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## Social Support and Adaptation to Disability

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**SOCIAL SUPPORT AND ADAPTATION TO DISABILITY**

by

**Deborah J. Russell**

**A THESIS**

Submitted to

**Grand Valley State University**

in partial fulfillment of the requirements for the

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**ABSTRACT**  
**SOCIAL SUPPORT AND ADAPTATION**  
**TO DISABILITY**

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Based on Roy's Model of Adaptation, this study examined the relationship between social support and functional independence following hip fracture. A descriptive correlational design was used with a convenience sample of 29 women age 65 and older. The Personal Resource Questionnaire was used to measure social support and the Functional Independence Measure was used to measure locomotion as an aspect of physical function.

Data indicated that women who had higher levels of functional independence one week following hip fracture had higher levels of social support. However, this difference was not statistically significant. The hypothesized relationship between social support and functional independence was not supported. Implications for further research and nursing practice are discussed.

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## CHAPTER 1

### INTRODUCTION

Although several physical and psychosocial variables have been identified that influence an older woman's recovery from acute and chronic illness, many issues have yet to be explored thoroughly. As of May 1994, there were approximately 19 million women over the age of 65 (U.S. Bureau of Census). Of all the musculoskeletal problems experienced by older women, hip fractures are often the most stressful and disabling (Ciocon, Ciocon, & Galindo, 1995). Of the approximately 247,000 persons who suffer hip fractures annually, 75 to 80% are women over the age of 65 (Roberto, 1992).

Previous studies have demonstrated that there is often a substantial decline in physical function following a hip fracture (Marottoli, Berkman, & Cooney, 1992). Of those who survive one year after the fracture, 15% are confined to long-term care facilities and one-third of the remainder continue to require the assistance of devices or need other people to assist with activities of daily living (Cummings et al., 1988). The incidence of hip fractures along with the significant number of people who do not achieve full prefracture ability makes it important to look for factors that might promote more effective adaptation following hip fracture. Older women may experience limitations in the support available to assist them in recovery. If limited

social support interferes with recovery, then the corollary may be true that enhancing support might facilitate recovery.

Roberts (1988) suggested that social support does contribute to the promotion and maintenance of health as well as the recovery from acute or chronic illness. If social support is related to adaptation, then nurses can work to enhance social support as a means of promoting adaptation. There are many factors which contribute to a person's adaptive ability. Nurses must understand the older woman's unique needs in order to provide an environment conducive to adaptation. Even without an acute problem, such as hip fracture, women over the age of 65 have certain physiologic concerns (such as menopause, osteoporosis, and urinary incontinence) that present challenges to nurses in assisting them to remain independent and functional in the community.

Swanson (1989) found that social support, in combination with certain personal factors, promoted adaptation to physical disability by actually buffering the effects of environmental stressors. McNett (1987) noted that the perceived availability of social support significantly influenced coping effectiveness of older women with disabilities, which subsequently affected adaptation. The changes that occur as a result of adaptation may happen in a cyclic manner; physical disability alters the psychological status which affects social activities (White, Richter, & Fry, 1992). Physical disability then has a potential effect on social support. There are certain aspects of care that can, therefore, assist the older woman to maximize health capabilities and adaptation, by promoting, maintaining, and restoring health. These include the

physical aspects of care, how older women relate to others and their perception of social support. The process of adjustment to a lengthy illness may affect the successful outcome of the illness or disability. Social support is a factor which is receiving increasing attention for its possible role in enhancing adaptation. The purpose of this study was to examine the relationship between social support and the adaptation of older women following hip fractures.

## CHAPTER 2

### LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

#### Review of the Literature

It is interesting to explore the literature related to hip fractures, social support and adaptation. In particular, studies focused on postfracture functioning of hip fracture patients, social support and its relationship to adaptation were reviewed. The relationship of social support to physical function after hip fracture will be discussed.

Mossey et al. (1989) studied 219 women aged 59 and older. These women all resided in their own homes previous to the hip fracture and had no other health problems (e.g. cancer or osteoporosis). They experienced no cognitive impairments and needed no other adaptive devices except the use of a straight cane before the fracture. Age was related to pre- and postfracture function, with recovery more limited as age increased. One point noted in this study was a decline in postfracture physical functioning 12 months after the fracture. Mossey et al. used survey methods to gather data which suggested that social connectedness and psychosocial variables, measured shortly after hip fracture, were consistently associated with both physical and psychosocial functioning 12 months after the fracture. Two tools used to measure psychosocial variables were the Center for Epidemiological Studies Depression Scale

(CES-D) and questions adapted from the National Institute on Aging project, the Establishment of Populations for Epidemiologic Studies of the Elderly (EPESE). The CES-D measured depressive symptomatology with older individuals and the EPESE included a measure of social support, defined in terms of the availability and usual frequency of contact with significant others with whom intimacies are shared. This study found that age and social support could determine outcomes up to 12 months after fracture. Age was related to pre- and post-fracture physical function, with recovery more limited as age increased. One point noted in this study was a decline in post-fracture physical functioning 12 months after the fracture. Only 21% of the subjects were independent with ambulation and fewer than 30% had regained reported prefracture levels of physical function. Sixty-four percent of the subjects rated their health excellent or good at 12 months, up from 43% immediately after surgery. The results of this study support the need to attend to the affective status of hip fracture patients following surgery. This study further suggested that social support, whether it be through a formal or informal network, has an impact on the outcome of increased independence.

Although several physical and psychosocial variables have been identified that influence an older woman's recovery from hip fracture, many issues are left to be investigated. Roberto (1993) studied 101 women ages 67-82 who had sustained a hip fracture. An interview method was used to obtain data relative to demographic information, the nature of the hip fracture, functional ability, and information thought to influence the recovery process. Physical functioning was assessed using the

Activities of Daily Living Rating Scale of the Older Americans Research and Service Center Instrument (OARS, 1978). During the interview, information was elicited regarding level of ability to participate in activities of daily living pre and postfracture. Information was also obtained regarding the help subjects received from their informal and formal networks.

The results of this study suggested that the experience of the hip fracture altered the normal interaction patterns between women and members of their informal network. The women reported greater reliance on instrumental assistance after their hip fracture. Prior physical functioning of 70% on the scale (Roberto, 1993) was a strong predictor of postfracture full recovery. This observation supported previous findings that prefracture physical abilities enhanced recovery after hip fracture (Roberto, 1993). The study also found that lower reliance on formal services versus informal services predicted stronger physical functioning post-fracture. Although the study demonstrated a significant relationship between prior physical functioning and recovery from hip fracture, the relationship between physical adaptation and social support needs to be explored further to implement effective intervention strategies.

Borgquist (1992) studied a female sample of 100 patients ages 70-85, who had sustained hip fractures in their own homes. He reported the impact of treatment and rehabilitation in hip fracture patients by using self-assessments of perceived health and objective outcome criteria, such as activities of daily living (ADL) (personal hygiene/dressing), and walking ability. Subjective and objective information was obtained after fracture. The subjects' perceptions of health were positively related

to their level of functioning postfracture and their adaption to the fracture. Eighty percent of subjects studied, who perceived themselves as healthy, maintained or exceeded positive functional outcomes related to their prefracture ability. Two self-assessment questionnaires, the Nottingham Health Profile and the Mood Adjective Checklist, were administered and compared with functional status (ADL and walking ability). Problems related to the hip fracture, such as physical mobility, had correlated with self-assessment scores on the questionnaire. Patients with complications and those that had poor function had scores on the self-assessment questionnaires reflecting the pronounced and distressing impact of the hip fracture. Small changes in subjective mood were found. In an acute, curable disease such as hip fracture, the use of traditional measurements, such as functional assessment, may be just as informative as mood assessment in relationship to adaptation to hip fracture. This study demonstrated the need to further investigate physical function after hip fracture.

Most of the literature on outcomes from hip fracture, aside from mortality, have been focused on sociomedical factors and their association with return to prefracture functional status at 6 or 12 months. Williams (1994) investigated early outcomes after hip fracture among women discharged home and/or to nursing homes at 2, 8 and 14 weeks. The purpose of the study was to examine the extent to which recovery during the early convalescent period varied among women who were discharged from the hospital to their homes and those who were discharged to and spent variable amounts of time in a nursing home. The intent, in particular, was to



examine mobility and mood outcomes in the sample population who were relatively healthy prior to the fracture. The participants in the study were older than 60 years of age, community dwelling, had surgical repair of the fracture, and had cognitive/communication abilities sufficient to respond to questions. The participants were divided into three groups. One group was discharged from the hospital to home, the second group was discharged to nursing home but stayed less than one month, and the third group was discharged to a nursing home and stayed longer than one month.

Mobility was measured using the mobility subscale of the activities of daily living (ADL) measure from the OARS Multidimensional Functional Assessment Questionnaire (OMFAQ) from the Center for the Study of Aging and Human Development (1975). Two mobility items with particular relevance to hip fracture patients were added: getting on and off chairs and walking up and down stairs. Mood states were measured by the Profile of Mood States (POMS). The study indicated the women who were discharged to their homes had greater improvement of overall mood states postfracture. The groups who were discharged home or who spent less than one month in the nursing home improved in all areas of functional ability. The group that stayed greater than one month in the nursing home experienced lower levels of functional ability. This pattern was also supported by the women's own rating of their functional ability. The availability of and number of in-home support systems appeared to contribute to overall level of functional ability.

This study indicated that early discharge placement enhanced return of functional ability and length of time spent in the nursing home. This suggested that discharge disposition was the primary variable that enhanced functional ability and influenced outcomes (Williams, 1994).

The relationship of social support to functioning after hip fracture was noted in a study by Cummings et al. (1988). This prospective study of hip fractures tested the hypothesis that those with fewer social supports would be less likely to recover their prefracture level of functioning. Social support was measured by making a list of names of all the people the subjects mentioned in response to specific interview questions. Subjects were then asked how close they felt to each person on the list and their responses were categorized according to similarity of response. This interview was based on the method of measuring social networks that has been developed by McCallister and Fischer (Cummings et al., 1988). One hundred eleven patients with hip fractures were interviewed and examined before discharge from the hospital. At six months postfracture functional status was again evaluated by using the same questionnaire given before discharge from the hospital. The patients who had a greater number of social supports had more complete recovery of their prefracture level of function. Recovery level of functional status at six months positively correlated with the number of social supports ( $r = .21$ ,  $df = 109$ ,  $p = .04$ ), however, this relationship was weak. The relationship between social support and recovery of functional status was stronger among the 79 elderly subjects who were at least 60

years old. Therefore, the study supported the idea that the more social support, the higher the degree of adaption to hip fracture.

Adaptation to hip fracture can be influenced by many variables. The literature reviewed discussed social support as a factor that could enhance functional outcomes. One study used a survey method to measure social support while another measured interaction patterns (Cummings, 1988) between women and members of their social network. The conceptualization and measurement of social support varied across studies. Adaptation to fracture was most frequently described in relation to physical functioning but in some studies included a psychological measure.

### Conceptual Framework

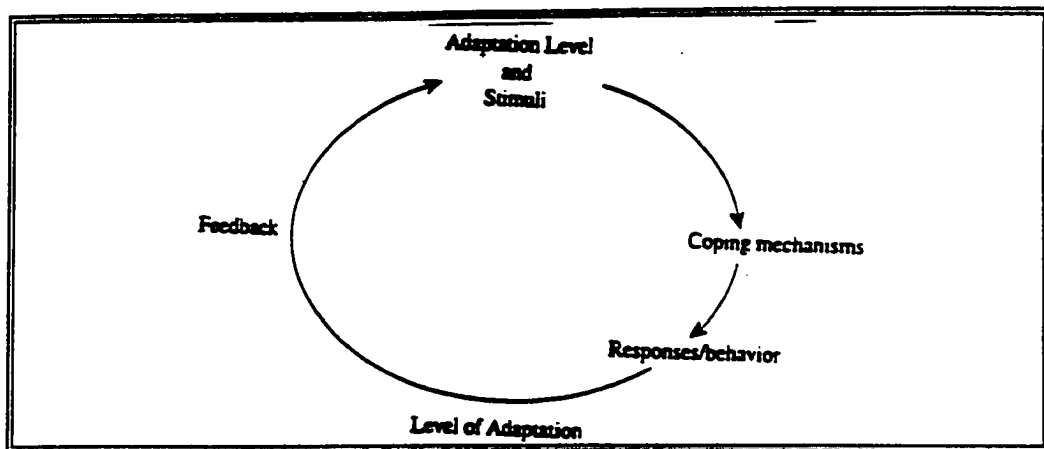
The Roy Adaptation Model (1991) was used as the conceptual framework for this study. Roy describes the person as an adaptive system. Adaptation is a state and process of responding positively to environmental changes. There are three classes of stimuli that form the person's environment. The focal stimulus is the internal or external stimulus immediately confronting the person. Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimulus. Residual stimuli are all other environmental factors within or without the person whose effects are unclear. The person may be unaware of the influence of these factors or it may not be clear to the observer that the stimuli are having an effect. Adaptation level and stimuli activate coping mechanisms which produce responses and behavior. These responses and behavior provide a feedback loop to the adaptation level. Adaptation level is defined as a changing point that represents the person's

ability to respond positively in a situation. This feedback loop indicates the person and environment are in constant interaction with each other. Adaptation level then is a concept that can be described by identifying the relevant focal, contextual and residual stimuli in a situation. Together the three categories of stimuli provide a basis of coping for each person.

Roy describes two sub-systems that facilitate adaptation, they are the cognator and regulator. Internal and external stimuli act as inputs to the cognator and regulator subsystems. The regulator subsystem responds automatically through neurochemical and endocrine coping processes. Stimuli are received from the internal and external environment through the senses, act as inputs through the central nervous system and affect the fluid and electrolyte systems. The information is relayed in an automatic and unconscious manner and a response is elicited. The cognator subsystem responds through four cognitive emotional channels: perceptual information processing, learning, judgement and emotion. Perceptual information processing includes the activities of selected attention, coding and memory. Learning involves imitation, reinforcement and insight; whereas the judgement process encompasses such activities as problem solving and decision making.

The activity of the cognator and regulator subsystems cannot be viewed directly but can be inferred through the behaviors exhibited in relation to four adaptive modes. These are the physiologic, self-concept, role function and interdependence modes. The physiologic mode is how the person responds physically to stimuli from the environment; the mode of self-concept is the perception of self

related to the spiritual and psychological aspects of the person. Role function focuses on the role the person occupies in society. The interdependence mode highlights the importance of significant others and support systems in the life of an individual. The four adaptive modes are categories of behaviors which are interrelated. It is through these modes that the level of adaptation can be observed (see Figure 1).

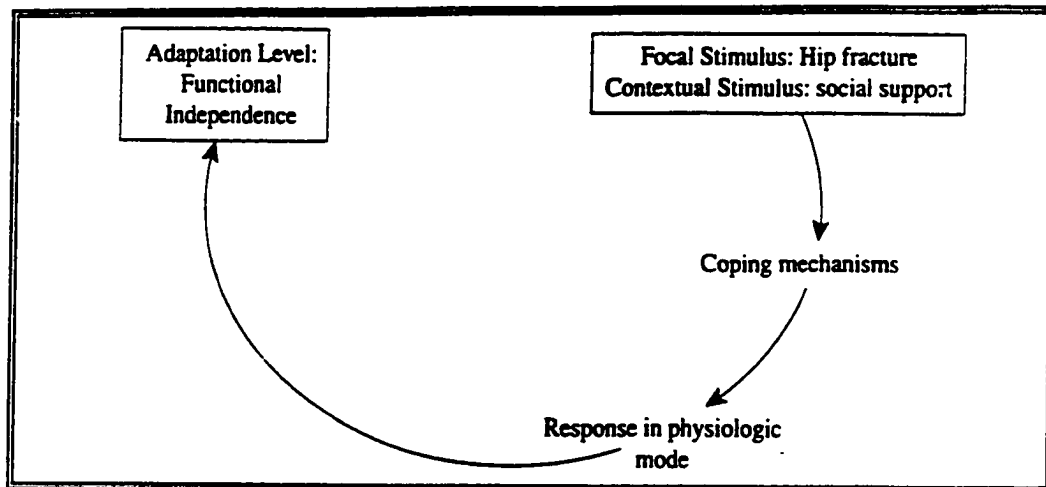


**Figure 1:** Roy's Adaptation Level

This study will examine the relationship between one contextual stimulus (social support) and the adaptation level (functional independence) achieved as a result of coping mechanisms acting to produce responses within the physiologic mode. This study focuses on the physiologic mode as an outcome. This mode is described as how the person responds physically to stimuli from the environment. All behavior is a result of the response of the physiological activity of all cells, tissues, organs, and systems which comprise the person (Roy, 1991). For each of the adaptive modes, it takes a stimulus to activate the coping mechanisms resulting in adaptive or ineffective

behaviors. The person's physiological behavior reflects the effectiveness of the coping mechanisms reacting to the stimuli affecting the adaptive mode (see Figure 2).

Social support has the potential for facilitating adaptation by providing the stimulus needed to activate coping mechanisms which can enhance the physiologic mode. It is interesting to note that the Cummings et al. (1988) study of elderly



**Figure 2:** Focal Stimulus Relationship between social support in hip fracture patients and postfracture adaptation level.

patients with hip fractures found that subjects with a higher score related to social support had a more complete recovery of function by six months after the hip fracture.

Roy's (1991) model discusses other factors that affect adaptation. They are the person's environment, health, nursing, and perceptions. These are all important for the functioning of the person, but they will not be the emphasis of this paper. Adaptation level will be determined in relationship to the physiologic mode and defined as a level of functional independence.

This study, i.e. locomotion, examined the relationship between social support and physical adaptation in older women who sustain a hip fracture. The concept of social support was discussed as a variable to promote physical adaptation. These areas were defined as follows:

Older women: Women over the age of 65.

Social support: "The perceived and/or expressive needs supplied by the self and/or others. These include provision for attachment/intimacy, social integration, opportunity for nurturant behavior, reassurance of worth as an individual and in role accomplishments, and the availability of informational, emotional, and material health" (Weinart, 1987).

Hip fracture: Any fracture of the neck of the femur including the trochanteric and subtrochanteric region (Brunner, 1988).

Adaptation level: A level of functional independence that represents a changing point in the person's ability to respond positively in a situation.

### Hypothesis

The purpose of this study was to determine the relationship between social support and functional independence in the older woman who sustained a hip fracture. The following hypothesis was proposed:

Among older women who have a diagnosis of hip fracture those who have higher social support will exhibit higher levels of functional independence one week following the hip fracture.

## CHAPTER 3

### METHODOLOGY

#### Design

A descriptive correlational design was utilized to identify the relationship between older women's perceptions of social support and their functional independence one week following hip fracture. There are additional variables such as education, age, the presence of other chronic diseases and numerous psychological attributes that may also influence the level of adaptation, but they were not measured in this study. The length of time since the fracture occurred may also influence level of adaptation. This variable was controlled by measuring physical function at the same point in time for all subjects after fracture.

#### Selection of Subjects

A nonrandom sample was utilized for this study consisting of 29 women who were patients in either an acute care or a rehabilitation facility. Criteria for selection included:

1. Age 65 or older.
2. The ability to read and speak English.
3. Presence of a hip fracture for one week.
4. Self-reported vision adequate to read a newspaper.



5. Postfracture weightbearing status will be as tolerated by the subject.
6. Mobility status prefracture will be independent without the use of a device.
7. Cognitive function as evidenced by orientation to name, date, time, place.

### Instruments

Personal Resource Questionnaire (PRQ) (see Appendix B and C). Part II of the Personal Resource Questionnaire 85 (PRQ) developed by Weinert (1987) was used to measure perceptions of social support both from internal and external sources. Part II of the instrument measures the dimensions of intimacy, social integration, nurturance, worth, and assistance (White, 1992). The 25 items are grouped into 5 subscales each with 5 items rated from strongly agree (7) to strongly disagree (1). Higher scores obtained indicate higher levels of perceived social support. Reliability coefficients for Part II have ranged from .87-.93 with samples of older adults. Reliability coefficients for the five subscales were as follows: a) Intimacy (.66-.75), b) social integration (.59-.76), c) nurturance (.68-.80), d) self-worth (.66-.90), and e) assistance/guidance (.69-.75) (Weinart, 1987). Permission for use of the PRQ was obtained from the author (see Appendix D). Coefficient alpha reliability for the total instrument was .94 for this study.

Functional Independence Measure (FIM) (see Appendix E and F). The instrument measures various levels of functional independence. The FIM (1993) was designed to be completed by clinicians and is discipline-free, data reliable, and simple to use. The instrument can be completed in ten minutes using criteria developed from the National FIM Database (Hall, Hamilton, Gordon & Zastler, 1993). The

terminology used in the FIM is consistently utilized by clinicians to describe functional independence. The FIM also represents a minimum dataset of items that reflect areas of disability (i.e. locomotion, mobility). The FIM includes 18-items rated on a 7-level scale (Hall, 1993). The scale ranges from a number (1) completely dependent to (7) completely independent.

This study used the section on locomotion as the measure of functional independence indicative of adaptation in the physiologic mode. Locomotion is scored by evaluating two areas: primary means of locomotion (walk or wheelchair) and ability to maneuver on stairs. Each area was scored on a 7 point scale. Permission was obtained from the Center for Functional Assessment Research to utilize the FIM in this study (see Appendix G).

Validity of the FIM has been assessed in a variety of ways. Initially, acceptable face validity was demonstrated by clinicians. Validity of the FIM has been assessed with home visits by clinicians who have documented minutes of help per day using a daily journal and stopwatch procedure. The Rasch (latent trait) analysis of hospital FIM patient data from 14,799 patients indicated that the FIM's 13 motor items and 5 cognitive items can be successfully converted to unidimensional interval or ratio scales with good psychometric properties (Hall, 1993). The FIM has high interrater reliability (Hall, 1993). The total FIM score intraclass correlation coefficient of 263 inpatients assessed by pairs of clinicians at 21 hospitals was .97; FIM subscore correlations ranged from .93 to .96; and FIM item scores had an average Kappa value of .71 (range = .61 to .76). The FIM measures both the

physical and cognitive aspects of patients with disability. Clinicians who are credentialed through uniform testing can score patients on the FIM. Clinicians are required to recredential every two years.

### Procedure

Prior to proceeding with this study, approval was obtained from the Grand Valley State University Human Subjects Review Committee and the nursing research committees at two midwestern hospitals. The investigator then obtained permission from each of the nursing units involved. Staff meetings were attended and the study was explained to the nursing staff. Staff were then asked for their assistance in identifying potential subjects.

As each potential subject was identified by the nursing staff, the investigator met with the patient, informed her about the nature and purpose of the study, the criteria for participation, and what participation involved. The investigator explained the study to the patients and obtained their consent. A cover letter describing the study and questionnaire were given to each participant (see Appendix A). They were verbally instructed that there were no right or wrong answers and were assured that their answers were confidential and that they could withdraw at any time. They were then provided with privacy to complete the questionnaire. The social support questionnaire took approximately ten minutes for the subjects to complete. Completed questionnaires were sealed in individual envelopes and left in a large envelope on the nursing units. The investigator collected completed questionnaires every two days. The investigator was credentialed to score the FIM. At the time of the interview, the

physical therapy information in each participant's medical record was reviewed and the subject's level of functional independence was scored. The investigator then scored this under the locomotion section of the FIM coding sheet. Each participant was scored using this sheet (see Appendix F). Data was collected over a three month time period.

#### Benefits and Risks to Subjects

It was determined that the participants in this study would not receive any direct benefit from their participation. However, it was believed that this research study might assist health care practitioners develop a better understanding of the needs of the older woman after a hip fracture. The risks involved for the participants were minimal. Anonymity and confidentiality of all participants were maintained. The researcher coded the data sheets upon return to maintain confidentiality. Also, to combat fatigue, instruction was given to allow the participants to take their time in answering questions. If any distress arose, the participants were to notify the investigator. Appropriate referrals would have been made to community agencies. None of the subjects notified the investigator of any distress during the interview.

## CHAPTER 4

### RESULTS

The purpose of this research was to examine the relationship between older women's perceptions of social support and their level of physical adaptation following a hip fracture. The independent variable was social support and the dependent variable was functional independence. Individual items on each scale were measured at an ordinal level; however, total scores for each variable were used to test the hypothesis. The sample consisted of 29 women between the ages of 65 and 78 ( $M=68.0$  years,  $SD=3.3$ ) who were interviewed one week after they had been diagnosed with a hip fracture. All subjects were able to bear weight as tolerated on the affected extremity. No other variables were identified from the sample, i.e. marital status, education, or occupation.

#### Hypothesis

The hypothesis for this study was: Among older women who have a diagnosis of hip fracture, those who have higher social support will exhibit higher levels of functional independence in locomotion. The relationship between the subjects' perceived social support and level of functional independence was examined to determine if any significant relationship existed between these variables.

### Data Analysis

Scores from the Personal Resource Questionnaire (PRQ) Part II and the locomotion section of the Functional Independence Measure (FIM) were analyzed for results using the Statistical Package for Social Sciences (SPSS/PC+). Means and standard deviations were computed from raw scores for both instruments.

Using the locomotion section of the FIM, scores ranged from 1 (total assist) to 5 (supervision) ( $M=3.24$ ,  $SD=.01$ ). The primary means of locomotion after the hip fracture for all subjects was assessed. Most subjects ( $n=28$ ) used a wheelchair as the primary means of locomotion. Subjects' use of stairs was evaluated. All participants required total assistance to maneuver on stairs. A review of the FIM data revealed that 1 subject scored 3 (moderate assistance), 6 were scored at 4 (minimal assistance), 9 scored at 5 (supervision), 12 subjects scored 6 (modified independence), and 1 scored 7 (completely independent). These numbers were arrived at by adding the score of stairs and walk/wheelchair together. This number then indicates level of assistance needed for locomotion.

Total scores for the PRQ were used as the measure of perceived social support. The possible response range for individual items on the PRQ is 1 (strongly disagree) to 7 (strongly agree). For this study, total scores for the 25 items ranged from 60-142 with a mean of 108 ( $SD=21$ ).

Pearson correlations were computed to test the hypothesis that women who scored higher in social support would have higher functional independence. Data analysis included a comparison of the responses from the PRQ to the level of

functional independence. No significant relationship was noted between levels of independence and the subject's responses on the PRQ.

The sample was then divided into two subgroups, those who scored 3 to 5 on the FIM (moderate to supervision) and those who were more independent, 6 to 7 (modified independence to independent) according to the scale. Group 1 had 16 subjects who scored 3 to 5 (moderate to supervision) on the FIM. Group 2 had 13 subjects who scored 6 to 7 (modified independence to independent). Using a one-tailed t-test for independent samples ( $t=.97$ ,  $df=27$ ,  $p=.16$ ) with the PRQ score as a variable, group 2 was more functionally independent and had higher social support. This difference was not statistically significant, however, a comparison of those characteristics between groups is summarized in Table 1.

Table 1

Comparison of FIM Score With the Variable of the PRQ

Variable		Number of Cases	Mean	SD
FIM	PRQ Score			
(3-5)	Group 1	16	104.56	22.10
(6-7)	Group 2	13	112.38	20.68

## CHAPTER 5

### DISCUSSION AND IMPLICATIONS

The results of this study did not substantiate the role social support plays in the lives of older women adapting to a hip fracture. The effect of social support may be real, but the small sample size made it difficult to confirm such a relationship. The sample as a whole may have been too homogeneous and the measures not sensitive enough to obtain results in the hypothesized direction.

The selection of instruments and their application may have hindered the results of the study. Using only two items on the FIM may not have provided enough variation to examine functional independence in relationship to social support. Also, only using locomotion as a measure, versus administering the entire tool, may have been the biggest limitation and an inadequate measure of adaptation in the physiologic mode.

#### Relationship of Findings to the Conceptual Framework

What can be surmised from this study is that the contextual stimulus of social support did not greatly affect adaptation in the physiologic modes as measured in this study. It does not challenge the model's propositions, but suggests that the instruments selected to measure the specific concepts in Roy's model may have been inadequate. This study specifically investigated adaptation in the physiological mode.



Roy (1993) describes the area of focal stimulus, in this study the hip fracture, as the impetus for the response. The contextual stimulus is labeled the social support. Coping mechanisms are activated and a response is noted in the physiological mode. The result is an adaptation level of functional independence. Roy (1993) describes nurses as sufficiently knowledgeable about normal body function to recognize variations from the norm and behavior that suggests problems with physiological functioning. Such recognition is a necessary prerequisite to intervening and influencing functional goals related to independence.

Piazza (1990) suggests a holistic nursing assessment is vital to the patient's well being. The nurse completes an assessment, communicates the findings to the other members of the team, and then initiates the appropriate diagnostic studies or nursing interventions. In this study only one section of Roy's model was used in order to understand functional independence after hip fracture. Assessment should be directed toward all four adaptive modes - not just one. To obtain the best results, this researcher recommends that the entire Roy model be used to better effect adaptation from a hip fracture.

#### Relationship of Findings to Previous Research

Mossey (1989) studied women aged 59 and older who sustained a hip fracture. Postfracture physical functioning was measured 12 months after the fracture. In conjunction, two tools were used to measure psychosocial variables. It was not possible to make similar comparisons in the present study since different tools were used to measure social support. The timing of the data collection in the present study

also hindered any comparison. Roberto (1993) studied women ages 67-82 who had sustained a hip fracture. Both physical functioning and social support were studied. Prior physical functioning was evaluated. In the present study, prefracture functional independence was only noted in relation to selection criteria. To be in the study subjects had to be independent without the use of a device pre-fracture.

#### Limitations of the Study

The findings of this research study are from a small, nonrandom (n=29) sample and, therefore, cannot be generalized beyond the present study. A research design incorporating random sampling and a larger sample size would facilitate greater generalizability. A larger sample may also help to detect relationships if in fact they exist.

Another limitation of this study was that no prefunctional assessment was completed prior to the hip fracture. Identifying prefracture and hospitalization factors, i.e., complications or other illnesses to explain results is important. Results of such a study could provide more efficient use of health care resources by targeting patients who would benefit most from a more intensive postoperative rehabilitation program (Koval, 1994). It is possible that functional ability before the fracture might influence independence following a fracture. The FIM only measured function after the fracture. The only functional area measured was locomotion. This area looks at two subareas - walk/wheelchair and stairs. All subjects in this study were scored at a 1, completely dependent, in their ability to maneuver stairs. Most subjects presented with their primary mode of locomotion as the wheelchair. They also scored

in the 2 to 4 range, maximum to minimal assist, with this form of locomotion. When assessing physical function the entire FIM should be completed and assessed.

This study assessed only wheelchair as a measure for locomotion. This would not necessarily be a true reflection of physical function post hip fracture. It would have been beneficial to measure ambulation at one to two weeks post-fracture

The examination of social support and its relationship to adaptation encompassing the entire experience of hip fracture, from prefracture to one year postfracture, was lacking in this study. Ideally, assessing social support and its significance for the older woman with hip fracture would have yielded more results if preassessment functional ability had been completed. The PRQ also may not have been sensitive enough to detect subtle differences among subjects. Social support may be a factor, but the way social support is conceptualized and measured may have a profound influence on the detection of relationships.

Another limitation of this study is that it did not incorporate secondary diagnosis or chronic health conditions either physically or emotionally as influencing adaptation. It was not possible to distinguish between how much of the subjects' physical recovery was the result of their hip fracture or preexisting chronic disease.

The timing of data collection could have influenced research findings. Length of hospitalization for a hip fracture is 3 to 4 days in an acute care setting and 7 to 10 days in a rehabilitation unit. The perceived need for social support identified by the subjects may vary the further they are from the time the fracture occurred and thus influence the way the PRQ was completed.

The demographic and descriptive statistics did not include marital status, income, or culture/ethnicity as variables. Further studies should include these variables to determine their influence on the PRQ or FIM to determine accurate group comparisons and findings that can be generalized to large populations.

#### Recommendations for Further Research

Social support and its relationship to physical adaptation merits further research. Cummings et al. (1988) studied 111 patients with hip fractures. That study found that the more social support the higher the degree of adaptation to hip fracture. This relationship was not statistically significant, however, the Cummings study noted a number of factors included age, sex, cognitive ability, perceived importance of social support. Tools used to measure social support would benefit from being more specific to recovery from disability. There are other factors that may influence physical adaptation, such as the amount of social support needed to predict recovery from a significant illness.

The use of the FIM is just one way to measure physical and cognitive adaptation. There are many tools that purport to measure functional adaptation. Replicated studies with large samples and varying populations, ages, and genders are needed. Studies are also indicated to determine if the level of social support contributes to adaptation over time.

The concept of physical adaptation needs further clarification and development. There are other variables that influence adaptation such as prior functional ability and reliance on social support, whether that be internally oriented or externally driven.

Is this limited to one aspect of functioning or more inclusive of other activities of daily living? Nurses can, therefore, promote physical adaptation when understanding the role social support plays in recovery.

The possibilities are exciting. Social support may represent only one of several factors important in adapting to a hip fracture and it may do so directly or indirectly. This may mean that a person with more internal or external social support may adapt more successfully to a hip fracture. This also may influence the degree of adaptation. Further research will assist in developing systemic theory-based applications of social support to the recovery process of older women who have sustained a hip fracture.

#### Implications for Nursing

Understanding physical adaptation would further enrich nursing practice by viewing social support as a potential contributor to recovery from hip fracture. After assessing the level of social support available to clients, interventions could be implemented to enhance social support and thereby potentially impact physical recovery. By incorporating the social and physical aspects of older women into the plan of care, nurses can assist them in the identification and fulfillment of support and self-care needs that have perceived importance.

Educational programs need to assist nurses to identify different aspects of social support that best contribute to a positive recovery. Cummings (1985) reported a positive association between the number of members in the older hip fracture patient's social network and recovery level, while the actual amount of help the

women received was not predictive of their recovery. Knowing that support is available is just as important as the actual amount of help received. Thus, it becomes important for the nurse to identify the social support system when caring for the older women in order to facilitate recovery from hip fracture.

Using a nursing theorist such as Roy as a basis for nursing practice has merit. Identifying the stimulus and adaptive modes would better facilitate outcomes. This would indeed enhance physical recovery and decrease length of hospitalization.

## APPENDICES

**Appendix A**  
**Information and Informed Consent**



February 27, 1995

Dear \_\_\_\_\_:

Hip fractures are a common occurrence among women in later life. Of the approximately 247,000 persons who suffer hip fractures annually, 75 to 80% happen to women over the age of 65. The purpose of this study is to examine the effects a hip fracture has on independence.

I am currently a registered nurse at Bronson Vicksburg Hospital and I am completing this study as part of my Master's in Nursing degree. Because you were hospitalized with a hip fracture, you have important information to add to our knowledge base. You have been selected for this study because you were identified as meeting the criteria for inclusion in the study. Your response will help us understand how your hip fracture has affected you. Enclosed is a questionnaire. In order to learn as much as possible about problems associated with hip fracture it is important that each questionnaire be completed and returned. Please place your completed questionnaire in the envelope provided and give it to the nurse caring for you.

Please understand that your privacy will be protected. Your name is not attached to the information, only numbers. This is so we may check your name off the list when your questionnaire is returned. The data will be reported as group data only, your name will never appear on the results of this study. Do not place your name on the questionnaire.

There is no obligation to participate in this study. However, by completing the questionnaire you are giving the undersigned permission to review your medical record. If you choose not to participate in this study, please return the incomplete questionnaire in the envelope provided. This will ensure that you are taken off the mailing list. Your participation/nonparticipation in this study will have no effect on health or social services that you may need in the future. There is no anticipated risk to you as a result of this study. If you find you have concerns or any problems regarding your health as a result of this study, the researcher (Deborah Russell) will refer you to an appropriate person to assist you. Neither Bronson Vicksburg Hospital, Bronson Methodist Hospital, Grand Valley State University, nor the investigator (Deborah Russell) accept any responsibility for any problems you may have.

If you return this completed questionnaire, it will be understood that you agree to participate in the study. If you have any questions about the study or wish to obtain the results of the research, please contact me at the below address.

Thank you for your time and assistance.

Sincerely,

Deborah J. Russell, R.N., B.S.N.  
Bronson Vicksburg Hospital  
13326 N. Boulevard  
Vicksburg, MI 49097  
(616) 649-9130

## **Appendix B**

**Instructions: PRQ**

## Appendix B

### INSTRUCTIONS: PRQ

This is a questionnaire designed to determine the way in which older women view social support in relationship to a physical disability. Each item is a statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (7). For each item, I would like you to circle the number that represents how much you agree or disagree with the statement. Please make sure that you answer every item and that you circle only one number per item.

## **Appendix C**

### **Personal Resource Questionnaire**

## PERSONAL RESOURCE QUESTIONNAIRE

Below are some statements with which some people agree and others disagree. Please read each statement and **CIRCLE** the response most appropriate for you. There is no **RIGHT** or **WRONG** answer.

Statements							
	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Somewhat Disagree</i>	<i>Neutral</i>	<i>Somewhat Agree</i>	<i>Agree</i>	<i>Strongly Agree</i>
1. There is someone I feel close to who makes me feel secure.	1	2	3	4	5	6	7
2. I belong to a group in which I feel important.	1	2	3	4	5	6	7
3. People let me know that I do well at my work (job, homemaking).	1	2	3	4	5	6	7
4. I can't count on my relatives and friends to help me with problems.	1	2	3	4	5	6	7
5. I have enough contact with the person who makes me feel special.	1	2	3	4	5	6	7
6. I spend time with others who have the same interests that I do.	1	2	3	4	5	6	7
7. There is little opportunity in my life to be giving and caring to another person.	1	2	3	4	5	6	7
8. Others let me know that they enjoy working with me (job, committee, projects).	1	2	3	4	5	6	7
9. There are people who are available if I needed help over an extended period of time.	1	2	3	4	5	6	7
10. There is no one to talk to about how I am feeling	1	2	3	4	5	6	7

	1	2	3	4	5	6	7							
	Strongly Disagree		Disagree		Somewhat Disagree		Neutral		Somewhat Agree		Agree		Strongly Agree	
11. Among my group of friends we do favors for each other.	1	2	3	4	5	6	7							
12. I have the opportunity to encourage others to develop their interests and skills.	1	2	3	4	5	6	7							
13. My family lets me know that I am important for keeping the family running.	1	2	3	4	5	6	7							
14. I have relatives or friends that will help me out even if I can't pay them back.	1	2	3	4	5	6	7							
15. When I am upset there is someone I can be with who lets me be myself.	1	2	3	4	5	6	7							
16. I feel no one has the same problems as I.	1	2	3	4	5	6	7							
17. I enjoy doing little "extra" things that make another person's life more pleasant.	1	2	3	4	5	6	7							
18. I know that others appreciate me as a person.	1	2	3	4	5	6	7							
19. There is someone who loves and cares about me.	1	2	3	4	5	6	7							
20. I have people to share social events and fun activities with.	1	2	3	4	5	6	7							
21. I am responsible for helping provide for another person's needs.	1	2	3	4	5	6	7							
22. If I need advice there is someone who would assist me to work out a plan for dealing with the situation.	1	2	3	4	5	6	7							

23. I have a sense of being needed  
by another person
24. People think that I'm not as good  
a friend as I should be.
25. If I got sick, there is someone to  
give me advice about caring for  
myself.

1	Strongly Disagree
2	Disagree
3	Somewhat Disagree
4	Neutral
5	Somewhat Agree
6	Agree
7	Strongly Agree

1	2	3	4	5	6	7
1	2	3	4	5	6	7



**Appendix D**  
**Permission Letter - PRQ**

**MONTANA  
STATE  
UNIVERSITY**

**1893 • CENTENNIAL • 1993**

**College of Nursing**

Sherrick Hall  
Bozeman, MT 59717-0356

Telephone 406-994-3783  
FAX 406-994-6020

October 25, 1993

Ms. Deb Russell  
12580 South 29th Street  
Vicksburg, MI 49097

Dear Ms. Russell:

Thank you for your request. I am pleased that you are interested in the PRQ85 for inclusion in your research project. If you find it meets your needs, you have my permission to use it and reproduce as many copies as you will require. In this packet you will find a copy of the PRQ85, the directions for scoring, the suggested demographic information, and some additional results from the continued psychometric evaluation of the PRQ. Much of our work is published, but if you have specific questions please do contact me. Our latest article entitled "Social support: Assessment of validity", is in the July/August 1990 issue of Nursing Research.

As we continue to work with the refinement and development of the PRQ we are likewise beginning to collect and to collate data sets provided by researchers who have used the PRQ. One specific aim is to have a systematized data base that would provide a source of comparison across studies, populations, situations etc. If you are willing to share your data set we would be most happy to include it in this growing data base. I have included the list of demographic variables that should be sent with the data.

The PRQ has been designed with two distinct parts. Part 1 can address some aspects of the network structure and provides descriptive data regarding situational support. Part 2 is a scale developed to measure the level of perceived social support based on the work of Robert Weiss. While Part 1 can be used without Part 2 or Part 2 without Part 1 we ask that no items or questions be changed/deleted, or the item sequence altered in any way. If you feel you need to change specific items to meet the aims of your research, I would ask that you submit them to me for review. I would be happy to discuss any questions or concerns you have in relation to your specific research.

If you decide to use the PRQ85 in your research please send us a letter with a brief description of your study. Students are to include the name of their research advisor. The tool must be identified, in your questionnaire, as the Personal Resource Questionnaire and authorship of the tool acknowledged in any publication or communication regarding the tool. Please send three dollars to help with the expenses of this mailing. Checks should be made out to Clarann Weinert. Thank you for your interest in the PRQ. I wish you well in your research.

Sincerely, \_\_\_\_\_

Clarann Weinert, S.C., Ph.D., R.N.  
Associate Professor

## **Appendix E**

**Instructions: Functional Independence Measure**

## Appendix E

### **INSTRUCTIONS: FIM**

This is a measure designed to determine locomotion. Two sub-areas of walk/wheelchair and stairs are scored. The scale ranges from (1) total assist to (7) complete independence. The researcher is credentialed to score the FIM according to the guidelines established by the Uniform Data Systems.

,

## **Appendix F**

### **Functional Independence Measure (FIM)**

## Functional Independence Measure (FIM)

LEVELS	7 Complete Independence (Timely, Safety)	NO HELPER
	6 Modified Independence (Device)	
	Modified Dependence	
	5 Supervision	
	4 Minimal Assist (Subject = 75%+)	
	3 Moderate Assist (Subject = 50%+)	
	Complete Dependence	
	2 Maximal Assist (Subject = 25%+)	
	1 Total Assist (Subject = 0%+)	

DATE														
<b>SELF CARE - Current Levels</b>	<b>D/C Goal</b>													
A. Feeding - OT														
B. Grooming - OT														
C. Bathing - Nsg.														
D. Dressing - Upper Body -OT														
E. Dressing - Lower Body - OT														
F. Toileting - Nsg.														
<b>SPHINCTER CONTROL</b>														
G. Bladder Management - Nsg.														
H. Bowel Mangement - Nsg.														
<b>MOBILITY</b>														
Transfer:														
I. Bed, Chair, Wheelchair - PT														
J. Toilet - Nsg.														
K. Tub, Shower Nsg.														
<b>LOCOMOTION</b>														
L. Walk/wheelchair - PT														
M. Stairs - PT														
<b>COMMUNICATION</b>														
N. Comprehension - ST														
O. Expression - ST														
<b>SOCIAL COGNITION</b>														
P. Social Interaction - ST/OT														
Q. Problem Solving - ST/OT														
R. Memory - ST/OT														
<b>TOTAL</b>														
(Check 4- or 7- level scale)														

O.T. \_\_\_\_\_

**SPEECH** \_\_\_\_\_

ADM \_\_\_\_\_

P.T. \_\_\_\_\_

**PRIMARY NURSE** \_\_\_\_\_

D/C \_\_\_\_\_

S.W. \_\_\_\_\_

**M.D.** \_\_\_\_\_

**Next Team** \_\_\_\_\_

**Appendix G**  
**Permission Letter - FIM**



**UNIVERSITY AT BUFFALO**  
STATE UNIVERSITY OF NEW YORK

Center for Functional Assessment Research  
Department of Rehabilitation Medicine  
232 Parker Hall  
3435 Main Street  
Buffalo, New York 14214-3007  
(716) 829-2076  
FAX • (716) 829-2081

September 6, 1994

Deb Russel  
12580 S. 29th Street  
Vicksburg, MI 49097

Dear Ms. Russell,

Thank you for your request for permission to reproduce the Pages III-32 through III-35 (Locomotion: Walk/Wheelchair and Locomotion: Stairs) from *Guide for the Uniform Data Set for Medical Rehabilitation (Adult FIM), Version 4.0* in your thesis. Please send me information about the thesis including: name of university, subject of thesis, level (masters, Ph.D.) A phone number would be helpful if I need to ask you for any other information.

Please use the following citation:

*Guide for the Uniform Data Set for Medical Rehabilitation (Adult FIM), Version 4.0.*  
Buffalo, NY 14214: State University of New York at Buffalo; 1993.

Sincerely,

A black rectangular box redacting the signature of April Peters.

April Peters  
Librarian



**LIST OF REFERENCES**

## LIST OF REFERENCES

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