Stroke recovery is a complex phenomenon involving a person whose world was suddenly changed as a new, unexplored world evolves. In this new world, the stroke survivor faces life-altering changes. Unlike other disease processes that may affect only a specific organ or organ systems, the stroke survivor must cope with physical, functional, and cognitive changes. These changes to their physical self also affect their self-concept, health perception, role identity, and relationships. Many health professionals assist the stroke survivor in coping with these. The sum of their efforts leads, it is hoped, to a meaningful recovery for stroke survivors and their families.

Research studies often focus on one aspect of stroke recovery and its relationship to stroke survivor outcomes. A comprehensive holistic explanation of the personal processes of stroke recovery is lacking. The purpose of this article is to identify and describe the domains of stroke recovery as synthesized from the literature. Literature from the disciplines of medicine, nursing, physical therapy, occupational therapy, and speech/language pathology is included. The complexity of stroke survivorship is revealed with three domains of stroke recovery identified: physical, psychological, and social. Two principal components comprise each domain: Cognition and function comprise the physical domain, self-concept and health perception the psychological domain, and role and relationships the social domain (Fig 1). Opportunities abound for multifaceted, interdisciplinary research related to stroke rehabilitation and stroke survivor recovery.

**Stroke as a Disease Process**

Stroke was first cataloged as apoplexy by Hippocrates more than 2,000 years ago (McHenry, 1969). Although not knowing the pathophysiology of apoplexy, he accurately described the presenting symptoms of stroke as sudden onset of paralysis and change in health. In 1928, apoplexy became defined as a cerebrovascular accident or CVA and was differentiated into hemorrhagic or ischemic. Over time, the term CVA has been replaced with stroke because the disruption of blood flow to the brain is not an accident, but is caused by diseases of the circulatory system (Adams, del Zoppo, & von Kummer, 1998). During the “Decade of the Brain” in the 1990s (Jones & Mendell, 1999), stroke began to receive national attention in both the professional healthcare and public communities. In 1994, Camarata, Heros, and Latchaw presented the concept of “brain attack” to raise awareness that stroke is considered a medical emergency. Their article became the foundation for the Brain Attack Coalition formed in the summer of 1994 (American Association of Neurological Surgeons Neurosurgeon in Action, 1995). In 2003, the formal definition of stroke, “a sudden impairment of brain function, sometimes termed ‘brain attack’ that results from interruption of circulation to one or another part of the brain following either occlusion or hemorrhage of an artery supplying that
area,” was published (U.S. Department of Health and Human Services Centers for Disease Control and Prevention, 2003, p. 15).

Stroke is the third cause of death and a leading cause of serious and long-term disability in the United States (American Heart Association [AHA], 2008). Remarkably, stroke deaths have declined between 1994 and 2004 (AHA, 2008). Yet, the incidence of stroke is increasing as the population ages (Bagg, Pombo, & Hopman, 2002) and the numbers of stroke survivors are increasing as a result of greater availability of acute stroke interventions. Noninstitutionalized stroke survivors increased 60% (from 1.5 million to 2.4 million) between the early 1970s and the early 1990s (American Heart Association [AHA], 2005). It is estimated that there are 5.8 million stroke survivors experiencing functional limitations on a daily basis (AHA, 2008).

The burden of stroke is both financial and personal. The financial burden of having a stroke in 2008 is estimated to be $65.5 billion (Rosamond et al., 2008). Brown et al. (2006) predict that the cost of stroke from 2005 to 2050 will exceed $1.52 trillion for Whites, $313 billion for Hispanics, and $379 billion for Blacks. The loss of earnings will be the greatest contribution to these exorbitant costs. The financial cost of stroke is minimal compared with the personal price. The personal burden of being a stroke survivor includes physical, mental, emotional, and social changes that can be devastating to both the survivor and his or her family (Doswell et al., 2000).

Stroke recovery is a lifelong process that necessitates understanding. The chronic nature of stroke means that we must identify interventions to support stroke survivorship as an unremitting illness. To support the stroke survivor in the ongoing process of recovery, it is important for research to be focused on the factors that contribute to recovery and independence.

Deficits and Rehabilitation

Deficits
The deficits created by stroke affect the survivor’s whole being. The resulting disabilities fall into six areas: (1) cognition, which is the ability to understand, remember, and be aware of deficits (Hartman-Maeir, Soroker, Ring, & Katz, 2002; Larson et al., 2003; McKinney et al., 2002; Patel, Coshall, Rudd, & Wolfe, 2002); (2) function, which refers to the ability to perform basic and/or independent activities of daily living (Ahmed et al., 2003; Bagg et al., 2002; Pettersen, Dahl, & Wyller, 2002; Roth & Lovell, 2003; Studenski, Wallace, Duncan, Rymer, & Lai, 2001); (3) self-concept (Doswell et al., 2000; MacKenzie & Chang, 2002; Moore, Maiocco, Schmidt, Guo, & Estes, 2002; Paul et al., 2005; Ringler, Studenski, Wallace, Reker, & Duncan, 2002); (4) health perception, which is the perceived effects of disease on abilities (Hanger, Fogarty, Wilkinson, & Sainsbury, 2000; Ringler et al., 2002); (5) role change (Hopman & Verner, 2002; MacKenzie & Chang, 2002; Moore et al., 2002; Studenski et al., 2001); and (6) relationships (Alexander, Bugge, & Hagen, 2001; Derosier, Rochette, Noreau, Bravo, & Boutin, 2002; Studenski et al., 2001). Each of these areas has been researched independently or in conjunction with one or two other deficits. Often these research results suggest that progressive decline occurs after rehabilitation (Hilton, 2002; White & Johnstone, 2000), but little research has been conducted to explain the interrelated factors that continue to contribute to recovery.

Stroke Rehabilitation
The goal of rehabilitation is to return the stroke survivor to society with the abilities to function by adapting to stroke deficits that may include deficits in cognition and functional abilities (Bendz, 2003; Burton, 2000; World Health Organization [WHO], 2002). The key concepts of stroke disability include disease (stroke) as cause of physical and neurological symptoms that create impairments that lead to disability and ultimately a handicapped individual (Burton, 2000). The concept of transitioning disability into functional disability is linear in nature and is the ultimate outcome of rehabilitation (WHO, 2002).
Many stroke survivors begin rehabilitation within days after experiencing the event in an effort to regain mobility that will allow them to be functionally safe in their home environment. However, studies have demonstrated the long-term success of rehabilitation for stroke survivors lacks substantial clinical evidence to support its efficacy over time (Alexander et al., 2001; Patel et al., 2002; Pettersen et al., 2002; White & Johnstone, 2000).

Stroke has its greatest physical impact on cognition and physical function. These deficits are the focus of intensive rehabilitation strategies with the goal for the stroke survivor to regain function and cognition or to adjust to their new body. Beyond rehabilitation, these deficits influence the survivor’s self-image and personal sense of being.

**Stroke Recovery Domains**

There are six areas of consistency demonstrated from the evidence. First, only a small percentage (19%) of stroke patients improves and maintains functional abilities 3 years after rehabilitation (Pettersen et al., 2002). Next, those survivors who cannot perform activities of daily living on discharge from rehabilitation demonstrate congruence with both future cognitive and functional decline (Patel et al., 2002). Health perception plays an important role in determining future abilities because a lower perception of well-being is related to lower functional abilities (Hanger et al., 2000; Paul et al., 2005; Ringler et al., 2002). Role change has also been associated with the development of depression (Derosier et al., 2002; Grant, 2004; Li, Wang, & Lin, 2003; Pound, Gompertz, & Ebrahim, 1998) and lowered self-concept (Doswell et al., 2000; Moore et al., 2002). Stress caused by caregiving is an additive factor that contributes to stroke survivor decline (Doswell et al., 2000; Pierce et al., 2004). Finally, several studies have concluded that changes in relationships and lack of social support are significant factors in the perpetuation of decline after rehabilitation (Derosier et al., 2002; Li et al., 2003; MacKenzie & Chang, 2002; Wang, Van Belle, Kukull, & Larson, 2002). It is from these studies that three distinct domains are formulated, each consisting of two conceptual contexts (Fig 1).

**Physical Domain**

**Cognition (Ability to Understand, Remember, and Be Aware of Deficits)**

To regain maximal functional ability, the stroke survivor must be aware of his or her deficits to learn compensation skills (Hartman-Maier et al., 2002). Detailed cognitive assessments on admission to rehabilitation centers provide some insight into cognitive function (McKinney et al., 2002). The long-term effect of stroke on cognition may not be immediately apparent during the acute and early rehabilitation phases but becomes obvious 3 months after the stroke due to extensive progressive cerebrovascular disease (Patel et al., 2002; Tatemichi et al., 1990).

Patel et al. (2002) studied 645 first-event stroke survivors in an attempt to identify factors that may influence cognitive changes over time. Each participant’s cognition was assessed using the Mini-Mental State Examination at four different time periods: 3 months after the event with repeat assessments at 1, 3, and 4 years. Cognitive impairment at 3 months was present in 248 (38%) of the participants. Regardless of other factors such as age, ethnicity, socioeconomic status, and the location of the vascular lesion, those stroke survivors with cognitive impairment at 3 months had the highest correlations with long-term outcomes of disability, long-term institutionalization, or death at 3 years (odds ratio [OR] = 2.0, 95% confidence interval [CI] = 1.2–3.3) and 4 years (OR = 2.2, 95% CI = 1.1–4.5) after stroke (Patel et al., 2002).

With an aging population and shrinking financial resources, it has been suggested that age may become a consideration when referring for rehabilitation services (Barg et al., 2002). Cognitive changes generally occur more often in stroke survivors older than the age of 75. These changes are not correlated with lesion location or affected cerebral hemisphere (Hartman-Maier et al., 2002; Patel et al., 2002). It is postulated that the clinical manifestations of cognitive changes associated with stroke are difficult to differentiate from the aging process. However, the cognitive changes are frequently associated with previously undiagnosed stroke and brain atrophy noted at the time of the acute stroke presentation (Tatemichi et al., 1990).

There are conflicting studies on the effect that cognition has on rehabilitation outcomes. MacNeill and Lichtenberg (1998) studied the relationship between cognitive ability on admission to rehabilitation and discharge home. They found that cognitive ability on entry to rehabilitation correlates directly with the ability of a stroke survivor to be discharged home for independent living (MacNeill & Lichtenberg, 1998). A more recent study assessing elders in outpatient rehabilitation (Yu & Richmond, 2005) suggests that cognitive impairment is not associated with rehabilitation outcomes of functional achievement, length of stay in rehabilitation, or discharge location. The study revealed that age older
than 80 years and baseline admission function were the predictors of functional gain and rehabilitation efficiency, not cognition (Yu & Richmond, 2005). Their study concludes that cognitive impairment is a significant factor in admission to rehabilitation services. Thus, those with cognitive impairments are less likely to be admitted to rehabilitation than those without cognitive deficits. Their finding that lack of admission to either inpatient or outpatient rehabilitation based on cognitive function is supported by a previous study by Patel et al. (2002). Their results reveal that cognitive ability during the immediate poststroke phase precludes survivors from entering rehabilitation and those survivors who experience a cognitive decline over time have a high rate of institutionalization.

**Function**

Stroke survivors and their families often ask “When will I (he/she) be able to walk?” Short- and long-term prediction of functional handicap is extensively reported (Hartman-Maier et al., 2002; Pettersen et al., 2002; Ringler et al., 2002; Sanchez-Blanco, Ochoa-Sangrador, Lopez-Munain, Izquierdo-Sanchez, & Fermo-so-Garcia, 1999). The prediction of function is based on scores obtained from standardized tools with measurement periods varying from 2 months to 3 years. The study timeframes of measurement and type of patients enrolled in these studies vary greatly. However, the variation does not create any difference in the study outcomes; many stroke survivors tend to decline in function over time. Reasons for decline are many. First, the inability to manage independent activities of daily living is associated with cognitive ability (Zinn et al., 2004). Next, decline in mobility has been associated with depression in the second year after stroke (Van Wijk, Algra, Van de Port, Bevaart, & Lindeman, 2006). Last, older stroke survivors tended to make fewer gains in total and motor capacity on the Functional Independence Measure (Ergeletzis, Kevorkian, & Rintala, 2002).

Functional disabilities are the hallmark of stroke deficits and are a primary focus of rehabilitation. The strongest relationship to disability is impairment in the use of legs and arms (Der osier et al., 2002). The loss of the ability to walk has a higher correlation with the magnitude of disability (Derosier et al., 2002) and is the function that the stroke survivor and his or her family associate with progress toward recovery (Mayo et al., 1999; Pound et al., 1998). Inability to walk often causes access restrictions within the survivor’s home and the community environments (Pound et al., 1998). Therefore, impaired functional ability becomes a significant contributor to psychological distress and social isolation.

**Psychological Domain**

**Self-Concept**

Becoming disabled changes not only physical abilities, but also the entire social being and self-concept of the survivor and his or her caregiver (Hopman & Verner, 2002). The physical, cognitive, psychological, behavioral, and social changes that occur because of stroke alter the stroke survivor’s self-image (Pound et al., 1998). The possible stigma of disability and negative social reinforcement of self-worth is predictive of withdrawal (Kahng & Mowbray, 2005). The stroke survivor withdraws from social interaction because of a lack of independence, which in turn creates feelings related to a lack of usefulness (Hopman & Verner, 2002) and depression (Li et al., 2003). Social isolation occurs for both the stroke survivor and caregiver and is fostered by feelings of shame based on self-image (Doswell et al., 2000), dependency, and mood of the survivor (Hopman & Verner, 2002). Added to the survivor’s social isolation is the lack of caregiver social support; this is documented as another factor in the cognitive and functional decline of the stroke survivor (MacKenzie & Chang, 2002; Moore et al., 2002) The diminishing of self-worth leads to discontinuity, misery, and maladjustment (Doswell et al., 2000).

Self-concept, self-image, and self-esteem are terms often used interchangeably in the literature with measurements of self-esteem used to quantify self-concept. *Webster’s New World College Dictionary* (Agnes & Guralnik, 2000) defines self-concept as “self-image” (p. 1300), which is defined as “one’s conception of oneself and one’s own identity, abilities, worth, etc.” (p. 1301). Self-esteem is defined as “belief in oneself; self-respect” (p. 1301). Definitions of self-concept from nursing literature include “an image or view of self and includes dimensions of self-knowledge, self-expectations, and self-evaluation” (Lindow, Shelestak, & Lappin, 2005, p. 249). Self-concept is the manifestation of behavior from the totality of a person’s interpretation of his or her appearance, origin, capabilities, attitudes, and feelings (Morris, 1985).

Recent research pertaining to self-concept has been generated from the fields of sociology (Lewis & Neighbors, 2005), psychology (Kahng & Mowbray, 2005), education (Moller, 2005), and healthcare (Lindow et al., 2005; Schneider & Forthofer, 2005). The studies use varied approaches and theoretical bases. Ultimately, the
studies discovered that determinants of self-concept arise from both internal and external influences. Internal influences include such concepts as egocentricity, locus of control, self-presentation, self-efficacy, and goal orientation. The external influences include such entities as disease processes, social support, and socioeconomic status. The influences on self-concept are not static but dynamic in nature (Ninot, Fortes, & Delignieres, 2005).

Coping with the disabilities from stroke often challenges the stroke survivor’s self-concept and may contribute to loss of personal identity. Identity loss has been described as an aspect of a chronic illness (Gillies & Johnston, 2004), aging (Stenius, Veysey, Hamilton, & Anderson, 2005), and injury-related disability (Sachs & Ellenberg, 1994). How an individual manages changes to identity is theorized by Whitbourne (1996) as a process of assimilation, accommodation, and balance. Identity assimilation is based on past experiences, abilities, values, and personality, whereas identity accommodation is changing identity as a result of new experiences (Sneed & Whitbourne, 2005). For stroke survivors, identity assimilation would lead them to maintain the status quo through rigid structured processes that were successful in their past life. Using identity accommodation, stroke survivors would change their self-concept from capable, self-respecting, and worthy individuals to needing external validation of their value. According to Sneed and Whitbourne (2005), those individuals using identity accommodation often do not have self-confidence, have low self-esteem, and have a high incidence of depression. A healthy balance between identity assimilation and identity accommodation assists stroke survivors to preserve their self-concept within realistic expectations of living with the disabilities due to stroke.

If others perceive the stroke survivor as a whole person, the stroke survivor feels socially acceptable. This acceptance serves to maintain and enhance self-esteem and self-concept (Lewis & Neighbors, 2005). The preservation of self-concept from both internal and external means is critical for successful recovery for the stroke survivor.

**Health Perception**

An indicator and predictor of health outcomes for both acute and chronic illness are an individual’s perception of his or her health status (Centers for Disease Control and Prevention [CDC], 2000). Measurement of health perception provides a gauge for current and future healthcare delivery demands because, in general, individuals use health services when feeling unhealthy (CDC, 2000). There are two aspects to health perception: that of the individual and that of the social consequences from other’s perceptions of the individual’s condition (Atchley, 1997). Either aspect may create limitations that decrease quality of life (QoL) and increase morbidity and mortality.

Health perception is also a measure used to ascertain QoL and is a common outcome measure for studies involving stroke survivors and individuals with chronic illness. QoL is an individual perception and often reflects the person’s perception of himself- or herself. QoL outcome measures are often based on health perception from data obtained using tools such as the Behavioral Risk Factor Surveillance System (CDC, 2000), Medical Outcomes Study 36-Item Short Form (MOS-SF36) (Alexander et al., 2001; Hopman & Verber, 2002; Ringle et al., 2002), Sickness Impact Profile (SIP) (MacKenzie & Chang, 2002), Assessment of Life Habits (Desrosiers et al., 2002), and General Health Questionnaire (McKinney et al., 2002). The questions included in the tools range from a simple question such as “Would you say that in general your health is excellent, very good, good, fair, or poor?” (CDC, 2000, p. 8) to broader-based questions or statements that include items in the domains of general health, mental health, role emotional, role physical, social functioning, and vitality (MOS-SF36, SIP, Assessment of Life Habits, and General Health Questionnaire).

Intuitively, it would seem that those with lower function and more disabilities have a lower health perception and thus a lower QoL. There are inconsistent results from studies to indicate that this is true. For example, Samsa and Matchar (2004) found only a weak correlation between function of stroke survivors and QoL with the average QoL reported by the survivors to be high. When they compare the findings with those of individuals without stroke but at risk of stroke, the results are similar. As a result, the intuitive assumption that lower function correlates with lower health perception and QoL does not equate.

Psychosocial factors are identified as key contributors to a higher health perception and, as a consequence, a better QoL. Studies supportive of this finding have been completed on both healthy and ill individuals. Individuals with chronic illness (Han, Lee, & Park, 2003), men with HIV (Jia, Uphold, Wu, Chen, & Duncan, 2005), individuals after hip fracture (Cree, 2004), spinal cord injury (Edwards, Krassioukov, & Fehings, 2002), and college students (Hale, Hannum, & Espelage, 2005; Ramey, 2005) had higher health perceptions when social support was present.

The psychological impact of depression has also been linked to lower health perception (Frazier &
Waid, 1999; Jia et al., 2005; Sullivan, Kempen, Van Soderen, & Ormel, 2000). Depression perpetuates decreased social interaction (Jia et al., 2005) and functional ability (Saarijari, Salminen, Toikka, & Raitasalo, 2002), which further increases disability, often leading to institutionalization (Yü & Richmond, 2005). A perpetual downward cycle occurs when a negative health perception is embodied by an individual, leading to decreased function and poorer QoL (Rinringer et al., 2002). Thus, not only is health perception lower, the risk of long-term care increases, which, in turn, increases family and societal burden (CDC, 2000).

The fear of institutionalization and the perception of limited stroke recovery may be potential outcomes worse than death for both nonstroke elders and stroke survivors (Hanger et al., 2000). Studies have previously demonstrated elders who have never had a stroke prefer death to being disabled (Gage, Cardinalli, & Owens, 1994; Holbrook, 1982), but little has been studied about the stroke survivor’s preference of disability or death. In trying to determine elderly stroke survivors’ perceptions of disability, Hanger et al. (2000) studied elderly individuals with a recent stroke resulting in hemiplegia. They compared their perceptions with those of nonstroke elders who were age and sex matched. The 56 participants ranked different stroke outcomes including death. The results of the study indicate that both groups preferred a sudden painless death rather than severe disability. However, this study highlighted an interesting difference between the stroke survivors’ view of disability and that of the nonstroke participants. A higher percentage of those who had no history of stroke (61%) preferred death to disability, whereas only 39% of the stroke survivor group preferred death. This suggests that stroke survivors find some aspect of living with disability preferable over death.

Another area of health perception that has not been studied to a significant degree is the impact of ethnicity. In a study of active rural Alabama women, health perception varied between African American and White women. White women reported higher health perception (Sanderson et al., 2003). This raises the question of ethnic differences between health perceptions of healthy and chronically ill women living in rural and urban settings. One study that represents ethnic differences in health perception in the chronically ill was conducted by Brown, McCauley, Levin, Contant, and Boake (2004). The 218 patients who participated in this study had either mild to moderate traumatic brain injury (MTBI) or general trauma. Ethnic differences for African Americans with MTBI is noted for general health perception as related to functioning ($r < .02$) (Brown et al., 2004).

The factors that influence health perception include physical attributes, psychological grounding, social support, and ethnicity. When some or all of these factors are integrated, research has demonstrated that here is a relationship between health perception and mortality rates (Chin, Zhang, & Rathouz, 2003; Kazis, Anderson, & Meenan, 1990; Rinringer et al., 2002).

**Social Domain Relationships**

The significance of relationships to healing and longevity is noted throughout the chronic illness and disability literature (Atchley, 1997; Bagg et al., 2002; Bishop, 2005; DeLaune & Brown, 2001; Frazier & Waid, 1999; Hale et al., 2005; Hansdottir, Malacrne, Furst, Weisman, & Clements, 2004; Holbrook, 1982; Kahng & Mowbray, 2005; Kilian, Matschinger, & Angermeyer, 2001; Roth & Lovell, 2003; Tapp, 2001; Whitbourne, 1996; Yü & Richmond, 2005). The physical disability associated with stroke is only one hurdle for the stroke survivor. As the stroke survivor is recovering, maintaining relationships with family and friends is another concern (Lamer, 2005). Maintenance of relationships within the family and those within the community provide a support system for anyone with a chronic illness. When these relationships become estranged, there are both physiological and psychological manifestations (Bediako & Friend, 2004; Craft et al., 2005; Kilian et al., 2001).

Understanding the meaning of relationships in illness has been studied from the psychological perspective (Bediako & Friend, 2004; Frazier & Waid, 1999; Papadoupoulos, 1995). The relationship change for both stroke survivors and their families is sudden. The profound change brings the realization of permanent changes in relationships, roles, and responsibilities. The management of this transition affects not only the well-being of the stroke survivor, but also that of the family and other close relationships (Papadoupoulos, 1995). In a qualitative study by Pound et al. (1998), the descriptions of relationships poststroke vary from support to alienation. The wide variation is not explained as a consequence of the stroke; findings indicate that the previous state of the relationship influences the relationships after stroke.

Dramatic relationship changes for the stroke survivor may not occur until many months after returning home (MacKenzie & Chang, 2002). At this time, the expectations of both the person with the chronic
illness (stroke) and his or her spouse, family members, or significant others may differ. For the person with the chronic illness (stroke), the expectation to cope, perform at a higher level than possible, and continue the same lifestyle adds additional stress to the relationship (Bediako & Friend, 2004; Papadopoulos, 1995).

The strength of the interpersonal relationship is a significant contributor to coping with a chronic illness (Bishop, 2005; Kiliar, 2001; Papadopoulos, 1995) and rehabilitation recovery (Hansdottir et al., 2004; MacKenzie & Chang, 2002; Wang et al., 2002). MacKenzie and Chang (2002) found statistical significance between high social support and functional abilities at the end of 3 months (n = 160, p < .001). Those stroke survivors perceiving less social support experience a decline in function (p < .001).

Interpersonal relationships are changed by stroke. During recovery, support is provided through interpersonal relationships with the spouse or other family members acting as agents for rescue, assistance, protection, and identity. In these roles, the spouse or other family members provide assistance when needed, assisting recovery by keeping the recovering person on course and treating the person with respect by acknowledging his or her successes (Corbin & Strauss, 1991).

The deterioration of social lives, prestroke relationships, and the magnitude of deficits contribute to relationship stress and the ability to provide care (Grant, 2004). When care giving becomes a chore, relationships deteriorate and a high incidence of nursing home placement of the stroke survivor is noted to occur (Han & Haley, 1999).

Role Change

Living with and accepting the disability associated with stroke through a positive self-concept are one aspect of successful role change for the stroke survivor (Ringler et al., 2002). Individuals are expected to have certain physical attributes, coping behaviors, and demeanors that are socially acceptable, and these attributes align the individual with “groups, organizations, and society” (Turner, 1990, p. 87). The disabled or malformed individual does not have normal physical attributes and may find him- or herself not valued by society. Add older age to the disability, and the person is moved from a role of participant to nonparticipatory status or isolation (Heller, 1993). The isolation may occur from the perspective of the stroke survivor not feeling valued and losing of self-worth. Lack of self-worth may create self-imposed distancing from family and friends. In addition, family and friends may distance themselves from the stroke survivor and, in doing so, decrease social interaction and support even further. Isolation and the perception of low social support are predictive of early death (Heller, 1993).

Doswell et al. (2000) describes isolation and real or perceived lack of social support as “rolelessness.” Rolelessness supports Turner’s (1990) theory in that role change did not occur but rather the stroke survivor adapted passivity. The passivity is not necessarily self-imposed but may be the result of the inability to maintain interactive relationships because of neurological changes, distancing from family and friends, functional disability, and loss of economic resources. Adaptation versus role change leads to stress in the home environment with struggles to maintain survivor dignity, identity, and self-esteem (Pierce et al., 2004).

Adjustment to the disability of any chronic illness, including stroke, often involves role change not only for the person with the illness or disability but also changes in roles for family and friends. Change in roles for the individual with an insidious onset of a chronic illness may be gradual. The suddenness of stroke creates an immediate temporary or permanent role change for the stroke survivor and his or her family and friends. Family dynamics are altered regardless of the onset (Froch et al., 1997).

Turner (1990) suggests that role change occurs from the perspective of social roles. He divides social roles into four categories: (1) basic role, which includes age and gender; (2) structural status role, which is connected to one’s family, occupation, or organized group; (3) functional group role, which is one’s place in and/or contribution to a cultural group; and (4) value role, which supports or negates values or values system. He defines role change as a “change in the shared conception and execution of typical role performance and role boundaries” (Turner, 1990, p. 88). This means that for role change to occur, something is lost or gained, and from the loss or gain, relationships change. According to Turner, successful role change is complementary, thus demonstrating mutual respect for each other’s change in status and role. When successful role change does not occur, there is a loss of role identity through adaptation.

Role identity varies among individuals. For women, the role identity may be wife, mother, daughter, breadwinner, companion, and friend. Identity evolves from the experience of multiple roles that support personal and societal status and a sense of existence (Menaghan, 1989). The value of a particular role to the person differs based on
his or her sense of its importance, affirmation of others, and continuity (Gillies & Johnston, 2004; Stenius et al., 2005).

The value of the role is also embedded in society’s ideals and preconceptions of the attributes and duties fulfilled by the role (Stenius et al., 2005). The stroke survivor may be unconsciously placed into a devalued role by society. This devalued role may limit opportunities for the stroke survivor to meet his or her maximum recovery potential, thus creating greater disability over time and furthering fewer acceptances by society (Stenius et al., 2005).

The roles of the stroke survivor and caregiver frequently are reversed. What was once deemed their matriarchal or patriarchal role changes after the stroke (DeLaune & Brown, 2001). Often the stroke survivor and the caregiver are ill-prepared for this role change because of a lack of knowledge of the disease process and/or the personal attributes needed to become the primary care recipient and caregiver (Moore et al., 2002). Research suggests professional support and community support are essential components of poststroke recovery for both the stroke survivor and caregiver during the first year postevent as role transitions occur (Grant, 2004; Pierce et al., 2004).

The role reversal that occurs because of the disability and the stress of caregiving leads to either fulfillment in the role (Corbin & Strauss, 1991; Pierce, et al., 2004) or becomes an obstacle to recovery (Corbin & Strauss, 1991; Wang et al., 2002).

Implications for Nurses
Nurses are often the first to interact with the stroke patient in both acute care and intensive rehabilitation. Using evidence-based knowledge, the nurse has the responsibility to expand the nursing history to include such factors as previous cognitive state, previous perceptions of health status, present role within the family dynamic, previous self-concept, cultural influences, and relationships both personal and social. In our multicultural society, it is also imperative that we recognize and develop an understanding of the power of ethnicity as it relates to individuals’ health perception, thus affecting the recovery process.

Implications
Stroke has been recognized as a public health problem for more than 2000 years (McHenry, 1969). As a leading cause of serious and long-term disability, stroke continues to create heavy financial burdens for the survivor, his or her family, and the public health system. The CDC and the National Institutes of Health collaborate to educate the public about stroke to facilitate early recognition and intervention that could possibly result in better outcomes.

Stroke rehabilitation is often limited to physical aspects and the accommodation for deficits. There is minimal consideration of the psychological, social, or environmental needs during or after rehabilitation (Burton, 2000). Once the disabled survivor returns home, the environment is a foreign one. In addition, the social support may be nonexistent or diminished from fatigue or other family obligations.

Stroke research is frequently done on patients who have entered rehabilitation hospitals. Many stroke survivors may now be discharged home with home health or use skilled care versus inpatient rehabilitation. Longitudinal studies to date have not captured the stroke survivors to assess alterations in function, cognition, or QoL poststroke.

Stroke can be a devastating chronic illness. Long-term survival is poor, and little is known about the characteristics that promote a successful recovery that enables the stroke survivor to return to his or her home environment. Successful recovery is not confined to the ability to regain function, but is a complex interrelated process involving the stroke survivor’s physical healing, psychological coming to terms, and support systems identified as relationships (Fig 2).

FIGURE 2 Interrelated Domains of Stroke Recovery

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Research is needed to understand the significance of health perception in stroke recovery. Nurses caring for both acutely ill and chronically ill patients have an opportunity to influence health perception. First, nurses need to recognize the personal and cultural factors that suggest low health perception, such as the number of physical illness or injury days per year, number of days experiencing feelings of anxiety or depression, and number of days that sickness/injury or mental distress prevented performance of usual activities (Moriarty, Zack, & Kobau, 2003). Then action can be taken to educate the patient and family and work collaboratively with the healthcare team to institute appropriate referrals to manage issues that affect adjustment to the illness or disability (Harvey, 1992).

The factors that influence successful role change are complex and multifaceted. Nurses have an opportunity to affect successful role transition through supportive family intervention beginning on admission of the stroke patient to acute care and sustained throughout the continuum of care. The nurse is a primary source for referral of the stroke survivor and family to consultative resources that can provide continued support after discharge from acute care and/or rehabilitation. Early assessment of the stroke survivor’s interpersonal and social relationships has the potential to identify mechanisms for intervention to support throughout the acute crisis, rehabilitation phase, and beyond. Learning the significance of maintaining positive relationships and their supportive interaction for recovery is not only psychologically sound but also shows promise for physiological improvement, which may affect functional outcomes.

Qualitative and longitudinal qualitative research is needed to understand the factors that contribute to a successful role change. The meaning of role reversal for the stroke survivor has yet to be described. Programs that support life transitions from other debilitating diseases may indeed have opportunities to be tested with stroke survivors.

It is evident from the caregiver literature that the stroke survivor role is burdensome and stressful to the survivor’s significant other and family (Blake, Lincoln, & Clarke, 2003; DeLaune & Brown, 2001; Larson, et al., 2005; Moore et al., 2002; Pierce et al., 2004; Tooth, McKenna, Barnett, Prescott, & Murphy, 2005). The findings of the studies demonstrate the ill preparation for being a caregiver (DeLaune & Brown, 2001), lack of social support (Larson et al., 2005; Pierce et al., 2004), and fear (Moore et al., 2002). Nurses can recognize caregiver stress and take steps to intervene and provide support.

Nurses interact with the patient and family on a continual basis. Cognitive variation from prestroke is an important assessment that may guide further evaluation and therapies. Cognition is a domain for stroke research. The literature suggests that cognition is not an independent factor for the prediction of rehabilitation outcomes, but when coupled with the effects of other deficits, it is likely to impede recovery and the return to independent living (Meijer et al., 2005).

Summary
This literature review indicates stroke recovery is multifaceted and multidimensional. There is not one single aspect of stroke recovery that can be separated from the other. Studies involving all domains of stroke recovery and disparate populations will aid in understanding the interactive processes that support recovery.

Stroke affects the whole being of the survivor. The literature supports that there are many aspects of stroke recovery. What has not been researched is how these domains interact to facilitate stroke recovery and how nurses may significantly have an impact on this process.

The key domains of recovery identified provide many opportunities not only for exploration by nurses but also by interprofessional teams caring for stroke survivors.

References


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