents and it is more stressful for mothers than for fathers
Board et al, 2000	To critically review literature about pediatric intensive care units and to link those studies to a theoretical framework: McCubbin and McCubbin's resiliency model of family stress, adjustment, and adaptation	N/A, this is a literature review	Further research is warranted on families of various ethnic backgrounds; fathers and their low participation rates; mother and father comparisons; replication of interventional research with larger and more diverse samples; exploratory and prospective, longitudinal research; and research with children in pediatric intensive care	None were listed	An updated synthesis of the literature is essential to prevent unnecessary duplication of research

Reference	Pupose	Population	Findings	Limitations	Significance
			units.		
Leske et al, 1998	To examine family demands (prior stressors and severity of patients' injuries) and family strengths and capabilities (hardiness, resources, coping, and problem-solving communication) associated with outcomes of family well-being and adaptation	A convenience sample of family members (N = 51) of adult patients participated within the first 2 days of critical injury	Increases in family demands were significantly related to decreases in family strengths and family adaptation	Self-report nature of the questionnaires used in the study makes response bias possible	Increases in family demands seem to be an important indicator of the amount of assistance a family may need. Interventions that help mobilize family strengths, such as problem-solving communication, may be effective in promoting the adaptation of families of critically injured patients
Hamner 1994	To examine the relationships of severity of illness, perceived control over visitation (PCV), state anxiety, hardiness, and length of stay (LOS)	Convenience sample of 60 medical-surgical cardiovascular ICU patients	Attention to control over visitation may decrease patient anxiety. Flexibility with visitation may be needed to maximize perceptions of control. Psychosocial considerations should not be considered secondary in the care of the ICU	The nature of the study and data collection process were limitations	Results of this study add to the explanation of LOS in ICU cardiovascular patients and have implications for practice

Reference	Pupose	Population	Findings	Limitations	Significance
			patient		

Recommendations to Advanced Practice Nursing

After completing this intensive review of literature, it is this researcher's recommendation that further research studies are conducted specifically regarding the relationship between resilience and length of stay in the intensive care unit. Few studies have addressed this matter specifically. Many studies have been conducted on resilience, as well as length of stay in the intensive care unit, but not how the two are related.

Once research, such as described above, has been completed, if found to be statistically significant, it would then be this researcher's recommendation for providers of patients with at-risk diagnoses of being critically ill to administer testing to determine resilience levels. If a patient is found to have a low resilience score, it would be this researcher's recommendation to provide some sort of resilience training for the patient. This could serve as a preventive health care intervention for patients with diagnoses such as diabetes, hypertension, COPD, cancer, etc. that increase the likelihood that patients will at some time have an admission to the ICU.

Another recommendation is to teach ICU nurses and practitioners that care for patients in the ICU setting appropriate interventions to facilitate and bolster resilient-type behavior. This could be done in a work-shop setting. All of these recommendations combined could potentially decrease length of stay in the ICU and improve patient outcomes as a whole.

Summary

The study of critical care nursing is an ever-changing, ever-evolving practice. Frequent innovations constantly help to improve upon the care that is provided to patients in the ICU. Multiple factors affect the length of stay in the intensive care unit. One of these factors is psychological health. If health care providers address the psychosocial needs in addition to the physical needs, the healing process can be more speedy and effective, leading to a successful recovery. A shorter the stay in the intensive care unit has been proven to decrease morbidity and mortality.

Resilience, as defined by Wikipedia, the free on-line encyclopedia, is "the dynamic process that individuals exhibit positive behavioral adaptation when they encounter significant adversity or trauma" (n.d.). Admission to the intensive care unit for most patients is a traumatic event. How a person responds to trauma can partially be predicted by their level of resilience. Being able to determine a patient's level of resilience prior to or upon admission to the ICU would be a valuable addition to the plan of care for an ICU patient. Many tools exist to measure resilience, one of which was outlined in the previous chapter of this literature review. By utilizing these tools advanced practice nurses can provide superior service to their patients. After all, holistic care means treating the whole patient, physically, mentally, and spiritually.

This literature review has lead this researcher to the conclusion that little to no research has been conducted specifically on the construct of resilience and its relationship to speed of recovery after critical illness or injury. The previous chapters include an

extensive review of literature, in depth definitions of resilience, factors affecting length of stay in the intensive care units, a theoretical framework with which to build upon, along with recommendations to advanced practice nurses for further research on this subject matter. By conducting this review of literature, this researcher has improved upon her skills for data collection, critiquing articles, evaluating statistical significance, and compiling research into a literary article for other researchers to read and build upon. This has been a very valuable experience and has stimulated this researcher's interest in further studies. It is the responsibility of the advanced practice nurse to continue educating herself for the remainder of her career, so she may provide the best care possible to her patient population.

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