Self-Efficacy and Quality of Life After Stroke

Gale Robinson-Smith

Abstract: *Approximately 3 million Americans are living with various degrees of disability from stroke. A greater understanding of the psychosocial aspects of stroke would enhance the practice of neuroscience nurses who work with stroke survivors. Further, there is an interest in alternative strategies to improve function beyond the expected neural recovery. Mechanisms to enhance stroke recovery include psychological adaptations such as self-care self-efficacy, which is defined as the confidence a person has in his or her ability to perform relevant self-care activities. This study identified a relationship between self-care self-efficacy and quality of life after stroke. Depression and functional independence also were considered because they are important to understanding the primary relationship between self-care self-efficacy and quality of life. A descriptive correlational design was used. Sixty-three stroke survivors from an inpatient rehabilitation facility were studied at 1 month after stroke and at home 6 months after stroke. Instruments used to measure patients' quality of life employed were the Strategies Used by People to Promote Health, the Quality of Life Index—Stroke Version, the Center for Epidemiologic Studies—Depression Scale, and the Functional Independence Measure. Self-care self-efficacy was strongly correlated with quality of life and depression after stroke. Self-care self-efficacy, quality of life, and functional independence increased at 6 months after stroke and depression decreased. Functional independence was modestly correlated with quality of life at 6 months after stroke. Nurses can assist patients to increase their confidence and motivation after stroke by encouraging self-care self-efficacy behaviors, thereby improving quality of life.*

Stroke is the leading cause of serious, long-term disability in the United States. About 600,000 people experience a new or recurrent stroke each year (American Heart Association, 2000). Rehabilitation after stroke very likely affects what patients learn about self-care activities and the adjustments needed to compensate for stroke deficits. Because more patients are surviving stroke as a result of improved acute care, there is a pressing need to understand what compensatory mechanisms lead to improved function and independence.

Patients deal with a wide variety of poststroke effects, such as hemiparesis, poor balance, aphasia, bowel and bladder problems, and visual difficulties. The residual effects of stroke often require inpatient and outpatient rehabilitation, as well as home visits by nurses and other healthcare professionals. Poststroke patients who approach activities of daily living with confidence are more likely to improve after rehabilitation (Roth, Heinemann, Lorell, Harvey, McGuire, & Diaz, 1998). Furthermore, patients may carry out functional tasks and treatments more consistently when their confidence is high (O'Leary, 1985). Quality of life can be compromised after stroke, partly because some patients and families cope in ways that decrease life satisfaction (Robinson-Smith, 1993). Avoidance of functional tasks may lead to lower morale and depression over time. Studies show that dysphoric symptoms and depression can range from 25% to 60% initially and for up to 3 years after stroke in patient samples (Andersen, Vestergaard, Ingemann-Nielsen, & Lauritzen, 1995; Astrom, Adolfsson, & Asplund, 1993; Hermann, Black, Lawrence, Szekely, & Szalai, 1998). In addition, in a group of patients followed for 10 years after stroke, depression was associated with increased mortality (Morris, Robinson, Andrzejewski, Samuels, & Price, 1993).

A better understanding of adaptations, such as self-care self-efficacy, can help neuroscience nurses more effectively address the psychosocial effects that this growing population of stroke survivors faces. This article presents findings from a study that examined self-care self-efficacy and its relationship to quality of life and depression after stroke. Functional independence was considered for its relationship to the main variables, because it is a major measure of objective outcome that may affect more subjective outcomes after stroke, such as quality of life and depression. Lev and Owen (1998) defined self-care self-efficacy as an individual's confidence to perform strategies that he or she believed would promote health.

Background

In a study of health professionals who care for patients after stroke, nursing staff members spoke about the work of improving patient confidence to prepare patients for life after discharge from the hospital (Pound & Ebrahim, 1997). The study reported in this article was based on the social-cognitive theory of perceived self-efficacy (Bandura, 1997) and nursing self-care theory Orem (1991). Moore (1990) pointed out that patients must believe in their own competence to perform self-care before they attempt self-care activities. Belief in personal competence (i.e., self-efficacy) is a necessary prerequisite to self-care activities. Self-efficacy can be improved through four pathways: performance

Questions or comments about this article may be directed to: Gale Robinson-Smith, PhD RN, Villanova University, College of Nursing, 800 W. Lancaster Avenue, Villanova, PA 19085. She is an assistant professor in the College of Nursing.

Copyright ©2002 American Association of Neuroscience Nurses
0047-2606/02/3402/000091$5.00

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

accomplishments, vicarious experience, verbal persuasion, and physiological states (Bandura, 1986). When self-efficacy is high, a person believes he or she can cope with difficult life situations. If coping is not successful, the resulting helplessness is often expressed through decreased motivation (Bandura).

Among stroke patients, increased self-care self-efficacy is related to higher quality of life and fewer depressive symptoms (Robinson-Smith, Johnston, & Allen, 2000). In addition, functional independence at discharge (1 month after stroke) predicted 20% of the variance in quality of life at 6 months after stroke. Among patients receiving cancer chemotherapy or hemodialysis, Lev and Owen (1996) found that higher self-efficacy scores were linked to higher quality of life scores and lower psychological maladjustment symptoms and mood distress. They discussed the need to test self-care self-efficacy in future studies to assist with identifying psychological determinants of health outcomes. In cardiovascular nursing, Carroll (1995) noted that self-efficacy expectation was a significant mediator between self-care agency and performance of self-care activities among patients recovering from coronary artery bypass surgery. This research study emphasized the role for nurses in supporting self-efficacy after coronary artery bypass surgery to improve functional independence. King (1996) reported that depression and functional ability affect the quality of life achieved by patients after stroke. She recommended that nurses help patients develop healthy coping skills such as reappraisal of control and ways to enjoy life to improve quality of life after stroke.

The study reported here sought to identify a relationship among self-care self-efficacy, quality of life, and depression. One major research question was tested: "What is the relationship of self-care self-efficacy to quality of life 1 and 6 months after stroke?" Depression and functional independence also were evaluated because of their importance to understanding the primary relationship between self-care self-efficacy and quality of life.

Method

Sample

The sample comprised 63 patients who were identified from admission records from three hospitals within a major rehabilitation institution in the northeastern United States. All three facilities offered inpatient multidisciplinary rehabilitation. Inclusion criteria included (a) admission to the inpatient rehabilitation program from an acute care hospital within 2 weeks of the stroke; (b) absence of other neuromusculoskeletal conditions that interfered with function, such as multiple sclerosis or Parkinson's disease; (c) absence of major psychiatric disorder as defined by the *DSM-IV* (American Psychiatric Association, 1994) ruled out through patient self-report; and (d) cognitive function adequate for participation in the study, evaluated by a score on the Mini-Mental State Examination (MMSE) of greater than 23 (Folstein, Anthony, & McHugh, 1985).

The mean age of patients was 71 years, and the ages ranged from 36 to 92 years. The majority of participants were male (55%), white (92%), and high school graduates (76%). Of the total sample, 73% had at least one person living in the home and 68% had a child living nearby. Two patients had a previous stroke. Another two patients reported taking antidepressants at 1 month after stroke that had been prescribed previously for problems unrelated to stroke.

Measures

Four instruments were used in the study: Strategies Used by People to Promote Health (SUPPH; Lev & Owen, 1996), Quality of Life Index–Stroke Version (QLI-SV; Ferrans & Powers, 1985), Center for Epidemiologic Studies–Depression (CES-D) Scale (Radloff, 1977), and the FIM™ instrument* (Granger, Hamilton, Keith, Zielezny, & Sherwin, 1986). Questionnaires were administered when patients were not engaged in rehabilitation sessions; the time of day varied from morning to late afternoon. Approximately 40 minutes was required to answer questionnaires. FIM instrument discharge scores were obtained from computerized data compiled on all patients in the rehabilitation facility.

SUPPH. Self-care self-efficacy was measured with the SUPPH (Lev & Owen, 1996). An internal consistency reliability of .95 and criterion validity have been established for the original instrument (Lev & Owen). Three subscales of the SUPPH—coping, reducing stress, and enjoying life—were used. The making decisions subscale, which addresses treatment alternatives, was not used because participants had already opted to participate in inpatient rehabilitation. Because efficacy beliefs are task-specific, 23 items from the original SUPPH were modified to be applicable to stroke survivors. Two items were modified to refer to stroke; for example, "I have confidence in helping other people who have had a stroke," and "I have confidence in dealing with the frustration that comes from having a stroke." Two items were combined into one item that asked about "doing things that helped me to cope with previous physical and emotional difficulties." Other items referring to side effects of treatments were deleted because they did not apply to patients in this study.

The reliability coefficient was .95 for the 23-item SUPPH used in this study. Total possible scores ranged from 23 to 115 with higher scores representing greater self-care self-efficacy. Participants were rated on a 5-point Likert scale ranging from 1 (*very little confidence*) to 5 (*extremely confident*) about how confident they were in performing the compensating behaviors. They rated statements such as, "I have confidence in finding ways to

*FIM™ is a trademark of the Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

decrease my stress" and "I have confidence in doing things to control my fatigue and tiredness."

Because a previous study (Robinson-Smith, 1993) emphasized the need to identify coping methods used by stroke patients, an open-ended question was included in the introduction to the SUPPH instrument. Patients were asked what methods or behaviors they used to help adapt after the stroke. Prayer, relaxation techniques, physical exercise, and visualization were suggested as examples of different strategies people might employ after stroke; however, participants were told, "I'm interested in what you use to adapt since the stroke." Patients reported using three primary coping techniques to handle stress after the stroke: prayer, rehabilitation exercises, and self-talk.

QLI-SV. Quality of life was measured with the QLI-SV scale, a two-part, 38-item instrument (Ferrans & Powers, 1985). Part 1 measures satisfaction with four domains of life (health and functioning, socioeconomic, psychological/spiritual, and family), and Part 2 measures the importance of those domains. Participants selected responses on a 6-point scale ranging from 1 (*very dissatisfied*) to 6 (*very satisfied*) for Part 1 and a similar scale ranging from 1 (*very unimportant*) to 6 (*very important*) for Part 2. Participants were asked how satisfied they were with their abilities to get around and to meet family responsibilities. Internal consistency reliability for the QLI-SV was .93, and criterion validity for the QLI-SV has been established (Ferrans & Powers, 1992). Scores on the QLI-SV range from 0 to 30; lower scores indicate lower quality of life.

CES-D. The CES-D scale measures depressive symptoms in the general population (Radloff, 1977). It is a 20-item self-report scale widely used to measure depressive symptoms. Participants are asked to rate on a four-point scale responses ranging from 0 (*rarely or none of the time*) to 3 (*most of the time*). The scores range from 0 to 60; a score of 16 or higher identifies patients who are likely to be depressed. Reliability and validity for the CES-D have been established (Shinar, Gross, Price, Banko, Bolduc, & Robinson, 1986). The CES-D is considered unbiased by somatic complaints that could be more frequently reported by patients after stroke (Foelker & Shewchuk, 1992). Participants were asked to consider statements such as, "I felt that I could not shake off the blues even with help from my family and friends," or "I had trouble keeping my mind on what I was doing," as they related to the previous week. Because only two participants were taking antidepressants at 1 month after stroke, CES-D scores were not compared between those taking or not taking antidepressants.

FIM Instrument. The FIM instrument, which assesses independent and dependent behaviors for each level of disability, was used to measure functional independence (Granger et al., 1986). The Motor subscale, which rates 13 items relating to self-care, sphincter control, and mobility and locomotion, and the Cognitive subscale, which rates five items relating to communication and social cognition, were used in the study. Reliability and content validity have been established (Dodd, Martin, Stolov, & Deyo, 1993). Total FIM scores improved from a mean of 84 on admission to a mean of 106 at discharge. Mean motor score at admission was 55, improving to 72 by discharge. Mean Cognitive score was 28 on admission, increasing to 30 by discharge. Discharge FIM instrument scores were used in this study, because they occurred closer to the 1-month point and were relevant to postdischarge functioning in the community. FIM scores at 6 months after stroke were not measured, because they are not routinely assessed in the postdischarge follow-up of patients in this rehabilitation hospital.

Procedure

Potential participants were selected from admission records of each institution. Data were collected over a 15-month period. The principal investigator or co-investigator explained the study to the selected patients. Those who agreed to participate signed consent forms that explained the nature of the study and the testing periods. The principal investigator read questionnaires to most subjects, who participated when they had free time from rehabilitation sessions. Reading items to participants ensured questionnaires being answered completely, and some patients found it difficult to read because of initial stroke effects on vision and concentration. Questionnaires were kept in a locked cabinet, and participants were assigned code numbers for data analysis to maintain confidentiality.

After discharge from inpatient rehabilitation, participants were called at home to obtain permission again for a home visit. At 1 month after stroke, 77 subjects participated in the study. Fourteen of those subjects did not participate at 6 months after stroke for the following reasons: death ($n = 4$), mental status change as indicated by a score below 23 on the MMSE ($n = 1$), relocation to another state or country ($n = 2$), illness in spouse ($n = 1$), and refusal of a request for home visit ($n = 6$). Data from the study were analyzed and reported on the 63 participants who participated at 1 and 6 months after stroke.

Data Analysis

Data were analyzed by using the Statistical Package for the Social Sciences: SPSS Base Version 7.5 for Windows. Pearson correlations were used to analyze bivariate relationships. Hierarchical multiple regression was employed to examine more complex relationships, such as the degree to which functional independence might confound or explain the effects of self-care self-efficacy.

Results

Table 1 describes the site of brain injury, type of stroke, and comorbid conditions of the 63 participants. The mean scores, standard deviations, and reliability coefficients for the variables/scores at both 1 and 6 months after stroke are presented in Table 2. Scores on the SUPPH, QLI-SV,

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

from 1 to 6 months after stroke, and scores in the FIM instrument also increased from admission to discharge, but those on the CES-D decreased; the differences between these variables from 1 month to 6 months were statistically significant. Self-care self-efficacy was generally good, as indicated by mean scores on the SUPPH that showed subjects were "somewhat confident" to "quite confident" in the behaviors they reported using to adapt to the effects of their stroke. On the QLI-SV scale at 1 month after stroke, subjects classified as highest those items relating to family, home, and emotional support (scores ranged from 13.7 to 12.1). Independence and health, lack of a job, sex life, and personal control were items that ranked the lowest (scores ranged from 3.8 to 1.6). At 6 months after stroke, quality of life again was reported as higher, with an increase of about 0.5 to 2 points for items based on home, family, and emotional support, whereas the ability to speak was included at this time period. Participants repeated low rankings for items related to sex life (increase of 1 point) and lack of a job (decrease of 1 point) from the baseline score. In addition, at 6 months participants grouped the inability to travel on vacation and pursue leisure activities, the amount of stress and worries in one's life, and the potential to live a long time as lower by 1 to 2 points from the 1-month period.

Of the total sample, 25% had significant depressive symptoms, as evidenced by a score of 16 or higher on the CES-D at 1 month after stroke. The group mean of 13.4 on the CES-D indicated that although participants would not be defined as having major depression as defined by the *DSM-IV* criteria, they did show some symptoms of depression. Depressive symptoms decreased markedly at 6 months after stroke by 4.8 points on the CES-D, as measured by a group mean depression score of 8.6. The 15% of participants who received a score of 16 or higher on the CES-D at the 6-month time period would be considered to be significantly depressed.

Table 1. Stroke and Medical Characteristics of Study Sample (*N* = 63)

Variable	Number	Percentage
Side of Brain Lesion		
Right hemisphere	35	55
Left hemisphere	18	28
Brainstem	5	8
Unknown	5	8
Type of Stroke		
Ischemic	56	89
Hemorrhagic	5	8
Unknown	2	3
Comorbid Conditions		
Hypertension	49	71
Cardiovascular disease	32	50
Diabetes	23	31
Gastrointestinal disorders	11	17

Recovery was observed during rehabilitation from admission to 1 month after stroke for the Motor and Cognitive FIM subscales. Total FIM scores improved from a group mean of 84 on admission to a mean of 106 by discharge. The group mean Motor score, which was 55 on admission, improved to 72 by discharge. The group mean Cognitive score was 28 on admission and increased to 30 by discharge. This sample was fairly independent at the time of discharge, according to Stineman, Fiedler, Granger, and Maislin (1998), who reported that FIM Motor scores above 62 and FIM Cognitive scores of 30 indicate independence in most tasks.

Bivariate correlations were conducted to determine associations among self-care self-efficacy, quality of life, and depression. Table 3 shows these relationships at 1 month and 6 months after stroke. All correlations were statistically significant, which indicated a relationship between self-care self-efficacy and quality of life, and between self-care self-efficacy and depression. As overall self-care self-efficacy increased, overall quality of life increased. Also, participants who reported greater self-care self-efficacy at 6 months were less depressed.

Tables 4 and 5 depict the relationship of the Coping subscale of the SUPPH to quality of life and depression. Functional independence at the time of discharge was entered into the equation first, so that the effect of self-care self-efficacy could be evaluated after the effect of functional independence was controlled.

At 1 month after stroke (Table 4), functional independence had virtually no detectable relationship to quality of life. It did, however, have a significant but not strong relationship to depression. At 1 month after stroke, self-care self-efficacy accounted for 51% of the variance in depression, and coping accounted for 52% of the variance in quality of life. In addition, coping was strongly related to depression, even after factoring in the varying levels of functional independence (R^2 added = .435).

The results were very different at 6 months after stroke (Table 5). Twenty percent of the variability in quality of life was explained by functional independence at discharge and coping increased the variability in quality of life to 47%. Functional independence was not significantly correlated with depression. About half of the variance in depression was predicted by self-care self-efficacy.

T tests that measured differences in the major variables over the test period showed statistical significance, based on a 95% confidence level. Scores on the SUPPH and QLI increased at 6 months, indicating improved self-care self-efficacy and quality of life over the time period. Scores on the CES-D decreased, indicating that depression had lessened.

One-way analysis of variance was performed to assess the relationship of categorical variables to quality of life. No significant differences existed in overall quality of life

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Table 2. Descriptive Statistics and Internal Consistency Data for Study Sample ($N = 63$)

Instrument/Measurement	Mean	Standard Deviation	Internal Consistency
SUPPH[a]/Self-Care Self-Efficacy			
1 month poststroke	77.4	15	.95
6 months poststroke	81.1	14	.95
QLI-SV[b]/Quality of Life			
1 month poststroke	22.5	3	.73
6 months poststroke	23.5	3	.76
CES-D[c]/Depression			
1 month poststroke	13.4	9	.85
6 months poststroke	8.6	8	.80
FIM[d] Score at Discharge[e]			
Total	107.8	16	NA[f]
Motor	72.2	13.2	
Cognitive	29.8	5.5	

[a]SUPPH = Strategies Used by People to Promote Health (Lev & Owen, 1996)

[b]QLI-SV = Quality of Life Index–Stroke Version (Ferrans & Powers, 1992)

[c]CES-D = Center for Epidemiologic Studies Depression Scale (Radloff, 1977)

[d]FIM = Functional Independence Measure (Granger, Hamilton, Keith, Keith, Zielezny, & Sherwin, 1986)

[e]The FIM instrument was administered at admission and discharge only, not at 6 months after stroke.

[f]NA = data not available

Table 3. Self-Care Self-Efficacy and Quality of Life and Depression Correlations

Self-Care Self-Efficacy	Quality of Life: 1 Month Poststroke	Quality of Life: 6 Months Poststroke	Depression: 1 Month Poststroke	Depression: 6 Months Poststroke
Overall SUPPH[b] Score	0.66[a]	0.81[a]	−0.61[a]	−0.67[a]
SUPPH[b] Subscales				
Reducing stress	0.41[a]	0.61[a]	−0.35[a]	−0.45[a]
Enjoying life	0.53[a]	0.67[a]	−0.48[a]	−0.53[a]
Coping	0.69[a]	0.81[a]	−0.66[a]	−0.71[a]

[a]$p < .001$

[b]SUPPH = Strategies Used by People to Promote Health (Lev & Owen, 1996).

for gender, lesion location, number of people living in the home, or prayer. Quality of life was lower for those who were taking antidepressants at 1 month after stroke, and it was lower for those who were retired. Participants living alone at 6 months after stroke showed depressive symptoms that were statistically significant when compared with those living with others (12.3 versus 7.2 on the CES-D).

Discussion and Implications

This study showed that self-care self-efficacy was related to quality of life and depression after stroke. In addition, functional independence measured at hospital discharge was related to quality of life 6 months after stroke. This study substantiated the findings of King (1996), in which patients reported higher-weighted quality-of-life items based on family, home, and emotional support, and lower-weighted items that included ability to get around, not having a job, sex life, ability to do things for self, and personal control. In another research study, Whitney, Burns, Frederic, and Lowery (1994) reported the presence of depressive symptoms in patients with either right or left hemispheric stroke and recommended further study of factors such as motivation to understand its relationship to depression and functional ability after stroke.

The finding of the study reported in this article, which shows that patients with higher self-care self-efficacy reported fewer depressive symptoms, provides evidence for the importance of motivation after stroke. This study provides further conceptual support for the variable, self-care self-efficacy, because it was measured with patients who had a stroke. Previous studies of self-care self-efficacy were conducted with patients receiving cancer chemotherapy or hemodialysis (Lev & Owen, 1996, 1998).

Nurses have the potential to help stroke survivors choose practical strategies that respect their quality-of-life values. For example, patients can be encouraged to identify ways to regain independence within family and work environments through reappraisal of the roles they occupied before the stroke. Gaining control enhances self-efficacy by curtailing the sense of powerlessness patients often experience because of challenges they face at home or work. With regard to sexuality, the nurse can explore specific and general sexual topics with patients (Folden, 1994). Some patients may benefit from a discussion of ways to maintain intimacy after stroke.

The nurse's unique role in the healthcare team provides opportunities to intervene with patients in ways that boost patient confidence and belief in self. This study showed that functional ability at discharge from a rehabilitation facility affects quality of life 6 months after stroke. Thus, nurses should encourage methods that

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Table 4. Functional Independence and Coping Predictions of Quality of Life and Depression at 1 Month Poststroke[a]

Predictors	Pearson *r*, Pairwise	Cumulative R^{2b}	R^2 Added	Final Beta
Quality of Life as Dependent Variable				
Functional independence at discharge	.165	.021	.021	–.046
Coping (SUPPH[c] Subscale)	.686[d]	.522[d]	.501[d]	.733[d]
Depression as Dependent Variable				
Functional independence at discharge	–.276[e]	.072[e]	.072[e]	–.091[f]
Coping (SUPPH[c] Subscale)	–.622[d]	.507[d]	.435[d]	–.683[d]

[a]*Multiple regression analysis with initial forced entry of FIM score at discharge, followed by stepwise analysis of block of Self-Care Self-Efficacy Scale total and subscales.*

[b]*Final adjusted R^2 = .510 for quality of life and .484 for depression*

[c]*SUPPH, Strategies Used by People to Promote Health (Lev & Owen, 1996).*

[d]*$p < .001$*

[e]*$p < .05$*

[f]*$p = .273$*

Table 5. Functional Independence and Coping Predictions of Quality of Life and Depression at 6 Months Poststroke[a]

Predictors	Pearson *r*, Pairwise	Cumulative R^{2b}	R^2 Added	Final Beta
Quality of Life as Dependent Variable				
Functional independence at discharge	.450[c]	.202[c]	.202[c]	.162[d]
Coping (SUPPH[e] Subscale)	.812[f]	.679[f]	.477[f]	.748[f]
Depression as Dependent Variable				
Functional independence at discharge	–.135	.029	.029	.113
Coping (SUPPH[e] Subscale)	–.714[f]	.520[f]	.491[f]	–.756[f]

[a]*Multiple regression analysis with initial forced entry of FIM score at discharge, followed by stepwise analysis of block of Self-Care Self-Efficacy Scale total and subscales at 6 months. Simple correlations use pairwise deletion for missing values; multiple regression uses listwise deletion.*

[b]*Final adjusted R^2= .667 for quality of life and .502 for depression*

[c]*$p < .01$*

[d]*$p = .063$*

[e]*SUPPH = Strategies Used by People to Promote Health (Lev & Owen, 1996).*

[f]*$p < .001$*

improve functional independence. While assisting patients with activities of daily living, such as transfer, dressing, and eating, nurses can improve self-efficacy through encouragement, support, and teaching. For example, two patients may have similar physical deficits, but the losses experienced by each one may take on different meaning. One patient might experience distress about the loss of a homemaker role. By pointing out how gains made in fine and gross motor skills can be transferred to a homemaking skill, such as cooking, the nurse supports this patient's mastery of learning transferred from one activity to another. For the other patient, managing family finances may be considered an important role. The nurse can encourage this patient to balance a checkbook and to establish contact with a bank in order to address questions about finances. Accomplishing a task connected to a primary family role may be key in improving patient independence, and it most probably affects self-efficacy.

Nurses should provide opportunities for patients to help other patients as another strategy for improving self-efficacy. When patients help one another master skills, their own confidence grows. Such sharing can be observed in the rehabilitation setting when patients gather together in common areas, such as the dining room. Because of their knowledge of the total patient population on the unit, nurses can encourage brief spontaneous or planned groups during mealtimes or in the evening.

Opportunities for group learning about medications or stress management also encourage social interaction. As group leader, the nurse can focus on participation that increases hope by asking patients to share thoughts and feelings about the problems encountered after stroke. Self-efficacy may be restored because of healing factors inherent in group process and participation (Yalom & Vinogradov, 1989).

Talking with patients about physical, occupational, and speech therapy while providing nursing care in the morning before sessions begin or later in the day can help patients clarify thoughts and feelings about rehabilitation. Grieving the losses experienced with the stroke needs to be acknowledged as a natural and necessary step of the adjustment process. After initial reinforcing of positive coping skills, the nurse can introduce attention-refocusing or imagery methods to provide patients with more options for responding to stressful situations. The nurse also can explore spiritual practices that may help patients deal with personal losses caused by the stroke.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Table 6. Application of Self-Efficacy to Interventions

Components of Self-Efficacy	Relationship of Interventions
1. Performance accomplishments	Nurse reviews self-care behaviors with patient. Nurse offers positive feedback. Patient practices self-care.
2. Vicarious experience	Patient observes another patient practice a self-care activity. Nurse describes stroke survivor who successfully used self-care behaviors.
3. Verbal persuasion	Nurse provides verbal encouragement. Nurse affirms patient's capability for success.
4. Physiological states	Nurse reinterprets patient's expression of stress. Nurse provides realistic symptom interpretation. Nurse maintains calm attitude.

Note: From "Triangulation Reveals Theoretical Linkages and Outcomes in a Nursing Intervention Study," Clinical Nurse Specialist, *9, p. 302. Copyright 1995 by Lippincott Williams & Wilkins, Inc. Reprinted with permission.*

In patient education, the nurse can use self-efficacy strategies to develop interventions. Tools that can help patients build self-confidence include (a) perceiving that a task can be accomplished; (b) breaking a task, especially if complex, into smaller parts; (c) repeating a task or behavior; and (d) reinforcing each step as well as the entire sequence of a task. Brushing one's teeth, for example, is not simple for many stroke patients. It can be broken down into smaller parts, such as identifying the equipment needed, gathering equipment, opening and squeezing toothpaste onto the brush, turning on the water, brushing teeth, and cleaning and putting equipment away. As a starting point, the nurse must identify which of the steps the patient finds easiest to accomplish, then assist with others. Succeeding steps can be added until the patient accomplishes the total task of "brushing teeth."

Nurses working with stroke survivors need knowledge and institutional support to provide care that enhances self-efficacy and positive coping skills. Nursing educators must provide staff members with relevant communication techniques and psychological assessment tools. Nurses also can benefit from information about and training in techniques such as imagery, relaxation/meditation, self-hypnosis, and cognitive behavior strategies. Nurses must make these strategies part of the plan of care.

Depression screening must be included as part of routine nursing assessment. For patients who are depressed after stroke, treatment may include medication or psychotherapy or both. If antidepressants or antianxiety agents are prescribed, adverse effects and potential drug interactions need to be monitored. Cognitive-behavioral therapy has been shown to reduce depressive symptoms and anxiety after stroke (Lincoln, Flannaghan, Sutcliffe, & Rother, 1997). When a patient sees the future as bleak, with little improvement possible, or talks about self in negative terms, nurses can actively intervene by setting up a cognitive behavior program (Stuart & Laraia, 2000). For example, a patient might verbalize feeling like a "cripple" after stroke. In this case, the nurse can question the meaning this term has for him or her to understand whether its negative connotations are influencing patient mood and affect.

Patients often need active assistance in counteracting negative thoughts about stroke. Nurses can help patients learn affirmative responses to develop more optimism about post-stroke life (Seligman, 1998). Lev (1995) noted nursing intervention strategies that highlight self-efficacy's application (Table 6). These techniques are linked to the components of self-efficacy, which are performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Providing positive feedback can influence stroke patients, and nurses who describe what others found helpful in reaching rehabilitation goals provide another avenue for learning self-efficacy skills.

Also, the nurse's use of a calm manner while explaining symptoms can influence self-efficacy through the patient's physiological state. For example, patient anxiety may be lowered when the nurse calmly explains reasons for muscle spasticity and discomfort. The nurse can help the patient gain control over symptoms by teaching strategies such as distraction, disassociation, imagery, and self-encouragement. These behavioral interventions may increase patient self-efficacy after stroke and improve quality of life beyond the hospital stay.

Limitations

The study has several limitations. Patients admitted to a single rehabilitation facility do not represent a random sampling of all stroke patients. To focus on the effects of stroke, the study excluded patients with medical complications that required longer hospital stays before rehabilitation admission.

The constructs of self-care self-efficacy and quality of life overlapped to a degree. Certain quality-of-life items were difficult to ask patients and also were difficult for patients to answer (e.g., questions about sex life, not having a job, satisfaction with a spouse or significant other). Procedures are needed to deal with respondent burden without causing patients unintended distress (Arnold, 1991). The CES-D does not differentiate well between major depression and dysthymia. Clinical interviews and other methods should be used to provide the

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

information needed to make treatment decisions about psychiatric disorders.

Findings about the relationship among self-efficacy, quality of life, and depression emphasize the need to test psychosocial interventions that may improve confidence and motivation for poststroke tasks. Programs must address what patients perceive as important quality-of-life issues and relate them to functional independence. Longitudinal studies beginning during acute care, rehabilitation, and home care are needed to assess the impact of psychosocial interventions on long-term adaptation after stroke.

Summary

This study shows that patient quality of life and recovery for stroke survivors are enhanced when self-care self-efficacy is high. In caring for poststroke patients, neuroscience nurses must identify interventions that can improve quality of life and reduce depression while considering varying levels of functional independence. Because nurses observe firsthand the difficulties patients encounter, they are in a pivotal position to intervene and improve patients' self-efficacy during stroke recovery. Rather than being unplanned, self-efficacy strategies should be part of a care plan that is tailored to each patient. The next step for neuroscience nurses is to develop and test strategies to strengthen this aspect of nursing care.

References

American Heart Association. (2000). *2001 Heart and Stroke Statistical Update*. Dallas: Author.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: Author.

Andersen, G., Vestergaard, K., Ingemann-Nielsen, M., & Lauritzen, L. (1995). Risk factors for post-stroke depression. *Acta Psychiatrica Scandinavica, 92*, 193–198.

Arnold, S.B. (1991). Measurement of the quality of life in the frail elderly. In J.E. Birren, J.E. Lubben, J.C. Rowe, & D.E. Deutchmea (Eds.), *Concept and measurement of quality of life in the frail elderly* (pp. 50–73). San Diego: Academic Press.

Astrom, M., Adolfsson, R., & Asplund, K. (1993). Major depression in stroke patients: A 3-year longitudinal study. *Stroke, 24*, 976–982.

Bandura, A. (1986). *Social Foundations of Thought and Action*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy*. New York: WH Freeman.

Carroll, D.L. (1995). The importance of self-efficacy expectations in elderly patients recovering from coronary artery bypass surgery. *Heart & Lung, 24*, 50–59.

Dodd, T.A., Martin, D.P., Stolov, W.C., & Deyo, R.A. (1993). A validation of the functional independence measurement and its performance among rehabilitation inpatients. *Archives of Physical Medicine and Rehabilitation, 74*, 531–535.

Ferrans, C.E., & Powers, M.J. (1985). Quality of life index: Development and psychometric properties. *Advances in Nursing Science, 1*, 15–24.

Ferrans, C.E., & Powers, M.J. (1992). Psychometric assessment of the Quality of Life Index. *Research in Nursing and Health, 15*, 29–38.

Foelker, G.A., & Shewchuk, R.M. (1992). Somatic complaints and the CES-D. *Journal of the American Geriatrics Society, 40*, 259–263.

Folden, S.L. (1994). Managing the effects of stroke: The first months. *Rehabilitation Nursing Research, 3*, 79–85.

Folstein, M., Anthony, J.C., & McHugh, P.R. (1985). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. *Journal of the American Geriatrics Society, 33*, 228.

Granger, C.V., Hamilton, B.B., Keith, R.A., Zielezny, M., & Sherwin, F.S. (1986). Advances in functional assessment for medical rehabilitation. *Topics in Geriatric Assessment, 13*, 59–74.

Hermann, N., Black, S.E., Lawrence, J., Szekely, C., & Szalai, J.P. (1998). The Sunnybrook stroke study: A prospective study of depressive symptoms and functional outcome. *Stroke, 29*, 618–624.

King, R.B. (1996). Quality of life after stroke. *Stroke, 27*, 1467–1472.

Lev, E.L. (1995). Triangulation reveals theoretical linkages and outcomes in a nursing intervention study. *Clinical Nurse Specialist, 9*, 302.

Lev, E.L., & Owen, S.V. (1996). A measure of self-care self efficacy. *Research in Nursing and Health, 19*, 421–429.

Lev, E.L., & Owen, S.V. (1998). A prospective study of adjustment to hemodialysis. *ANNA Journal, 25*, 495–504.

Lincoln, N.B., Flannaghan, T., Sutcliffe, L., & Rother, L. (1997). Evaluation of cognitive behavioral treatment for depression: A pilot study. *Clinical Rehabilitation, 11*, 114–122.

Moore, E.J. (1990). Using self-efficacy in teaching self-care to the elderly. *Holistic Nursing Practice, 4*(2), 22–29.

Morris, L.P., Robinson, R.G., Andrzejewski, P., Samuels, J. & Price, T.R. (1993). Association of depression with 10-year poststroke mortality. *American Journal of Psychiatry, 150*, 124–129.

O'Leary, A. (1985). Self-efficacy and health. *Behavior Research and Therapy, 23*, 437–451.

Orem, D.E. (Ed.). (1991). *Nursing: Concepts of practice*. St. Louis: Mosby Year Book.

Pound, P., & Ebrahim, S. (1997). Redefining 'doing something': Health professionals' views on their role in the care of stroke patients. *Physiotherapy Research International, 2*(2), 12–28.

Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.

Robinson-Smith, G. (1993). Coping and life satisfaction after stroke. *Journal of Stroke and Cerebrovascular Diseases, 3*, 209–215.

Robinson-Smith, G., Johnston, M., & Allen, J. (2000). Self-care self efficacy, quality of life, and depression after stroke. *Archives of Physical Medicine and Rehabilitation, 81*, 460–464.

Roth, E.J., Heinemann, A.W., Lovell, L.L., Harvey, R.L., McGuire, J.R., & Diaz, S. (1998). Impairment and disability: Their relation during stroke rehabilitation. *Archives of Physical Medicine and Rehabilitation, 79*, 329–335.

Seligman, M. (1998). *Learned optimism*. New York: Simon & Schuster Pocket Books.

Shinar, D., Gross, G.R., Price, T.R., Banko, M., Bolduc, P.L., & Robinson, R.G. (1986). Screening for depression in stroke patients: The reliability and validity of the Center for Epidemiologic Studies Depression Scale. *Stroke, 17*, 241–245.

Stineman, M.G., Fiedler, R.C., Granger, C.V., & Maislin, G. (1998). Functional task benchmarks for stroke rehabilitation. *Archives of Physical Medicine and Rehabilitation, 79*, 497–504.

Stuart, G.W., & Laraia, M.T. (2000). *Principles of psychiatric nursing* (7th ed.). St. Louis: Mosby-Year Book.

Whitney, F., Burns, E.M., Frederic, M., & Lowery, B.J. (1994). Depression in stroke survivors: The relationship of laterality in right and left hemisphere damage. *Rehabilitation Nursing Research*, Winter, 130–140.

Yalom, I.D., & Vinogradov, S. (1989). *Group psychotherapy*. Washington, DC: American Psychiatric Press.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.