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**AN INVESTIGATION OF QUALITY OF LIFE, JOB SATISFACTION,
AND THE RETURN TO WORK RELATED EXPERIENCES OF
WOMEN WITH SPINAL CORD INJURY**

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by

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ABSTRACT

This study explored the relationship between employment status, quality of life, and job satisfaction among 190 women with spinal cord injury. In general, the purpose of this study was to describe and gain an increased understanding of what it is like to be a woman with a spinal cord injury who has returned to work or may be considering (or attempting to) return to work. More specifically, this study was focused toward understanding the relationship that exists between a woman's employment status and quality of life. In addition, for participants who were employed there was a desire to understand the relationship between job satisfaction and quality of life. Personal, work, home, and community factors that influenced perceptions of quality of life and job satisfaction for women with SCI were also investigated. This study also sought to understand barriers associated with a woman's ability or inability to return to work.

The Quality of Life Index (QLI), the Minnesota Satisfaction Questionnaire-Long Form (MSQ), and a demographic questionnaire comprised the online survey. Results yielded significant relationships between quality of life and employment status, job satisfaction and whether one was employed in a job for which they were qualified, quality of life and whether one was employed in a job for which they were qualified, and quality of life and whether one desired to be employed.

Results revealed that women with SCI who were employed had significantly higher scores on the QLI than did women with SCI who were unemployed. Women with SCI who were employed in positions for which they were qualified indicated significantly higher scores on the MSQ than did women with SCI who were employed in positions for which they were overqualified. In addition, women with SCI who were

employed in positions for which they were qualified reported significantly higher scores on the QLI than did women with SCI who were employed in positions for which they were underqualified. Finally, women with SCI who were unemployed but desired to be employed reported significantly lower scores on the QLI than did women who were unemployed but did not desire to be employed. Limitations of this study and implications for practice, training, and research are also discussed.

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“If one advances confidently in the direction of his dreams,
and endeavors to live the life which he has imagined,
he will meet with a success unexpected in common hours.”

Henry David Thoreau

CHAPTER 1

INTRODUCTION

Spinal Cord Injury Overview

The National Spinal Cord Injury Statistical Center (NSCISC) estimates that there are approximately 250,000 individuals living with spinal cord injury (SCI) within the United States, and that approximately 11,000 new injuries occur yearly (NSCISC, 2006). Regardless of the level of injury, complications, or the quality of family/social support, SCI is an all-encompassing, life altering experience that influences all aspects of a person's life: physically, vocationally, psychologically, socially, and spiritually (Krause & Anson, 1997).

The Model Spinal Cord Injury System program, sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR), provides assistance to establish innovative projects for the delivery, demonstration, and evaluation of comprehensive medical, vocational, and other rehabilitation services to meet the needs of persons with SCI. There are currently 16 Model SCI Centers across the United States that work together to maintain a national database, participate in independent and collaborative research, provide continuing education related to SCI, and strive for the continued and advanced care of persons with SCI (National Spinal Cord Injury Statistical Center, 2006).

Prevalence of SCI. According to the 2006 NSCISC Annual Report for the Model SCI Care Systems, since 2000 approximately 78% of all spinal cord injuries reported to the national SCI database occurred among males. Although SCI continues to be a predominately male oriented injury, over the history of the SCI database a slight decrease

in the percentage of injuries among males has been observed thus increasing the percentage of injuries among females. According to the NSCISC (2006), although women are statistically reported to represent approximately 20% of the SCI population, researchers believe women may actually represent 25% to 30% of the total SCI population due to the fact that women have longer life expectancies than men. Although it is difficult to know exactly how many women there are within the United States with SCI, there may be as many as 60,000 women living with SCI, with that number increasing by approximately 2,200 new cases each year (NSCISC, 2006).

Causes of injury. The NSCISC (2006) reports that since 2000, the majority of reported SCI cases have occurred as a result of motor vehicle accidents (46.9%). The next most common cause of SCI is due to falls (23.7%) followed by injury related to acts of violence (13.7%), sports related injuries (8.7%), and other unknown causes of injury (7%). Since 2000, a decrease has been observed for sports related injuries while an increase has been observed for injuries due to falls. Between 1990 and 1999, 25% of all spinal cord injuries were reported to have occurred as a result of acts of violence (NSCISC, 2006). In addition, since 2000 an 11% decrease in injuries related to acts of violence has been observed (NSCISC, 2006).

Motor vehicle accidents, falls, and gunshot wounds are the three leading causes of SCI for both men and women. For males, diving related accidents ranked fourth followed by motorcycle accidents. For females, medical/surgical related complications ranked fourth followed by diving related accidents. When considering gender, significant differences are observed in five of the categories of cause of injury: auto accidents (30.7% for males, 50.8% for females), motorcycle accidents (6.8% males, 1.9% females),

diving accidents (7.6% males, 2.8% females), injured by falling objects (3.7% males, 0.6% females), and medical/surgical complications (1.7% male, 4.3% females; NSCISC, 2006).

Race and SCI. In considering race and SCI, a significant trend has been observed in the racial/ethnic distribution of persons with SCI over time. For example, the 2006 Annual Statistical Report for the Model SCI Care Systems indicates that the greatest documented percentage of spinal cord injuries occurred among White Americans (63.0%), African Americans (22.7%), and Hispanics (11.8%) while race was unaccounted for in 2.4% of the cases (NSCISC, 2006). In contrast, between the years 1973 and 1979, 76.8% of persons enrolled in the database were White American, 14.2% were African American, 6% were Hispanic while 3% were from other racial/ethnic groups (NSCISC, 2006).

Although the changes in the racial distribution of persons with SCI are not completely understood, potential influences include the changing demographics in the United States, periodic changes in participating Model Systems of Care, changes in eligibility criteria for inclusion into the National SCI Database, and changes in referral patterns to Model Systems of Care (NSCISC, 2006).

Age and SCI. Spinal cord injury primarily occurs among young adults, and the average age of injury is 38 (NSCISC, 2006). In considering recent demographic statistics, findings support the likelihood that persons with SCI will be faced with the responsibility of financially supporting themselves whether it is through gainful employment or disability related benefits given that most individuals are discharged home following injury. More specifically, given the increase in the number of women with SCI, it is

highly likely that women with SCI will be responsible for supporting themselves and/or their children. This probability supports the need for greater understanding of the return to work needs, experiences, and issues faced by women with SCI so that rehabilitation professionals can most effectively work toward accomplishing the essential goals of self-sufficiency and independence.

Given that the reported average age of injury is 38, it is likely that the average person with a spinal cord injury will have approximately 27 years left to work before considering retirement. In addition, approximately 88% of all persons with SCI discharged from a Model SCI System were discharged home or to a private, noninstitutional residence requiring the need for financial independence to maintain their independent living expenses. Estimates indicate that only 5% of persons with SCI are placed in nursing homes. In addition, approximately 52% of persons with SCI are single at the time of injury. Findings indicate that if a person is married at the time of injury, the probability of remaining married or marrying post-injury is slightly lower for people with SCI compared to the general population (NSCISC, 2006). These findings reinforce the need for financial independence for persons with SCI.

Minnesota Theory of Work Adjustment

To understand the career related issues and return to work needs and experiences of women with SCI, this study was guided by the Minnesota Theory of Work Adjustment (MTWA; Dawis, Lofquist, & Weiss, 1968). I selected the MTWA as a guiding theory because it addresses the importance of not only the individual, and his or her individual variables, but also the role of specific environmental variables in relation to one's work adjustment and job satisfaction. The interaction, as well as fit or congruence, between the

person and his or her environment is considered of utmost importance in explaining or determining one's degree of work adjustment and satisfaction (Dawis, 1992). I believe that the focus and guiding assumptions of the MTWA parallel a central focus of this study, which was to understand the return to work experiences and job satisfaction of women with SCI and how the congruence or incongruence between a woman and her work environment influences her overall job satisfaction and quality of life.

The MTWA evolved out of the psychology of individual differences (Dawis, 1992), and was developed as a result of a 20-year federally funded research endeavor to study the work adjustment of vocational rehabilitation clients. Initially, the Work Adjustment Project's scope was quite broad in terms of studying work adjustment. Job satisfaction, work related needs, work performance ratings, work histories, education, aptitudes, interests, and personality characteristics were among the variables studied. The MTWA was developed in response to the need for a theoretical framework to manage, understand, and provide a focus for data analysis (Dawis, England, & Lofquist, 1964).

The MTWA belongs to a class of theories known as Person-Environment, or P-E theories (Dawis, 2000). Person-Environment theories focus not only on the person "P" in his or her environment "E" but also on the fit and interaction between the two. In the following discussion of the MTWA it should be noted that "P" will denote "Person" while "E" will denote "Environment."

The MTWA stresses that environments and their inherent characteristics vary just as people do, so it is important to identify and understand one's environment at the onset. The MTWA, as the name implies, is primarily concerned with the work environment as well as an individual's behavior or behavioral outcomes within that environment.

Although Person-Environment variables can be considered individually to explain behavioral outcomes, Person-Environment theorists believe that outcomes may be best explained and understood through the Person-Environment combination. In considering the Person-Environment combination, theorists consider both *fit* and *interaction* in explaining behavior and behavioral outcomes (Dawis, 2000, 2005).

Fit refers to the degree or how closely a worker's set of skills matches the skills that a job requires. More specifically, Fit refers to the degree that Person related or "P" characteristics correspond to Environment or "E" characteristics across matching or parallel dimensions. For example, individuals "P" have varying levels of skill sets, and different occupations "E" require varying sets of skills. In addition, some workers will possess the skills to perform a certain job, while others will not. Some workers will possess the skills that more closely match the "ideal" job requirements or skill set to "ideally" perform a certain job while others will be effective workers but may not possess all of the "ideal" skills (Dawis, 2005).

While fit refers to the degree a worker's skills match skills that a job requires, *interaction* refers to "P's and E's action on and reaction to each other in a mutual give and take" (Dawis, 2005, p. 4). Dawis (2005) proposed that workers "P" and work environments "E" are not static or constant but are fluid and ever changing. For example, dissatisfied workers will engage in a behavior in an attempt to change what is perceived as a dissatisfying work situation.

The focus of the MTWA is on the person and the person's behavior. A person, however, exists within the context of an environment. In the MTWA, the primary focus is on the person as a *worker* while the focus of the environment is on the *work environment*.

Underlying the MTWA are three assumptions: (a) a person “P” has certain requirements that he or she expects to be met through his or her environment “E,” (b) a person “P” possesses capabilities that enable these requirements to be met through environment “E,” and (c) much of the person’s “P” behavior in interacting with “E” is motivated toward getting these requirements met. Likewise, “E” also has requirements, or expectations that “P” will possess certain capabilities or skills in order for “E’s” requirements to be fulfilled (Dawis, 2005).

Central to the MTWA is an understanding of the following terms: *needs* (*requirements*), *reinforcers*, *skills and abilities*, *skill requirements*, *satisfaction*, *satisfactoriness*, *tenure*, and *correspondence*. *Needs* are considered among the most important of a person’s requirements, which relate to a person’s survival and well-being. Of primary importance to a person is the environment’s ability to deliver *reinforcers* that satisfy a person’s needs (requirements). Some examples of work reinforcers that an environment can provide include pay, desirable working conditions, prestige, and a sense of worth or usefulness. *Skills and abilities* refer to the repeatable behavioral sequences that one performs in relationship to the task at hand. Skills vary on numerous dimensions. For example, skills vary according to the requirements of the task at hand, the difficulty of the task, the time or speed required to perform the task, and the level of effort required to perform the task. Skills can also vary in terms of whether they are sensory and perceptual, cognitive and affective, motor and physical, or a combination thereof. Jobs are usually defined by their *skill requirements* or by the work tasks that one is expected to perform (Dawis, 2005). Formal job descriptions are usually available outlining required or essential work tasks or skills.

Satisfaction results from the fulfillment of a Person or Environment's requirements being met. To differentiate between the satisfaction of a Person and the satisfaction of an Environment, a Person's satisfaction with his or her Environment is referred to as satisfaction while the Environment's satisfaction with the Person is referred to as *satisfactoriness*. Lack of satisfaction on a Person's part, therefore, is referred to as dissatisfaction, while lack of satisfaction on the Environment's part is referred to as unsatisfactoriness. The optimal state that both a Person and the Environment can hope for is for both the Person and Environment to fulfill each other's requirements. When both a Person and the Environment fulfill each other's requirements, the Person-Environment interaction is maintained. If either a Person or the Environment is not fulfilling the other's requirements, the work relationship may become compromised or even severed (Dawis, 2002).

Tenure is referred to as the length of time that a Person remains with his or her Environment. *Correspondence*, or Person-Environment correspondence, is the central construct in the MTWA. Specifically, Person-Environment correspondence refers to the fit between a Person and his or her Environment, as well as the interaction or mutual responding of "P" to "E" and "E" to "P." According to the MTWA, the three observable outcomes of satisfaction, satisfactoriness, and tenure are the basic indicators of work adjustment (Dawis, 2002).

The Minnesota Theory of Work Adjustment will be used as a framework to explore, understand, and explain the return to work experiences of women with spinal cord injury. To gain a more in-depth understanding of the return to work experiences of

women with SCI, I will first provide an overview of the post-injury employment experiences of persons with SCI.

Employment Post SCI

Competitive employment following SCI has been studied for the last four to five decades (Castle, 1994; Conroy & McKenna, 1999; Devivo & Fine, 1982; Krause, 1992; Krause & Anson, 1996; Schonherr, Groothoff, Mulder, Schoppen, & Eisma, 2004; Ville & Ravaud, 1996). Regardless of gender, employment of persons with SCI has historically been considered one of the most significant, yet difficult, rehabilitation goals to achieve. Employment has been established as a critical factor in a person's level of overall adjustment and rehabilitation. Return to gainful employment is often considered an ultimate marker of success following or even during completion of one's physical rehabilitation (Devivo & Fine, 1982; Devivo, Rutt, Stover, & Fine, 1987; Krause, 1996).

Research findings support the significance of the goal of returning to work in that people with SCI often experience greater satisfaction with life if they are gainfully employed (Crewe, 2000; Crewe & Krause, 2002; Krause, 1990, 1992). Return to work has also been associated with a significantly greater likelihood of surviving SCI over an extended period of time (Crewe, 2000; Krause, 1991; Krause & Crewe, 1987; Krause, Sternberg, Maides, & Lottes, 1997). Although financial benefits are often viewed as the most common benefit or reinforcer of employment, employment following SCI is consistently related to greater levels of satisfaction in nearly all areas of life, and has been closely associated with one's self-esteem and self-concept (Krause, 1990, 1992, 1996; Krause, Sternberg, Maides, & Lottes, 1998) since one's value, worth, and status are often weighed against one's vocation (Yasuda, Wehman, Targett, Cifu, & West, 2002).

Employment statistics. At the time of admission to one of the 16 model SCI care systems, approximately two-thirds (64.2%) of persons with SCI were reported to be competitively employed while 15% were students and 16.3% were unemployed. An investigation of post-injury employment patterns reveals significantly different data over time with post-injury employment statistics increasing as the number of years post-injury increased. For example, only 13.6% of persons with SCI were employed one year post-injury. After post-injury years one and two, percentages of employment steadily increased to 39.5% by year 25 and peaked in year 30 at 41.8% (NSCISC, 2006).

The proportion of persons with SCI who were identified as homemakers, retired, working in sheltered workshops, or involved in on-the-job training programs remained relatively consistent across all post-injury years. Persons with SCI in the role of “student” were observed to peak in year two at about 16%, then steadily decline indicating that persons with SCI are more likely to return to school shortly after their injury. After post-injury year five, the proportion of employed persons increased while the proportion of students decreased suggesting that some of those who completed their education/training became gainfully employed (NSCISC, 2006).

Level of injury may also have an influence on the proportion of persons with SCI who enter the competitive labor market. According to the NSCISC (2006) for persons with paraplegia, the percentage of those employed increased from 14.6% in the first post-injury year to 46.5% in year 30. For persons with tetraplegia, the percentage employed increased from 13.7% in year one to 38.8% in year 30 (NSCISC, 2006). With the exception of etiology of injury, it should be noted that these findings are not gender

specific. The present study, however, specifically focused on the return to work experiences of women with SCI.

A review of employment related literature conducted by Trieschmann (1988) noted employment rates ranging between 13-48% for persons with SCI. Other studies support similar findings (Devivo & Fine, 1982; Devivo et al., 1987). It is difficult, however, to obtain consistent and accurate employment statistics for persons with SCI as variations occur for several reasons. One reason for variation may be how the term “employed” is operationally defined (Yasada et al., 2002). For example, some studies may define "employed" more broadly, including homemakers or students, while others may define "employed" more narrowly, excluding homemakers or students. Another reason for the variation in findings may be attributed to individual or participant characteristics of the sample being studied. For example, employment rates are known to increase as the amount of time since a person has been injured increases (Krause, 1992; Krause & Anson, 1996; Krause et al., 1998). Given this, one would expect the employment rates of newly injured persons to be lower than the employment rates of persons who are 7 to 10 years post-injury. In addition, variation in employment rates could be due to the geographic location of the participants studied. Persons who reside in urban locations, for example, may have greater access to transportation, employment opportunities, or resources than persons who reside in rural areas (Yasada et al., 2002).

Factors Affecting the Employment of Persons with SCI

Age at time of injury, severity of injury, and vocational interests are some of the factors known to impact a person’s employability (Crewe & Krause, 2002). Because this

study focused on the career experiences of women with SCI, each factor was included in the study and will be described below.

Age at time of injury. The younger a person is when he or she sustains a SCI, the greater the probability of that person becoming gainfully employed (Crewe & Krause, 2002). This relates, in part, to the concept that younger people have greater flexibility and adaptability to change. Crewe (2000) found greater difficulties in returning to work for persons who were over 40 at the time of injury unless they could perform their job given their post-injury limitations. Unless they were able to return to their pre-injury position, even greater difficulties were observed in returning to work for persons who were over 50. For people aged 50 and older, a greater impact of injury on one's health was observed as well as less time and fewer options for retraining or acquiring new skills (Crewe, 2002).

Severity of injury. Severity of injury is known to play a significant role in the probability of returning to work; the less severe the injury and limitations, the greater the chances of returning to gainful employment. For example, persons with paraplegia are statistically more likely to return to work than persons with tetraplegia. Part of this likelihood is attributed to the fact that persons with fewer functional limitations will be able to return to their pre-injury positions or places of employment (Crewe & Krause, 2002). For example, a person with paraplegia who was employed pre-injury as a computer programmer should still be able to perform the essential functions of the job even after injury. As the severity of a person's injury increases, so does the likelihood that it will take a longer period of time for that person to become ready to return to work. This gap, however, between the severity of one's injury and time required to return to

work has been observed to diminish for persons with higher levels of education (Crewe & Krause, 2002).

Specific vocational interests. A person's vocational interests may also be associated with one's level of employability (Crewe & Krause, 2002). A person's interests and preferences for job activities and working conditions also remain stable regardless of the presence of an injury. For example, if a person prefers mechanically oriented or realistic activities prior to his or her injury, it is unlikely that his or her interests will change dramatically post-injury (Rhoe & Krause, 1998). To ensure vocational success and sustained employability, it is critical that rehabilitation professionals help persons with SCI identify possibilities that not only match their physical and functional abilities but that are also congruent with their aptitudes, interests, values, and personality.

The Need for Research on Return to Work for Women with SCI

Although strong research on employment following SCI exists, a closer examination reveals that it is lacking in terms of investigating and addressing the vocational experiences, needs, and issues of women. Similar to the overall body of research on SCI, the majority of studies related to employment include predominately large samples of Caucasian men, with recommendations and findings generalized to all persons with SCI (Castle, 1994; Conroy & McKenna, 1999; Devivo & Fine, 1982; Krause, 1992; Krause & Anson, 1996; Schonherr et al., 2004; Ville & Ravaud, 1996). To attempt to understand the vocational and/or employment needs of women with SCI, one is limited to studies primarily conducted on men, studies with small samples of women, or studies on the employment needs of women with disabilities as a whole (Fulton &

Sabornie, 1994; Keim, Strauser, & Ketz, 2002; Vash, 1982). Although all SCI findings are inherently valuable, the specific return to work needs of women with SCI remain, at best, speculative.

Many studies, at first glance, claim to measure the differences of gender relative to SCI, however, closer examination reveals findings based on disproportionate samples of male and female participants. Some studies collapse the gender category, reporting and generalizing results as applicable to all persons with SCI. In addition, many studies that had male and female ratios close to that of the make up of the national SCI average (80% male, 20% female) do not consider or acknowledge gender issues (Elliott, Witty, Herrick, & Hoffman, 1991; Krause, 1992; Tate, Maynard, & Forchheimer, 1993).

Given our competitive employment market as well as the significance that society places on all persons to be independent, valuable, contributing, and productive members of society, it is critical that women with SCI are afforded the appropriate services, education, opportunities, and necessary accommodations to enable help them to become gainfully employed. In summary, little is known about the return to work experiences, needs, issues, or motivations of women with SCI or how they are distinctly different from those of men. In addition, little is also known about why women with SCI are unable to return to work or why they may choose or not choose to return to work.

Given what we know from reported Model SCI System demographics it is likely that a woman who sustains a SCI: (a) will be of working age with many productive years remaining to engage in competitive and gainful employment; (b) will return to the community to live independently or in a noninstitutional residence following discharge from acute care or rehabilitation; (c) will be single or have a reduced probability of

marrying or remaining married following injury; and (d) can expect to live a near normal life expectancy, if she does not experience any extenuating complications as a result of the SCI.

Purpose of the Study and Research Questions

The purpose of this study was to gain an increased understanding of the return to work experiences of women with SCI as well as issues or barriers associated with the ability or inability to return to work. Personal, work, home, and community factors that influence the perceptions of quality of life and job satisfaction for women with SCI were also investigated. More simply put, the intention of this study was to gain an in-depth understanding of what it is like to be a woman with a spinal cord injury who has returned to work or may be considering (or attempting to) return to work.

This study also focused on understanding the relationship that exists between a woman's employment status and its influence on quality of life, as well as the relationship between job satisfaction and quality of life. In addition, this study sought to understand barriers associated with a woman's ability or inability to return to work. To achieve this understanding, the following research questions were posed:

1. What is the difference in terms of quality of life for women with SCI who are employed and women with SCI who are unemployed?
2. What is the difference in terms of job satisfaction for women employed in positions for which they are qualified and women employed in positions for which they are under or overqualified?

3. What is the difference in terms of quality of life for women employed in positions for which they are qualified and women employed in positions for which they are under or overqualified?
4. What is the difference in terms of quality of life for women who are unemployed but desire to be employed and women with SCI who are unemployed but do not desire to be employed?
5. What is the relationship between job satisfaction and quality of life for women with SCI who are employed?

CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of the literature on the return to work related needs and experiences of women with SCI. To gain a greater understanding of these needs and experiences, this chapter will specifically review literature related to: (a) employment and return to work implications for persons with SCI, women with physical disabilities, and women with SCI; (b) quality of life for people with disabilities and adults with SCI; and (c) job satisfaction for people with disabilities.

Employment and Return to Work and Persons with SCI

Competitive employment following SCI has been studied and written about for the last four to five decades (Castle, 1994; Conroy & McKenna, 1999, Devivo & Fine, 1982; Krause, 1992; Krause & Anson, 1996; Schonherr et al., 2004; Ville, 1996).

Although the employment outcomes of persons with SCI have been investigated across many studies, there is still relatively little known about the process by which persons with SCI secure employment, barriers that preclude employment, or the factors that ultimately facilitate one's return to work following SCI (Murphy, Young, Brown, & King, 2003).

Research shows that being gainfully employed contributes to the overall life satisfaction for persons with disabilities (Kinney & Coyle, 1992; Yasuda, Wehman, Targett, Cifu, & West, 2002). Regardless of gender, the employment of persons with SCI has historically been considered one of the most significant, yet difficult, goals to achieve following SCI. Value, worth, and status are often weighed against vocation or how a person makes his or her living (Yasuda et al., 2002).

For persons with SCI, employment has been established as a critical factor in overall adjustment and rehabilitation. Re-entry into the workforce is considered the ultimate marker of success following or even during completion of physical rehabilitation (Devivo & Fine, 1982; Devivo, Rutt, Stover, & Fine, 1987; Krause, 1996). Employment has been identified as influencing life satisfaction, quality of life, and has been closely associated with self-esteem and self-concept (Hess, Meade, Forchheimer, & Tate, 2004; Krause, 1990, 1992, 1996; Krause et al., 1998). Hess et al. (2004) indicated that better self-esteem, higher life satisfaction, and a more positive sense of well-being were among the most important consequences of being employed. For persons with SCI, employment has also been positively associated with better community integration (Meade, Lewis, Jackson, & Hess, 2004).

It is difficult to gain an accurate statistic of the number of persons with SCI who are employed as employment figures vary within the literature depending on research methodology. Most studies have revealed return to work employment rates following SCI to be low. A review of the available body of employment related literature by Trieschmann (1988) revealed employment rates ranging between 13-48% for persons with SCI. In another review of return to work related literature, Athanasou, Brown, and Murphy (1996) found employment rates ranged from 11-69% between the years 1976 to 1992. Other studies support findings similar to Trieschmann and Athanasou et al. (Devivo & Fine, 1982; Devivo et al., 1987). The NSCISC (2006) reports post-injury employment rates to be more promising among persons with paraplegia than among persons with quadriplegia. For example, statistics indicate that for persons with

paraplegia, the percentage of those employed increased steadily over time: from 14.6% in the first post-injury year to 46.5% in year 30. For persons with quadriplegia, the percentage employed increased from 13.7% in year 1 to 38.8% in year 30 (NSCISC, 2006).

Variations in research findings related to the employment of persons with SCI may have occurred for several reasons. One salient reason may be how the term *employed* is operationally defined (Yasada, Wehman, Targett, Cifu, & West, 2002). For example, some studies may define the term *employed* more broadly, including homemakers or students, while others may define *employed* more narrowly, excluding homemakers or students. Another reason for the variation in findings may be attributed to individual or participant characteristics of the sample being studied (Yasada et al., 2002). For example, employment rates are known to increase as the amount of time one has been injured increases (Jang, Wang, & Wang, 2005; Krause, 1992, 2003; Krause & Anson, 1996; Krause & Broderick, 2005; Krause et al., 1998; Meade, Lewis, Jackson, & Hess, 2004). Given that employment rates are known to increase as the amount of time since the injury increases, one would expect the employment rates of newly injured persons to be lower than the employment rates of persons who are 7 to 10 years post-injury. Krause and Broderick (2005) conducted a longitudinal study spanning 25 years and found that employment statistics clearly improved over time. As employment rates increased so did satisfaction with employment. In addition, greater stability in terms of tenure with one's employer was observed over time (Krause & Broderick).

Variation in employment rates could also be due to the geographic location of the participants studied (Yasada et al., 2002). Persons who reside in urban locations, for

example, may have greater access to transportation, employment opportunities, or resources than do persons who reside in rural locations.

Yasuda et al. (2002) reviewed return to work related research for persons with SCI, including the effects of demographics, occupational characteristics, workplace accommodations, quality of life, functional limitations, and other variables. In terms of persons who returned to work post-injury, Yasuda et al. (2002) report that persons are more likely to return to work with a new rather than former employer. Those who did return to work with their former employer returned to work much earlier than persons who returned to work with a new employer. For those employed at the time of injury, an increased probability of returning to work was observed within the first few years' post-injury. Although gender was not reported to be significantly associated with return to work, Yasuda and her colleagues reported a significant difference between gender and type of work secured or performed. Males were twice as likely as females to be engaging in paid work activities, and females were more likely to be engaged in non-paid activities such as volunteering, homemaking related activities, or full and part-time education (Yasuda et al.).

Yasuda et al. (2002) also reported race, age, and level of education to be significantly associated with return to work. One's age at time of injury was found to be the most significant predictor of return to work. Persons injured before the age of 18 were found to have the highest employment rate (69%) while the employment rate of persons who were injured after the age of 45 dropped to only 9%. Yasuda and her colleagues (2002) also reported a significant relationship between life satisfaction, adjustment after SCI, and return to work. Persons who returned to work post-injury reported fewer

medical treatments, higher levels of education, greater life satisfaction, and rated their overall adjustment higher than did persons who were unemployed (Yasuda et al.).

Overall, Yasuda et al. (2002) provide professionals with a helpful review of the return to work literature for persons with SCI. One observed limitation related to the Yasuda et al. study is the lack of information related to percentages of males and females in the research studies reviewed. Reference is made that gender did not seem to be significantly associated with return to work, however, it is unclear how large of a sample these findings are based upon. In terms of women with SCI, Yasuda's et al. findings would appear to be more solid if their study included a matched or approximately matched sample of both women and men. Reference is also made to the significant relationship between gender and type of work performed, however, it is not known whether or not the women in the study preferred to engage in non-paid activities or did so because they could not secure gainful employment.

Level of education, age at time of injury, and race have been identified as potential factors influencing the employment of persons with SCI. Level of education has been consistently and positively correlated with gainful employment for persons with SCI (Castle, 1994; Devisor, Rutt, Stover, & Fine, 1987; Krause, 1992, 1997; Krause et al., 1998; Noreen & Shepherd, 1992; Young et al., 1994). In a study by Krause (1992), 95% of participants with SCI who had 16 years or more of education were found to have been gainfully employed at one time or another post-injury. Age at time of injury has also been consistently correlated with employment (Krause, 1990). Krause identified a negative correlation between age at the time of injury and return to work indicating the younger the age at time of injury, the more likely one is to become gainfully employed. Krause

also found the greatest probability of return to work to be for persons who were injured before the age of 18. Persons falling within the 16-30 age range had the greatest rate of employment while those in the 51-60 range had the lowest (Krause, 1990).

Traditionally, race has been significantly related to gainful employment for persons with SCI indicating that White Americans are more likely to be employed than minorities (James, DeVivo, & Richards, 1993; Krause et al., 1998; Young et al., 1994). James et al. (1993) investigated post-injury employment differences between African Americans and White Americans with SCI. African American females were twice as likely to be employed as African American males while the exact opposite was true for White Americans; White American males were more likely than White American females to be employed. It is unclear how to account for these findings. Age and level of education were also identified as significant predictors of employment. Similar to Krause's (1990) findings, James et al. found that for both African Americans and White Americans, age of injury influenced the probability of returning to work. Despite race, people injured between the ages of 46-61 were the least likely to secure gainful employment. For both African American men and women, level of education was identified as one of the most significant predictors of securing gainful employment (James et al., 1993). A limitation of the James et al. study is the lack of inclusion of the post-injury employment differences between African American men and women and White American men and women.

Castle (1994) investigated the pre and post-injury employment status and occupation of 114 persons with SCI in the UK. The group of participants included 94 men and 20 women with SCI who were one to seven years post-injury. Data was

collected in the form of a questionnaire divided into the areas of personal information, details related to present work/training/volunteer work, contact with employment services, work oriented rehabilitation received while in the hospital, and interests/hobbies and equipment essential to maintaining one's lifestyle (Castle).

Results indicated an increase post-injury in unemployment, number of persons in the role of homemaker, and participation in full-time education/training, and volunteer work. One's occupational classification was also investigated indicating a significant difference between one's pre and post-injury occupational classification. Participant's indicated pre-injury occupations ranging across all employment categories, with engineering and science classifications being the most prevalent. Post-injury occupational classification, however, indicated a shift towards the occupational classification related to the administration, clerical, and finance category (Castle, 1994).

Murphy, Young, Brown, and King (2003) investigated the influence of injury, demographics, and psychological characteristics on employment status for 459 persons with SCI. All participants received treatment at one of two SCI treatment facilities in Victoria, Tasmania, and New South Wales. Demographics, injury, and psychological variables explained 30% of the variance between the employment criterion: employed vs. not employed. In their final analysis, Murphy et al. indicated the demographic variables of level of secondary schooling, obtaining training or further education post-injury, time since injury, chance locus of control, internal locus of control, and work attitude contributed significantly to a person's employment status. Psychological variables, however, were indicated to play an even greater predictive role in returning to work than demographic variables. Both work attitude and locus of control were identified as playing

a significant role in job seeking following SCI (Murphy et al., 2003). One potential limitation of this study was that participants studied were located in southeastern Australia. At the time of this study, the researchers reported an employment rate of 36% for persons in the U.S. with SCI, while the reported employment rate for persons in Australia with SCI was 47%. It is unclear what factors or services may have contributed to the increased employment rate of persons with SCI in Australia. The difference in national employment or unemployment rates for all persons is not known, which could significantly influence employment opportunities.

McNeal, Somerville, and Wilson (1999) investigated work related problems and accommodations of persons with either SCI or post-polio syndrome. Forty-six participants with SCI (84.8% male, 15.2% female) were interviewed who had worked at least 5 years pre-injury and were either currently working or unemployed for less than 5 years. Of those interviewed, 67.4% were working full-time, 21.7% were working part-time, while 10.9% were either unemployed or retired. Participants indicated being employed for an average of 12.4 years post-injury and they had been with their current or last employer an average of 9.2 years. Half of the participants (50%) indicated being employed in professional or executive level careers; 30.4% indicated being employed as technicians or analysts/designers; 2.2% indicated being employed as managers, administrators, or officials; and 6.5% indicated being employed in clerical/word processing positions. The remaining participants (10.9%) indicated being employed under the *other* classification (McNeal et al.).

In interviewing the 46 participants, a total of 480 work related problems were identified. An analysis of the problems indicated the majority of work related problems

related to the area of accommodation. For example, three out of every eight identified work related problems were related to accommodations that were *unsatisfactory* to participants. The most commonly reported reason for *unsatisfactory* accommodation was the lack of an accommodation being identified. When accommodations were identified, employers were reported to be generally supportive, paying for 59.1% of the reported accommodations needed. Of the 480 work problems reported, only 18 accommodations were reported to be refused (McNeal et al., 1999). In terms of this study, lack of further information related to the accommodations appears to be a limitation. It is not known why accommodations were not identified or what attempts were made by either the participant or the employer to identify such needs. Further information and details would help readers gain a greater understanding of how to help both persons with SCI and employers identify accommodation needs and options. Further information could also help professionals bridge the communication gap between persons with SCI and employers to ensure both optimal employee performance and employer satisfaction.

Schonherr, Groothoff, Mulder, Schoppen, and Eisma (2004) investigated the return to work process of person with SCI including the role of one's early expectations related to returning to work. The group consisted of 52 male and 5 female Dutch participants. Results indicated that one's expectations regarding return to work or participating in the workforce after SCI are important indicators of vocational success. Of the 22 participants who reported during their initial hospitalization that they believed they would be able to return to work with their employer, 20 were able to do so successfully. Of the 23 participants who believed that they would not return to their place of

employment but expected to find another job or study, 11 successfully returned to work (Schonherr et al.).

The researchers also reported that positive return to work expectations were associated with higher educational levels. Fifty-nine percent of those considered in the *lower* educational classification successfully reintegrated, 69% of those considered in the *intermediate* educational classification successfully reintegrated, and 100% of participants considered in the *higher* educational classification successfully integrated (Schonherr et al., 2004). Schonherr's et al. findings support the significance of identifying and fostering one's beliefs related to the ability to return to work early in the course of one's rehabilitation.

Conroy and McKenna (1999) investigated vocational outcome following SCI by assessing variables that influence vocational outcome, identifying barriers to gaining and maintaining employment, and by studying the effects of various variables on the type of work that persons engage in following SCI. Conroy and McKenna considered individual and injury-related factors including age at time of injury, time since injury, level of injury, pre-injury level of education, and pre-injury occupation. Circumstantial factors were also considered including transportation, access or accommodation difficulties, perceived workplace discrimination, perceived level of skills, and financial disincentives to work. Data was collected from 129 male and 38 female persons with SCI from the Princess Alexandra Hospital Spinal Injuries Unit in Queensland, Australia., via a mailed self-administered questionnaire and by accessing information from the participant's medical record (Conroy & McKenna).

Similar to other studies' findings, Conroy and McKenna's findings (1999) suggest that persons who were younger at the time of injury (below 30), had been injured for longer periods of time, and had higher levels of education were more likely to return to work or pursue further education post-injury. Being able to drive independently and having a higher level pre-injury occupation/position were also associated with current employment. Results also linked being younger at the time of one's injury and having a longer duration of injury with higher scale occupations post-injury while lower levels of pre-injury education were associated with lower scale occupations. Conroy and McKenna suggest that persons who are employed pre-injury in lower level positions that provide less financial compensation may experience less incentive to return to work post-injury. Disincentives may exist including the fear of losing governmentally funded services and medical subsidies.

Having a complete cervical lesion, being older at the onset of injury (over 30 years), having a lower level of pre-injury education (high school or less), and possessing a perceived lack of skills were associated with being unemployed. Of the 40 participants who had returned to work or school following their injury but who were not employed at the time of Conroy and McKenna's study, 39 gave lack of skills and the perception that the job demands were too difficult as the reasons for terminating employment or education. Conroy and McKenna's findings support the need to help persons with SCI identify and develop their interests, aptitudes, abilities, and skill sets. Conroy and McKenna's findings also support the need for professionals to help persons with SCI experience positive successive experiences post-injury.

In a recent study, Lidal, Huynh, and Biering-Sørenesen (2007) reviewed literature related to return to work (RTW) including employment rates, factors impacting employment, and RTW interventions for persons with SCI. In their review of 123 studies, overall employment rates ranged from 11.5% to 74%. For those persons employed at the time of injury, 21-67% returned to work after injury. RTW was found to be greater for persons who were injured at a younger age (during childhood or adolescence), who had less severe injuries, and who were more functionally independent. Similar to other findings, employment rates were observed to increase as time post-injury increased. The most commonly identified barriers to employment were related to transportation, health and physical limitations, lack of work experience, education/training, architectural barriers, employment discrimination, and loss of benefits (Lidal et al.).

Employment and Women with Disabilities

In considering both persons with and without disabilities, a 2000 Lou Harris poll reported the employment rate for persons without disabilities to be 81% while the employment rate for persons with disabilities was reported to be 32%. When gender is considered, employment statistics are observed to become worse for women. According to the U.S. Bureau of Census (1994), more men than women with disabilities are employed. The U.S. Bureau of Census also indicates a 59.9% employment rate for men with *any disability* and a 45.7% employment rate for women with *any disability*. This 14.2% difference verifies the disparity that exists between the number of men and women with disabilities who are employed (Randolph, 2005). Baldwin, Johnson, and Watson (1993) report somewhat less promising statistics for women with disabilities, reporting employment rates that are 28% lower than that of men with disabilities.

Jans and Stoddard (1999) also indicate significantly different employment statistics for women with and without disabilities. In addition, significantly different employment statistics are reported related to severity of injury or between women who are considered to have a *non-severe* disability compared to women who are considered to have a *severe* disability. For example, approximately 68% of women who were considered to have a *non-severe* disability were employed compared to approximately 25% of women who were considered to have a *severe* disability. In contrast to women with disabilities, approximately 76% of women without disabilities were employed (Jans & Stoddard, 1999). These findings support the reality related to the difficulties that women with SCI face in terms of return to work.

A significant difference is also identified between the employment rate of women with and without disabilities. Compared with women without disabilities, women with disabilities were employed at a significantly lower rate and when employed were identified to be working in lower paying, lower skilled service and domestic jobs. In comparing the earnings of men and women with disabilities, women with disabilities who were employed full-time earned only 65% of the earnings of men with disabilities who were employed full-time, even when they were more highly educated (Johnson & Lambrinos, 1985). In addition, women with disabilities who are also members of a minority group may be subject to *triple jeopardy* or *dual discrimination* as a result of gender, disability, and minority status (Reed, 1999; Stuart, 1992).

Randolph (2005) investigated the meaning of workplace discrimination for women with disabilities by interviewing women regarding the effect of their disability on their typical workday, employment and job seeking history, and employment related

opportunities and promotions. Five common themes were identified from the interview data: pre-conceived notions of others, attitudes of others, lack of accommodations, lack of inclusion, and exploitation. These five themes represent the women's experiences including their experiences of discrimination, nondiscrimination, and how they coped overall with their experiences (Randolph).

The women interviewed experienced discrimination in the workplace in several ways. They expressed beliefs that employers and co-workers had pre-conceived notions about what they could and could not do, and that these pre-conceived notions limited their overall potential as employees. One participant with SCI voiced sometimes being *left out* or *passed over* for job opportunities due to others believing that she would not want to be involved because she could not physically participate. This participant went on to further explain that she felt others would often keep her in *a box* instead of asking what she could or could not do (Randolph, 2005).

The women interviewed also observed behaviors of employers or co-workers that they described as either mistrustful and cruel, or patronizing and overprotective. Inappropriate questions asked during the interview process were also reported with interviewers often focusing more on the disability than on potential skills. A participant interviewed with SCI voiced feeling that preconceived notions are often more prevalent during the interviewing process. She recalled a time during an interview when she was asked about her attendance. The interviewer went on to voice concern about whether or not she had too many health concerns that might result in poor work attendance (Randolph, 2005).

Participants also voiced feeling that they *had to prove* that they could do things, which resulted in going above and beyond what others would do. For example, one participant reported bringing other employees breakfast to prove that she could do things. A participant with SCI voiced feeling that women with disabilities had to work harder to prove themselves than people without disabilities. She stated feeling that women with disabilities had to work harder, had to have a better attendance record, and had to prove that their disability did not in any way, shape, or form affecting their ability (Randolph, 2005).

Lack of accommodation in the workplace was also stated as a barrier that prohibited the women from full participation in the employment experience. The women believed that the lack of full accessibility in the workplace reduced not only their physical access but also their social access and connectiveness, possibility limiting their job opportunities and advancement. When work related barriers were addressed, it was when they advocated on their own behalf. In addition, the women interviewed expressed feeling discrimination in the form of exploitation or being hired to meet quotas or being the *token disabled person*. Discrimination was also experienced in the area of pay and position. The women believed that they were being paid less than what a man would be paid to perform the same job. There was also a general belief that White men still occupied the upper echelon in most companies (Randolph, 2005).

In contrast, the women described nondiscrimination in the workplace as situations where their skills, abilities, and assets became the primary focus rather than their disability. In terms of accommodation, nondiscrimination was defined in terms of employers being flexible with scheduling related to physical complications or an

exacerbation of symptoms as well as employers making the appropriate workplace revisions or providing adaptive equipment to allow employees to perform optimally in the job. Nondiscrimination was also defined as having objective criteria for salary increases and promotions (Randolph, 2005).

Randolph (2005) confirms the continued need for research and policy analysis related to discrimination of women with disabilities. Randolph also confirmed the need for further research of a larger population including women with different types of disabilities and different types of occupations. Further research is also needed related to the concept of *triple jeopardy* that minority women with disabilities may experience.

Moore (2005) also investigated the ways that women with severe work disabilities attributed meaning to their lives, experiences, and decisions. Moore interviewed five women with various disabilities, age 30 to 63, who were considered to have one or more severe physical or psychiatric disabilities. Qualitative research methods were utilized incorporating grounded theory techniques to investigate and understand the meaning the women attributed to their lives and experiences. The recurring central theme throughout the interviews related to the need of the women to contribute to something larger than themselves. Regardless of the question asked, the most commonly cited response to interview questions was “reaching out to others.” This theme was evidenced in the participant’s words, actions, and future goals. Of central importance to the core theme of contributing was the need to develop and maintain connections to others, to participate in both paid and unpaid work, and to engage in religious or spiritual development (Moore, 2005).

Participants developed and maintained their connections in various ways as a means to be part of something larger than themselves. For example, participants voiced sharing their personal experiences with others, caring for and about others, offering advice, and reaching out to others in need in whatever ways they could, whenever they could. Participants also voiced minimizing their own experiences by using humor or shifting the focus from themselves to others to continue developing and maintaining their connections with others (Moore, 2005).

Competitive employment also remained a key goal. In explaining her view of employment, one participant voiced that she did not feel like she was *anybody* unless she was working and able to give back. For all of the women, emphasis was placed on the importance of meaningful contribution or working in a position that somehow impacted the quality of life of another. Formal and informal work related to volunteer activities were also important to the participants because it allowed them to be part of something larger. Through their roles, whether paid or unpaid, the women found opportunities to contribute to something larger than themselves and as a result arrived at a deeper understanding of the meaning of their own lives and experiences. In summary, the women interviewed viewed contributing to others and society as the most important aspect of their lives. Disability was not a primary focus in the interviews or in the women's lives; disability only became salient when it somehow resulted in the loss or lack of opportunities to develop and maintain relationships with others. Severity of disability also did not influence the women's desires or efforts to contribute (Moore, 2005).

Moore (2005) suggests that in working with women with disabilities, counselors must explore the individual meaning of work for each person. The focus of work should not be so much on whether or not one is being paid but on what meaning it has for each person. Super (1994) suggests that life satisfaction or the level of satisfaction that one experiences with one's life is dependent on "the extent to which an individual finds adequate outlets for abilities, needs, values, interests, personality traits, and self-concepts" (p. 207).

Randolph and Andresen (2004) investigated the relationship between disability, gender, and unemployment in the United States. More specifically, Randolph and Andresen investigated the disparity in participation of employment for women with disabilities. Their study involved analyzing data related to employment and disability that was collected as part of a special surveillance effort in 1998 and 1999 by the Centers for Disease Control and Preventions (CDC). In 1998 and 1999, the CDC's Behavioral Risk Factor Surveillance System (BRFSS) was initiated asking approximately 66,000 respondents questions about disability in 11 states and the District of Columbia. The BRFSS is a state-based random survey that tracks the health behaviors, risk factors, and health status of adults in the U.S. In addition, the BRFSS includes variables related to general health status and health-related quality of life (Randolph & Andresen, 2004).

Results of the survey indicate 13.9% of the 66,592 participants aged 18-64 had a disability. The International Classification of Functioning, which is defined by the World Health Organization (2001), describes optimal health as resulting from the ability of a person to participate in activities that involve the dynamic interaction of body function and structure, environment, and personal factors. In others words, optimal health is

achieved through one's ability to participate in gainful employment (Randolph & Andresen, 2004).

In summary, those persons who identified themselves as being *limited* or *disabled* were identified to be older (mean age of 46.1 compared with 39.3), slightly more likely to be female, and much more likely to report being unemployed (51.3 versus 19.5%). Although those who identified themselves as *disabled* did not differ by ethnic and race groups, they were more likely to have lower educational and income levels, and were more likely to have Medicare coverage (Randolph & Andresen, 2004). There was a significant gender difference in terms of employment for women whether they were disabled or not; however, the difference was greater for women who were *disabled*. More specifically, women with disabilities were approximately 1.4 times more likely to be unemployed than men with disabilities. Among men with disabilities, 45.3% reported being unemployed compared with 55.1% of women with disabilities who reported being unemployed. For those who reported no presence of disability or limiting condition, unemployment was 11.7% for men and 25.1% for women (Randolph & Andresen, 2004).

In regard to gainful employment, the findings support an association between disability and gender. More specifically, women with disabilities are at greater risk of being unemployed than men with disabilities. In summary, disparity continues to exist in regards to employment for both women with and without disabilities. These findings suggest that both disability and gender continue to be barriers to gainful employment and to women experiencing optimal health (Randolph & Andresen, 2004).

Following the results of Randolph and Andresen's study (2004), Randolph (2004) continued to investigate the impact of disability on employment status and income by

utilizing data from the disability supplement of the 2000 Behavioral Risk Factor Surveillance System from the Centers for Disease Control and Prevention. In addition to investigating the impact of disability on employment status and income, potential confounding variables were also examined regarding their influence on the results. In considering the effect of disability on income, the disability scale consistently explained a significant variance of income, however, education and marital status explained more of the variance of income than disability. Results were similar across the gender category except for the variable of having children. Having young children explained a significant variance of income for men but not women. The variable of race was found to be inconsistent in explaining a significant variance of income. In summary, persons who were female, disabled, less educated, uncoupled, and had young children were more likely to have lower levels of income (Randolph, 2004).

In considering the effect of disability on employment, disability was found to be a strong negative predictor of employment status. Being female and older was also found to be a strong negative predictor of employment status while education continued to be a strong positive predictor. Race continued to be inconsistent in explaining a significant variance of employment, except for self-employment, which was a negative predictor for African Americans and Hispanics. Marital status was a negative predictor of employment for the population as a whole and for females, but was a positive predictor for males. Having young children remained a negative predictor for females and the population as a whole but was indicated to be a positive predictor for males. In summary, persons who were female, disabled, less educated, and had young children were less likely to be employed (Randolph, 2004).

In conclusion, gender appeared to have a strong influence on both level of income and employment status suggesting that women with disabilities had more difficulties in securing gainful employment and becoming financially stable. These findings are consistent with other literature (Barnartt & Altman, 1997; Gershick, 2000).

Employment and Women with SCI

Although research on employment for persons with SCI exists, a closer examination reveals that it is lacking in terms of investigating and addressing the vocational experiences, needs, and issues of women with SCI. Research that specifically focuses on employment or the career/vocational issues and implications of women with SCI is an area that has yet to be specifically explored.

Similar to the overall body of research on SCI, the majority of studies related to employment for women with SCI include predominately large samples of Caucasian men, with recommendations and findings generalized to all persons with SCI despite gender or ethnicity (Castle, 1994; Conroy & McKenna, 1999, Devivo & Fine, 1982; Krause, 1992; Krause & Anson, 1996; Schonherr et al., 2004; Ville, 1996). To attempt to understand the vocational or career related needs of women with SCI, one is limited to studies primarily conducted on men, studies with small samples of women, or studies on the employment needs of women with disabilities as a whole (Fulton & Sabornie, 1994; Keim, Strauser, & Ketz, 2002; Vash, 1982).

The majority of studies related to employment following SCI typically have female sample sizes that range from approximately 13-20% (Conroy & McKenna, 1999; Dowler, Bastiste, & Whidden, 1998; James, Devivo, & Richards, 1993; Krause, 1992; Murphy, Young, Brown, & King, 2003). Many of the studies that include small samples

of women with SCI fail to directly mention that they actually took part in the study or fail to discuss how the experiences of women with SCI differ from those of men. Although all research findings are inherently valuable, the specific vocational and/or career related needs of women with SCI remain, at best, speculative.

Given what we know about the difficulties that men with SCI encounter in obtaining employment (Conroy & McKenna, 1999; Krause, 1992), it is likely that those experienced by women are just as challenging with the added issue of potential sexism. While men with disabilities, as a whole, face serious employment issues, women with disabilities confront additional issues and barriers that may limit their full participation in the workforce (Fairchild, 2002). In terms of securing and maintaining competitive employment, women with disabilities face *double or dual discrimination* in the workplace because of their disability and gender (Fairchild, 2002; Randolph, 2005). Severity of disability is also known to significantly impact a woman's opportunities for employment. For example, as a woman's disability and functional limitations become more severe, as is the case for many women with higher level spinal cord injuries, her employment opportunities become more comprised (Jans & Stoddard, 1999).

The available body of research related to employment and women with SCI offers a limited glimpse into what it is like to be a woman with a SCI who is trying to enter, re-enter, or maintain a position within a competitive workforce. Young, Alfred, Rintala, and Hart (1994) found that while men with SCI were twice as likely as women with SCI to be gainfully employed, women were more likely than men to be engaged in productive yet unpaid activities, such as that of being a student, homemaker, or volunteer. When unpaid activities were considered, Young et al. (1994) found that women with SCI were actually

more likely to be in productive roles than were men with SCI. This finding confirms that women with SCI possess a desire to engage in productive and gainful community roles, yet may be forced into unpaid roles due to increased difficulties in securing gainful employment.

Quality of Life and SCI

A review of the literature related to quality of life and life satisfaction for women with SCI produces findings similar to those related to employment and SCI. In general, a significant amount of literature can be found related to QOL and life satisfaction for persons with SCI, however, studies that specifically look at QOL or life satisfaction for women with SCI remain next to nonexistent. Studies that focus on women with SCI and QOL primarily focus on QOL as it relates to one's physical or medical status. Once again, the majority of literature surrounding SCI, quality of life, and life satisfaction includes studies with large samples of males with SCI (Coyle, Lesnik-Emas, & Kinney, 1994; Hammell, 2004; May & Warren, 2001; Stensman, 1994), or studies that fail to differentiate between or acknowledge the influence of gender (Coyle, Lesnik-Emas, & Kinney, 1994; Krause & Dawis, 1992; May & Warren, 2001). As a result, men and women with SCI are often viewed as one all-inclusive group.

Tate and Forchheimer (2001) offer one of the only found studies to specifically look at quality of life and life satisfaction for women with SCI. Tate and Forchheimer investigated the role of selected factors including age, time since injury, and neurological status on the health-related quality of life and life satisfaction of women with SCI. In addition, Tate and Forchheimer also assessed gender differences across these factors. Tate and Forchheimer's sample consisted of 2,887 SCI participants (580 women and

2,307 men) from the NSCISC database. Tate and Forchheimer utilized the Medical Outcomes Study Short Form or Health Status Questionnaire (SF-12) and the Satisfaction with Life Scale (SWLS) to measure physical and mental QOL outcomes.

Tate and Forchheimer's (2001) results indicated that while women with SCI reported higher overall levels of life satisfaction than men with SCI, they also reported lower levels of mental-health related QOL. In terms of physical health-related QOL no differences were found between women and men with SCI. In addition, Tate and Forchheimer found the severity of one's impairment to be associated with health-related QOL and life satisfaction. Participants with lower levels of impairment indicated higher levels of global life satisfaction and physical well-being, but indicated lower levels of mental well-being. In contrast, participants with higher levels of impairment reported lower levels of global life satisfaction and physical well-being but higher levels of mental well-being (Tate & Forchheimer, 2001).

In considering gender, severity of injury, and physical well-being, while higher levels of impairment among men were associated with lower physical well-being, well-being increased among women as the severity of injury increased, except for women considered in the *most severe* impairment category. Age was also indicated to be associated with physical well-being for women. Younger women with SCI were found to report greater physical well-being. In addition, participants who had been injured for longer periods of time reported significantly higher levels of physical and mental QOL and life satisfaction. These findings are consistent with several other studies (Hall, Knudsen, Wright, Charlifue, Graves, & Werner, 1999; Krause, 1992; Krause & Crewe, 1987; 1991).

Tate and Forchheimer (2001) also suggest that economic factors are critical in shaping the QOL of women with disabilities. In considering gender, it is confirmed that women, in general, are less likely than men to be competitively employed and when they are employed, are likely to earn less than men (Hanna & Rogovsky, 1991; Jans & Stoddard, 1999). Also, when women with disabilities are compared to women without disabilities, women with disabilities are more likely to face a lack of employment opportunities, inaccessible work environments, and receive significantly lower wages. Women with SCI may also experience increased feelings of dependency, powerlessness, and vulnerability, leading to decreased QOL, as a result of increased obstacles or not being able to produce their own financial resources (Jans & Stoddard, 1999).

Quality of Life for Persons with Disabilities

The term quality of life was initially introduced in the 1950s. It was first introduced as a political slogan to refer to the idea of a group, or population, of people living the “good life.” In the 1970s a shift occurred; the term QOL that once applied more to large groups of people now applied more to individuals (Dijkers, 1996). Studies that specifically considered the QOL of persons with SCI did not begin to emerge in the literature until around the 1980s (Dijkers, 1996). In terms of SCI, Crewe (1980) was the first to consider QOL and SCI, finding persons with SCI to report less satisfaction with life than persons without disabilities, especially in the areas of employment, financial and physical well-being, and sexual and social relationships.

In 1998, Pain, Dunn, Anderson, Darrah, and Kratochvil considered the term *quality of life* within the context of rehabilitation, finding improvement in quality of life to often be the ultimate objective of rehabilitation. Pain et al. suggest QOL is generally

associated with a wide range of dimensions and the degree of congruency between such dimensions and one's hopes or expectations. Pain et al. also suggest that while there appears to be consensus that QOL is a multi-dimensional concept, defining those dimensions varies greatly. While there is broad agreement about the need to understand and define quality of life, "there are virtually as many definitions as there are investigators" (Pain et al., p.5).

QOL can be defined and explained in many different ways (Tate, Roller, & Riley, 2001). Hughes and colleagues (1995) reviewed 87 quality of life studies from diverse literature finding 44 varying definitions for the term QOL. QOL can be thought of as a multi-dimensional construct that influences various aspects or factors of a person's life: economical, physical, psychological, and social (Stensman, 1994; Tate & Forchheimer, 2001; Tate, Roller, & Riley, 2001). Fresher-Samways, Roush, Choi, Desrosiers, and Steel (2003) referred to QOL as a broad, multi-dimensional construct with an elusive definition.

McDaniel and Bach (1994) proposed four defining attributes of QOL: (a) that QOL is dynamic and fluid and can change from day to day; (b) that QOL is multi-dimensional and that there is diversity of personal values associated with these different dimensions; (c) that QOL is interactive in nature and can be influenced by interchanges between the person and his or her environment; and (d) that QOL is defined by the congruence between a person's hopes and expectations, and the actuality of one's conditions of life. Krause (1992) considers QOL to be part of the broader concept of life satisfaction. Krause suggests that life satisfaction is a construct that describes a person's perception of his or her QOL, which is both personal and subjective. In this sense, one's

satisfaction with life influences one's QOL or lack thereof. What defines life satisfaction and QOL for one may not define it for another. Krause (1992) further offers that life satisfaction comprises two critical areas: a person's economic satisfaction, which includes a person's finances and employment, and general satisfaction, which includes a person's social life, well-being, and emotional or psychological adjustment. QOL has also been correlated with other aspects of a person's life including satisfaction with one's career (Krause & Crewe, 1987; Lundquist, Siösteen, Bloomstrand, Lind, & Sullivan, 1991), educational attainment (Clayton & Chubon, 1994), leisure activities (Coyle, Lesnik-Emas, & Kinney, 1994), and place of residence (Boschen, 1996; Coyle, Lesnik-Emas, & Kinney, 1994; Stensman, 1994).

In terms of understanding the QOL of persons with disabilities, a review of the literature reveals Schalock to be one of the most cited authors. Schalock (1997) proposes eight core QOL dimensions for persons with disabilities. These dimensions include emotional/psychological well-being, interpersonal/social relations, material well-being (including employment and economic security), personal development (including personal competence and personal goals), physical well-being (including wellness and recreation/leisure), self-determination (including individual control and decisions), social inclusion (including dignity and worth), and rights (including privacy). In addition, Schalock suggests the following ten Core Quality of Life Principles to enhance the QOL for persons with disabilities.

- (1) QOL is composed of those same factors and relationships that are important to all persons,
- (2) QOL is experienced when a person's basic needs are met and when he or she has the same opportunities as anyone else to pursue and achieve

goals in the major life settings of home, community, school, and work, (3) QOL is a multidimensional concept that can be consensually validated by a wide range of persons representing a variety of viewpoints of consumers and their families, advocates, professionals, and providers, (4) QOL is enhanced by empowering persons to participate in decisions that affect their lives, (5) QOL is enhanced by the acceptance and full integration of persons into their local communities, (6) QOL is an organizing concept that can be used for a number of purposes including evaluating those core dimensions associated with a life of quality, providing direction and reference in approaching customer services, and using the resulting data for multiple purposes, (7) the study of QOL requires an in-depth knowledge of people and their perspectives, and multiple methodologies, (8) the measurement of QOL requires multiple measurement techniques, (9) QOL variables should occupy a prominent role in program evaluation, and (10) the application of QOL data is important in developing resources and supports for persons with disabilities and their families. (p. 246)

Fresher-Samways et al. (2003) looked at the perceived QOL of adults with significant disabilities who were living in a community setting. Six male and six female participants were interviewed about their QOL. The interviews were semi-structured and guided by six broad topics based on the work of Schalock. The guiding topics included community participation, relationships, personal growth and accomplishments, health and safety, respect and dignity, and individual choice and control. An analysis of the interviews produced the additional emerging topics of physical independence,

transportation, leisure, employment and economic independence, and housing (Fresher-Samways et al., 2003).

Results indicated the participants' highest perceived QOL to be related to the areas of health and housing. The participants' lowest areas of perceived QOL were related to the areas of transportation, physical accessibility, and employment. Participants reported that deficits related to transportation and physical accessibility compromised their QOL in other areas as well. In addition, perceived QOL was also related to the availability of appropriate supports and services (Fresher-Samways et al., 2003).

Spinal Cord Injury and the Quality of Life Index

Ferrans and Powers' Quality of Life Index (QLI) takes our understanding of QOL somewhat further in that it not only defines quality of life across domains, it also defines how important those domains are to a person. Four research studies were identified that utilized Ferrans and Powers' Quality of Life Index (SCI version) to measure quality of life for persons with SCI. May and Warren (2002) examined the external and structural validity of the QLI by looking at the relationship between quality of life and other constructs represented within the model of disablement. A sample of 98 persons with SCI (76 men, 22 women) was included in the study. The average age of the sample was 45.2 years. The average time since injury was 15.5. Over half (56.1%) of the participants indicated having quadriplegia. In terms of employment, 39% were employed and 44% were unemployed, while 17% were retired. Almost 60% of the participants reported having some level of post-secondary training. All but four of the participants reported living independently within the community (May & Warren).

Quality of life was measured with the SCI version of the QLI. The QLI included 37 items in each of two sections: one that measures satisfaction with various aspects of life and the other that measures the importance of those same aspects of life. Scores are calculated by weighting the satisfaction items with their corresponding importance items. Overall quality of life is reflected by the four domains of health and functioning, family, social and economic, and psychological and spiritual. The model of disablement, as defined through the use of several separate instruments, was used to evaluate the external component of validity. These measures included the standard neurological classification of SCI by the American Spinal Injury Association to define level of body functions, the Functional Independence Measure to measure participant activity levels, the Reintegration to Normal Living index to assess community participation, Rosenberg's Self-Esteem Scale, and Rotter's Internal-External scale to measure locus of control (May & Warren, 2002).

Generally, the results of May and Warren's (2002) study supported the external validity of the QLI. Some concern was expressed about the structural validity of the QLI with respect to the subscales. This was recommended as an area for future research. Specifically, results indicated the QLI was not significantly related to level of body function or level of activity. Participants demonstrated an internal locus of control, however, it was not shown to be associated with quality of life. QLI was found to be significantly related to community integration/participation and self-esteem (May & Warren). Research consistently supports the strong relationship between community integration/participation and greater quality of life (Clayton & Chubon, 1974; Decker & Schulz, 1985; Dijkers, 1997; Noske, Fuhrer, & Potter, 1995) and self-esteem and greater

quality of life (Coyle, Lesnik-Emas, & Kinney, 1994). The results of May and Warren's (2002) study are consistent with other studies that do not support the presence of a significant relationship between quality of life and level of injury (Decker & Schulz, 1985; Nieves, Charter, & Aspinall, 1991; Dijkers, 1999; Pierce, Richards, Gordon, & Tate; 1999). Pain, however, has been shown to be significantly associated with quality of life (Pierce et al., 1999).

Brillhart (2005) investigated the relationship of spirituality and life satisfaction among persons with spinal cord injury hypothesizing a positive relationship would exist between the two. Participants included a nationwide sample of 230 persons with SCI who were mailed a demographic questionnaire, the Quality of Life Index, and the Satisfaction with Life Scale (SWLS). The mean age of the sample was 44.6 years. Brillhart, whose background is in rehabilitation nursing, suggests that rehabilitation professionals have the "opportunity to work closely with clients and their families over fairly long periods of time" (p. 31). She goes on to suggest that this type of contact gives rehabilitation nurses the opportunity to "assess and plan care for clients and families as biological, cognitive, emotional, intellectual, and spiritual beings" (p. 31). Brillhart also suggests that as rehabilitation professionals prepare persons with spinal cord injury and their families for life after injury, attention should also be toward "spirituality and life satisfaction as important motivating elements for coping and adjusting to these changes" (p. 31).

Brillhart (2005) defined spirituality as "the sense of harmony and interconnectedness of self, others, nature, and the ultimate Other" (p. 31). Spirituality is the process by which persons come to experience purpose and meaning in life. Meraviglia (1999) suggests that spirituality is the source that provides persons with the

energy, motivation, and inspiration toward healing and growth. In addition, spirituality becomes a way of life in terms of how a person goes about his or her life, as well as thinks, acts, and lives (Meraviglia, 1999). Kearns (2002) suggests that it is a sense of spirituality that gives a person a sense of purpose and meaning about his or her life.

The SWLS evaluates five variables (life status compared with the ideal, conditions of life, satisfaction with life, gains in life, and desired changes with life). The QLI is a 74-item questionnaire that measures satisfaction with life and importance of life across four domains, including a spirituality/psychological domain. Results indicated a positive, significant correlation ($r = 0.621$, $p = 0.001$) between satisfaction with life (SWLS) and spirituality (QLI). Participant level of satisfaction increased for persons with SCI as their level of spirituality increased. As part of the survey, many participants added comments indicting their level of life satisfaction to be high with the exception of the feeling of frustration that comes from using a wheelchair (Brillhart, 2005). Other studies, as well, support the significant relationship between life satisfaction and spirituality (Riley, Perna, Tate, Forchheimer, Anderson, & Luera, 1998; Tate & Forchheimer, 2001). One limitation observed was the lack of results or discussion related to participants' overall quality of life score or the other three domains that made up overall quality of life in addition to the spirituality/psychological domain. In addition, I would have liked to have heard more about the results of the participants' SWLS scores and whether any of the five variables were specifically correlated or greater predictors of spiritual/psychological quality of life.

In an earlier study, Brillhart (2004) investigated quality of life and life satisfaction among persons with SCI who required various types of bladder or urinary

management. Successful bladder or urinary management is critical for all persons with SCI as complications can lead to recurrent hospitalizations, skin breakdown, feelings of embarrassment or shame, feelings of lack of control, and withdraw from community or social contacts and activities. Urinary complications are the fourth known cause of death for persons with SCI preceded by respiratory complications, heart-related illness, and injury-related illness. Persons at greatest risk are male (75% more likely than females with SCI), quadriplegic (4.35 times more likely), and paraplegic (2.20 times more likely; Frankel et al., 1998).

A sample of 230 participants with SCI completed a demographic questionnaire, the QLI, and the SWLS. The mean age of the group was 44.6 years while the mean for years post-injury was 12.2. Results indicated no significant difference between quality of life (QLI) and life satisfaction (SWLS) with regard to the type of bladder or urinary management used. In addition, no significant difference was observed between quality of life (QLI) and life satisfaction (SWLS) relative to level of injury or number of hospitalizations for urinary infections. There were, however, significantly higher QLI and SWLS scores observed for participants who had greater opportunities to work, attend school, or participate in activities. Significantly higher QLI but not SWLS scores were also reported for participants who did not experience skin problems associated with bladder or urinary dysfunction, an often common problem associated with bladder dysfunction (Brillhart, 2004).

Similar to the second study by Brillhart (2005), a limitation observed was the lack of results or discussion related to participants' overall quality of life score or domains that make up overall quality of life. The health and functioning domain of the QLI seems

especially important given that this study was interested in urinary dysfunction, which is related to health and functioning. In addition, I would have liked to have seen more results related to the SWLS and whether any of the five variables were specifically correlated or greater predictors of quality of life for this group of participants.

In addition to above studies, the QLI has also been used to investigate quality of life with persons experiencing varying medical-related conditions and complications. For example, the QLI has been used to investigate quality of life of persons with chronic fatigue syndrome (Anderson & Ferrans, 1997), life satisfaction before and after heart transplantation (Grady, Jalowiec, & Hetfleisch, 1993), quality of life after renal transplant (Hathaway, Hartwig, Winsett, & Gaber, 1992), racial and gender differences in quality of life following kidney transplant (Johnson, Wicks, Milstead, Hartwig, & Hathaway, 1998), quality of life after stroke (King, 1996), quality of life comparisons in cardiopulmonary rehabilitation patients (McEntee & Badenhop, 2000), HIV, self-transcendence, and quality of life (Mellors, Riley, & Erlen, 1997), and quality of life, pain, and psychological well-being in women with gynecological disorders (Rannestad, Eikeland, Helland, & Qvarnstron, 2000). These studies will not be reviewed in further detail as they do not specifically relate to the variables or participants of interest for this study.

Job Satisfaction and the MSQ

Job Satisfaction

Job satisfaction is a construct that defines a person's attitude or feeling toward a job. More specifically, it can be defined as "affect—or feeling and emotion—resulting from one's evaluation of the situation" (Dawis, 1994, p. 35). The construct can be experienced positively, known as *job satisfaction*, or negatively, known as *job dissatisfaction*. In

either case, job satisfaction is a complex construct with many variables influencing an individual's perception of job satisfaction or dissatisfaction (Dawis, 2004; 2005).

Hoppock was one of the first scholars to provide an in-depth study and understanding of work satisfaction (Dawis, 2004). In his research, Hoppock (1935, as cited in Dawis, 2004) found that while the majority of workers studied were satisfied with their jobs, their level of satisfaction was based less on their own economic situation and more on their economic situation as compared to that of their neighbors. Hoppock viewed work satisfaction more globally as a "composite satisfaction with the job as a whole" (as cited in Dawis, 2004, p.48). Believing that satisfaction with one's job varies across time and situations, Hoppock (as cited in Dawis, 2004) emphasized the difficulty in attempting to understand and explain those factors, circumstances, and issues related to job satisfaction for individual workers over time.

Around the same time, Mayo and his colleagues were exploring reasons for worker dissatisfaction by examining productivity and work conditions at the Western Electric Hawthorne Works in Chicago. The work by Mayo et al., known as The Hawthorne Studies, provided insight into the influence of varying work-related variables on productivity (as cited in Dawis, 2004). The work of both Hoppock and Mayo helped to continue the ignited interest and research related to job satisfaction and its influence on work satisfaction as a construct.

Herzberg, Mausner, and Snyderman (1959) investigated the relationship between job satisfaction and dissatisfaction to determine whether these constructs lie on a continuum. Herzberg et al. hypothesized that persons primarily operate from a neutral perspective or position, being neither satisfied nor dissatisfied. Herzberg et al. believed

that when favorable work related factors increase one's level of satisfaction, persons move beyond or away from the neutral position. When satisfaction factors are not present, however, persons move back to neutral rather than dissatisfied position. In addition, if negative factors were present and then removed, persons move to a neutral rather than satisfied position. Herzberg et al. determined that job satisfaction and dissatisfaction did not lie on a continuum but rather was influenced by a number of factors that either lead to job satisfaction or dissatisfaction. Recognition, achievement, advancement, the work itself, and responsibility were among factors that were identified to lead to job satisfaction. In contrast, company policies, technical supervision, interpersonal relations with peers, working conditions, and salary were among factors that were identified to lead to job dissatisfaction (Herzberg et al., 1959).

Weiss, Dawis, England, and Lofquist (1967) proposed that understanding and defining specific aspects of a person's work that leads to either *job satisfaction* or *dissatisfaction* would offer greater insight into the construct, *job satisfaction*. Weiss et al. developed the MSQ based on the premise that work satisfaction results from individual work needs being met. Individual workers have different needs and expectations that will hold varying levels of importance. The degree to which these needs and expectations are met, or not met, will determine one's level of job satisfaction. Needs and expectations, as well as their level of importance, can vary over time (Dawis, 2004).

Minnesota Satisfaction Questionnaire

Although several studies exist that have used the MSQ, very few have used the MSQ to investigate job satisfaction with persons with disabilities. No studies were identified in which the MQS was used to investigate job satisfaction with persons with

SCI. Chance and Houser (1993) investigated job satisfaction, using the MSQ short-form, among 27 persons with disabilities (18 males and 9 females) who were employed through a Massachusetts project with industry. The ages of the participants ranged from 24 to 59. Their average educational level was two years of college or trade school. In terms of job satisfaction, results of the study found that participants indicated being most satisfied when they were able to keep busy, could work alone/independently, had the chance to do different things, could do things for others, and had the chance to use their abilities/skills. The areas that participants indicated being least satisfied with related to the areas of pay and the amount of work they performed, chances for advancement, the way company policies were put into practice, and having the chance to tell others what to do. Chance and Houser (1993) found their sample indicated a slightly higher than average overall and intrinsic (related to characteristics of the job) job satisfaction than the average for other occupations in the MSQ manual. Extrinsic (related to the work environment) satisfaction for the sample was identified to be similar to MSQ norms (Chance & Houser).

Jagger and Neukrug (1992) investigated the relationship between congruence and job satisfaction of successfully rehabilitated vocational rehabilitation clients. At the time of their study, Jagger and Neukrug stated that no research had been found that specifically examined the relationship between congruence and job satisfaction of persons with disabilities. Participants included 44 males with a mean age of 41 and 28 women with a mean age of 40 who had been employed an average of 1 to 1.5 years. A cover letter explaining the study as well as the MSQ short-form, used to measure job satisfaction, was mailed to each of the employed participants. Holland codes were obtained for each client by reviewing closed client files by permission of the chief of the

Division of Vocational Rehabilitation of a northeastern state. Participants' interests were defined by one of three previous assessments including the Career Assessment Inventory, the Self-Directed Search, and the Strong Interest Inventory (Jagger & Neukrug, 1992).

Results indicated a significant positive correlation ($r = .26, p < .05$) between job satisfaction and working in a position that was congruent with one's interests. Jagger and Neukrug (1992) suggest that interest assessment grounded in Holland's theory can provide valuable information for both rehabilitation counselors and persons with disabilities to ensure successful job match, which can lead to greater job satisfaction. Jagger and Neukrug also stress the importance of examining clients' aptitudes, needs, and other client characteristics.

One potential limitation of this study was that participant interests (Holland code) were defined by different assessment measures and at different times. At the time this study was conducted, interest inventory results could have been completed by participants at any point within the past five year period. For example, it is possible that participants' interests could have changed somewhat over a period of years as a result of further education, increased exposure to the world of work, or increased work experience.

Young (2001) investigated the influence of a supportive employment program on job satisfaction. A total of 13 participants in sheltered work and nine in the supported employment group were included in the study. Participants in the supported employment group received assistance related to job search, help with application and interviewing skills, supportive counseling, and assistance with problem solving in the workplace. During a 4-week orientation program, participants in the sheltered work program received orientation to specific job duties, assistance with problem solving in the

workplace, and an introduction to available workshop staff. After the 4-week orientation, sheltered workshop staff primarily concentrated only on providing transportation and assisting participants with preparation for their trip to the work site. The MSQ short-form and interviews were completed at 4-week and 3 month intervals for both groups of participants (Young).

At the 4-week interval overall job satisfaction as measured by the MSQ varied little. The sheltered workshop participants had a mean of 4.00 with a range of 3.0 to 4.6 while the supported employment group had a mean of 4.02 with a range of 3.0 to 4.6. At the 3 month interval the sheltered workshop group showed a significant decrease in job satisfaction ($p < .05$) from month 1 to month 3. The items that reflected the significant difference were related to “having the chance to do different things from time to time,” “the competence of my supervisor in making decisions,” “the praise I get for doing a good job,” and “the feeling of accomplishment I get from the job.” For the supported employment group, no significant changes, positive or negative, were observed over time. The month one data revealed significantly greater satisfaction related to “the chance to do something that makes use of my abilities” for the sheltered group which continued into month three. At month one, the supported employment group indicated significantly greater satisfaction related to “freedom to use my own judgment.” This significance did not, however, continue with this group into month three. In addition, month three data also revealed significantly greater satisfaction for the sheltered workshop group related to “the chance to tell others what to do” and “the way my co-workers get along with each other” (Young, 2001).

In addition to the above studies, the MSQ has been used to evaluate job satisfaction with elementary school counselors (DeMato & Curcio, 2004), certified substance abuse counselors to determine the relationship between job satisfaction and clinical supervision (Evans & Hohenshil, 1997), African American counselor educators to determine the relationship between job satisfaction and racial climate within the workplace (Holcomb-McCoy & Addison-Bradley, 2005), Employee Assistance Program counselors (Sweeney, Hohenshil, & Fortune, 2002), and school psychologists (Anderson, Hohenshil, & Brown, 1984; Brown, Hohenshil, & Brown, 1998). These studies will not be reviewed in further detail as they do not specifically relate to the variables or participants of interest in this study.

CHAPTER 3

METHODOLOGY

The general purpose of this study was to describe and gain an increased understanding of what is like to be a woman with a spinal cord injury who has returned to work or may be considering (or attempting to) return to work. More specifically, this study was focused toward understanding the relationship that exists between a woman's employment status and quality of life. For those who were employed there was a desire to also understand the relationship between job satisfaction and quality of life. Personal, work, home, and community factors that influenced the perceptions of quality of life and job satisfaction for women with SCI were also investigated. In addition, this study sought to understand barriers associated with a woman's ability or inability to return to work.

Recruitment

A number of websites and list serves (see Appendix A) were contacted regarding the possibility of posting this study on their sites. The majority of the contacted websites had established research sections that invite persons with SCI to participate in research-related projects for the advancement of SCI related research and education. Several sites required me to email a copy of the study to their webmaster/site administrator who, upon approving the request, forwarded it to their list of site members to ensure the confidentiality of their list members. Only one site declined my request based on the question in my demographic section that asked participants to define their sexual orientation, a question that is commonly asked in research studies. In this case, I was told by their committee review spokesperson that the committee felt participants would not

want to continue completing the survey after being asked to define their sexual orientation.

Prior to beginning this research study, a pilot group of 25 people completed the survey and provided feedback. The group was asked to pay attention to unclear wording, grammatical errors, formatting errors, typographical errors, and ease of using the on-line format. Both written and oral feedback was considered and appropriate changes were made before the survey was posted on-line.

Participants

Inclusion criteria. The criteria for selecting participants for this study was based upon the following: (a) female individual with a SCI of traumatic or non-traumatic onset; (b) diagnosis of paraplegia, quadriplegia, or tetraplegia following SCI; (c) at least 18 years of age at the time of injury; and (d) a minimum of 1 year post-injury at the time of participation.

Participants were recruited primarily from national SCI websites; however, some participants were recruited through primary sources that were familiar with women who fit the abovementioned criteria. In these cases, sources forwarded my recruitment information and website link to potential participants asking them if they would be willing to participate in a study investigating the return to work experiences of women with SCI. Upon completing the survey, participants were asked to pass along the link to any other women with SCI who they felt might be interested in participating. At the end of the survey, participants had the opportunity to confidentially email the link to potential participants.

Sample size. In order to determine an appropriate sample size, an a priori power analysis was calculated using G*Power (Faul & Erdfelder, 1992). G*Power is a computerized freeware program that requires the researcher to input the alpha level, desired effect size, and power. For this study, an alpha level of .05 and a power level at .80 were selected. I used the G*power default effect size $f = 0.25$ because there was no previous knowledge that specifically considered employment, quality of life, or job satisfaction for women with SCI. According to Cohen (1977), .1 is considered a small effect size, .25 a medium effect size, and $> .4$ a large effect size. An alpha level of .05 was selected because this value is considered the standard minimum for rejecting the null hypothesis (Cohen, 1988). Finally, the level of power selected for this study was .80. Heppner, Kivlighan, and Wampold (1999) identify .80 as the acceptable level of power. Based on the above stated levels, the G*Power program calculated I needed a sample size of 158 for the present study.

Data Collection

Women with SCI were invited to participate in the on-line study by reading a summary that included a general overview of the study, rationale for the need for research in this area, goals of the study, an outline of my background as the researcher/principal investigator, and criteria for inclusion in the study (see Appendix B). Potential participants were initially recruited from the aforementioned SCI related websites (see Appendix A) and then directed via an active Internet link to PsychData, a web-based company that conducts and houses Internet-based social science research. Once directed to the site, all participants were required to read the informed consent statement (see Appendix C) and electronically give their voluntary consent prior to

beginning the study. If participants did not consent, they were thanked for their time and were not able to progress any further in the study. Upon giving consent, the participant was directed to the questionnaire, which included a demographic questionnaire, the Minnesota Satisfaction Questionnaire (MSQ), and the Quality of Life Index (QLI). My contact information was also provided in the event that participants had any concerns or questions related to the study. Participants were encouraged to contact me if they required accommodations to participate in the study. I was not contacted by any participants indicating that they needed accommodations, but if they were needed I had planned to communicate with each participant to facilitate whatever accommodation would have been needed for successful participation in the study.

Measures

Demographic questionnaire. The demographic questionnaire (see Appendix D) included questions related to: (a) age, race, ethnicity, and information related to SCI; (b) educational status; (c) medical status; (d) psychosocial status; (e) accessibility of one's home, community, and work environment in relationship to one's functional needs; and (f) employment. Three open-ended questions were also included that asked participants to briefly describe their overall experiences related to returning to work, what they believed to have been especially helpful to them in terms of returning to work, and what they believed rehabilitation professionals should know or do, that they might be unaware of, that would be beneficial in terms of assisting women with SCI in returning to work. In the demographic questionnaire section, the majority of questions were multiple choice with one of the choices being "other." This choice gave participants the opportunity to elaborate or provide an answer that was not available.

The Quality of Life Index (QLI; Ferrans & Powers; 1985). The QLI (see Appendix E) was designed to measure a person's quality of life in terms of life satisfaction. Ferrans (1990) defined quality of life as an individual's sense of well being that results from how satisfied or dissatisfied s/he is with areas of life that s/he identifies as personally important. The QLI measures both satisfaction and importance across various aspects of life. The questionnaire consists of two sections: the first section measuring satisfaction across various areas of life, and the second measuring the importance of those same areas (Ferrans, 1996; Ferrans & Powers, 1992). Each matched pair of satisfaction and importance questions are combined reflecting a score that indicates how satisfied the respondent is with the things that matter most or are most valued in his or her life. It is the importance rating for each question that determines how much impact the satisfaction rating has on the final score. High importance and high satisfaction produces higher scores while high importance and high dissatisfaction produces lower scores. In addition, scores on items that are of little or lower importance have less influence on scores (C. Ferrans, personal communication, March 17, 2008).

For each item on the QLI, the respondent indicates his or her degree of satisfaction or importance with each presented aspect of quality of life. Six responses are presented for each item on a Likert scale, with 1 = *Very Dissatisfied* to 6 = *Very Satisfied*. The QLI produces five scores across four domains including a: (a) Total Quality of Life score (all items are used to calculate this score), (b) Health and Functioning Subscale score, (c) Social and Economic Subscale score, (d) Psychological/Spiritual Subscale score, and (e) Family Subscale score (Ferrans, 1996; Ferrans & Powers, 1992). To score the QLI, the authors recommend using a detailed computer syntax for SPSS-PC, which is

included for researchers on their website. The possible range of scores for the four subscales and the overall (total) score is 0 to 30. In terms of interpreting scores, the higher the score, the greater the indicated quality of life; the lower the score, the lower the indicated quality of life (Ferrans & Powers, 1985). In general, scores of 19 or below are indicative of poorer quality of life. Scores can be compared to a general population mean, within a sample, or as a comparison of respondent's own scores over time. A difference of 2-3 points is indicated to be a clinically meaningful difference especially when considering scores of the same respondents over time (C. Ferrans, personal communication, March 17, 2008).

Although published norms for the QLI were not available, general unpublished data was obtained from Dr. Ferrans, co-author of the QLI. Participants were randomly selected from a telephone directory representing urban, suburban, and rural areas in the midwestern United States. The sample size of 339 participants included both males (65.2%) and females (34.8%) who had a mean age of 48.42 years ($SD = 16.83$). Participant norms revealed the following general population data for the QLI: Total Quality of Life ($M = 23.00$, $SD = 4.04$), Health and Functioning ($M = 23.19$, $SD = 4.47$), Social and Economic ($M = 21.83$, $SD = 4.11$), Psychological/Spiritual ($M = 22.95$, $SD = 5.21$), and Family ($M = 25.60$, $SD = 4.49$; C. Ferrans, personal communication, March 17, 2008). Although all four domains and five scores will be considered for the purposes of this study, I was primarily interested in the participant's Total Quality of Life Score. The Social and Economic Subscale score was also of interest as I believed it could be closely related to several of the study's variables. More specifically, I believed that significant differences would be observed between employed and unemployed

participants in terms of their social and economic quality of life as well as other potential variables.

A number of versions of the QLI, including one for persons with SCI, have been developed for persons with disabilities as well as the general population. A set of items is common across all forms with disability related items being added to disability-specific versions. For example, the SCI version of the QLI contains items that have been identified to be significant and prevalent in the lives of persons with SCI. The QLI, available in 14 languages, is a self-administered questionnaire written at a fourth grade reading level (Ferrans, 1996; Ferrans & Powers, 1992).

Both reliability and validity are well established for the QLI. Internal reliability, measured by Cronbach's alpha, for the Total Quality of Life Scale ranged from .84 to .98 across 26 studies (Ferrans & Powers, 1992). Acceptable reliability coefficients are typically .70 or higher (Isacc & Michael, 1997). Internal reliability has also been established for the four individual subscales. The established alphas across 26 studies range from .70 to .93 for the Health and Functioning Subscale, .71 to .92 for the Social and Economic Subscale, and .80 to .93 for the Psychological/Spiritual Subscale. Greater variation in range was found for the Family Subscale with alphas ranging from .63 to .92 (Ferrans & Powers, 1992).

Overall temporal reliability was established using test-retest methods. A test-retest correlation of .87 was identified at a two-week interval and at .81 for an interval of one month (Ferrans & Powers, 1985). Ferrans and Powers also report test-retest temporal reliability across each of the five scores measured at a two-week interval: Overall Quality

of Life ($r = .79$), Health and Functioning ($r = .72$), Social and Economic ($r = .68$), Psychological/Spiritual ($r = .76$), and Family ($r = .69$).

Ferrans and Powers (1985) report the QLI to be valid in terms of content. QLI items were based both on extensive literature reviews of concerns related to satisfaction/quality of life and on the reports of participants regarding the factors that impact the quality of their lives. In addition to the content validity provided by Ferrans and Powers, Oleson (1990) also examined the QLI for content validity using the Oleson Validity Index and judged the instrument to have acceptable content validity. Ferrans (1990) and Ferrans and Powers (1985) report construct validity of the QLI was established by its strong correlations between the overall QLI score and the Measure of Life Satisfaction ($r = .61, .65, .75, .77, .80, .83, .93$). A factor analysis was also computed as part of Ferrans and Powers' construct validation process. They found quality of life to be comprised of four factors: Health and Functioning, Social and Economic, Psychological/Spiritual, and Family. The four factors explained 91% of the total variance (Ferrans & Powers, 1992).

Minnesota Satisfaction Questionnaire (MSQ; Weiss et al., 1967). The MSQ (see Appendix F), originally developed in 1963, is designed to measure an employee's satisfaction with various aspects of work and the work environment. More specifically, the MSQ offers specific information related to job related reinforcers or specific aspects of work that a person finds rewarding, and the degree to which a person's vocational needs and values are satisfied (DeMato & Curcio, 2004; Holcomb-McCoy & Addison-Bradley, 2005; Lyons, Fassinger, & Brenner, 2005; Weiss, Dawis, England, & Lofquist, 1967; Young, 2001).

The MSQ, based on the Minnesota Theory of Work Adjustment, provides a more complete and comprehensive picture of worker satisfaction than is possible using more general or global measures of job satisfaction. For example, while two employees may express identical satisfaction for their work (as measured by a more global measure of job satisfaction), they may experience job satisfaction for entirely different reasons. One person may experience satisfaction because her needs for creativity and independence are being met in her job while another person may experience satisfaction related to her job security, monetary compensation, and responsibility (Weiss et al., 1967).

The Minnesota Theory of Work Adjustment states that work adjustment outcomes that include job satisfaction and satisfactoriness or job performance and tenure can be explained by the relationship (or lack thereof) between the work personality and the work environment. Significant aspects of one's work personality relate to one's vocational abilities and needs while significant aspects of the work environment relate to ability requirements and available work related reinforcers. Work adjustment is predicted by matching a person's work personality with work environments. Work adjustment, therefore, is determined by how well one's abilities correspond to the abilities required to perform a job, and how well one's work related needs correspond to available reinforcers within the work environment. For example, one would expect a greater level of work adjustment for a person whose work personality (vocational abilities and needs) closely matches his or her work environment (ability requirements and work related reinforcers; Weiss et al., 1967).

The MSQ is available in three forms: two long forms (a 1977 version and a 1967 version) and a short form. The MSQ is a self-administered, paper-and-pencil inventory

appropriate for individuals who can read at a fifth grade level or higher. The long-form MSQ consists of 100 items and requires approximately 15 to 20 minutes to complete. The short-form MSQ consists of 20 items and requires approximately 5 to 10 minutes to complete, with most persons completing it in about 5 minutes. Although respondents are encouraged to answer questions as quickly as they can, the MSQ has no time limitation (Weiss et al., 1967), which may be helpful to persons with SCI who require additional time to complete the survey. The lack of a time limitation also allows participants the flexibility to complete the assessment during more than one sitting. The MSQ long form is the preferred form, unless the 15 to 20 minute completion time is impractical, as it provides significantly more information. The long form of the MSQ provides an overall General Satisfaction Score as well as measures of job satisfaction across 20 five-item scales. The long form MSQ (1977 version) was used in this study.

The long-form MSQ consists of 100 items that refer to reinforcers within a person's work environment. The MSQ includes 20 scales with each scale consisting of five items each with five response choices. For each item, the respondent indicates how satisfied he or she is with each presented aspect within his or her present job. Five responses are presented for each item on a Likert scale, with 1 = *Very Dissatisfied* to 5 = *Very Satisfied*. Subscale scores are determined by summing the weights for chosen responses within each of the 20 scales. An overall General Satisfaction Score is yielded from 20 items (one question from each of the 20 scales) for both the long and short forms (Weiss et al., 1967).

For the purposes of this study the overall General Satisfaction Score was calculated by adding the item scores for all of the 100 MSQ items. If the purpose of the

results is to understand and compare differences within a sample, then it is acceptable to calculate *General Satisfaction* for the long-form by adding the item scores for all 100 questions. “If one’s purpose is to understand and examine differences within one’s sample group, you don’t need norms” (D. J. Weiss, personal communication, August 2007). For this study, this method of scoring was used as it included all (100 items) of the participant’s responses rather than only 20.

If using MSQ norms, raw scores obtained for each corresponding scale can be converted into percentile scores, indicating a person’s relative position within his or her appropriate norm group. The MSQ manual offers data related to 27 norming groups including norms for employees who have a disability. The appropriate norm group for a person is the one that most closely corresponds to the respondents’ job characteristics such as tools and materials used, tasks performed, type of supervision, or physical working conditions. A percentile score of 75 or higher indicates a high degree of satisfaction with one’s job, a percentile score of 26 to 74 indicates average satisfaction with one’s job, and a percentile score of 25 or lower indicates a low level of satisfaction with one’s job. Raw scores for each scale can also be interpreted by ranking them, thus providing valuable information related to areas that one might experience as more or less satisfying (Weiss et al., 1967). Weiss et al. (1967) reported internal reliability or consistency of the MSQ Hoyt’s analysis-of-variance. Reliability coefficients for the MSQ scales ranged from a high of .97 on both the Ability Utilization and Working conditions scales to a low of .59 on the Variety Scale. Of the 567 reliability coefficients reported (27 groups with 21 scales), 83% were .80 or greater while only 2.5% were lower than .70.

Although the reliability of some scales varies across groups, in general, the MSQ has adequate internal reliability (Weiss et al., 1967).

Test-retest reliability or stability of the MSQ was established using data obtained for two time intervals, one week and one year. At a one-week interval, test-retest correlation coefficients for the 21 MSQ scales ranged from .66 to .91 with a median coefficient of .83. A one-week General Satisfaction Scale coefficient of .89 was calculated. At a one-year interval, coefficients are observed to range from .35 to .71 with a median coefficient of .61. A one-year General Satisfaction Scale coefficient was .70. An additional measure of stability was obtained using test-retest canonical correlation of the 20 MSQ scales. This method yielded high coefficients of .97 over the one-week interval and .89 over the one-year interval (Weiss et al., 1967).

Weiss et al. (1967) reported construct validity of the MSQ was supported indirectly from construct validation studies of the Minnesota Importance Questionnaire (MIQ), which is based on the Minnesota Theory of Work Adjustment. Although the MSQ and the MIQ assess the same set of reinforcement dimensions, the MSQ measures actual satisfaction with a reinforcer while the MIQ measures the importance of a reinforcer related to the potential satisfaction of an individual. Results of these studies indicate “the MSQ measured satisfaction in accordance with expectations from the Theory of Work Adjustment” (Weiss et al., 1967, p. 18).

Evidence for concurrent validity of the MSQ was established from the study of group differences related to satisfaction. Specific attention was directed toward occupational differences in satisfaction. Research results accumulated over the approximately 30 years that the project was in operation indicate occupational differences

in job satisfaction. Data was analyzed for 25 occupational groups to determine whether the MSQ reflected these differences. Data analysis indicated the MSQ's ability to differentiate between occupational groups as group differences was significant at the .001 level for both means and variances on all 21 MSQ scales. Further analysis included determining which occupational groups had the highest and lowest means and the largest and smallest variance (Weiss et al., 1967).

Finally, for the purposes of this study it should be noted that the terms "congruence" and "fit" should be considered synonymous with the term "qualified for" throughout this study. Although the terms "congruence" and "fit" are associated with the MSQ and the Minnesota Theory of Work Adjustment, the term "qualified for" was chosen because participants would more easily understand what was being asked of them. This was an area of feedback provided by pilot study participants.

Proposed Research Questions, Hypotheses, and Analyses

Five research questions were proposed for this study. The proposed research questions, hypotheses, and analyses are listed below. The data analysis included the use of basic descriptive statistics (means and standard deviations) and inferential statistics. Eta squared was used as the effect size measure.

Research Question 1: What is the difference in terms of quality of life for women with SCI who are employed and for women with SCI who are unemployed?

Hypothesis 1: A significant difference will exist between a woman's employment status (employed or unemployed) and quality of life (QLI) in terms of satisfaction with life for women with SCI. Women with SCI who are employed will report a greater perceived quality of life (QLI) than women with SCI who are unemployed.

Analysis of Hypothesis 1: Mean differences between the groups (employed and unemployed) were examined using a t-test between independent means. The difference was considered significant if a p value of .05 or less was identified. A .05 value is considered the standard within the social sciences (Tabachnick & Fidell, 2001).

Research Question 2: What is the difference in terms of job satisfaction for women employed in positions for which they are qualified and women employed in positions for which they are under or overqualified?

Hypothesis 2: A significant difference will exist between a woman's employment status (qualified, overqualified, or underqualified) and her perceived job satisfaction as measured by the MSQ. More specifically, women with SCI employed in positions for which they are qualified will report greater job satisfaction than women employed in positions for which they are under or overqualified.

Analysis of Hypothesis 2: Mean differences between the three groups (qualified, overqualified, or underqualified) were examined using an univariate analysis of variance. Differences were considered significant if a p value of .05 or less was identified.

Research Question 3: What is the difference in terms of quality of life for women employed in positions for which they are qualified and women employed in positions for which they are under or overqualified?

Hypothesis 3: A significant difference will exist between a woman's employment status (qualified, underqualified, or overqualified) and her perceived quality of life as measured by the QLI. More specifically, women with SCI employed in

positions for which they are qualified will report greater quality of life than women employed in positions for which they are underqualified or overqualified.

Analysis of Hypothesis 3: Mean differences between the groups (qualified, underqualified, or overqualified) were examined using an univariate analysis of variance. The differences were considered significant if a p value of .05 or less was identified.

Research Question 4: What is the difference in terms of quality of life for women who are unemployed but desire to be employed and women with SCI who are unemployed but do not desire to be employed as measured by the QLI?

Hypothesis 4: A significant difference will exist between quality of life scores (QLI) for unemployed women who desire to be employed and unemployed women who do not desire to be employed. More specifically, women who are unemployed but desire to be employed will report lower quality of life (QLI) than will women who are unemployed but do not desire to be employed.

Analysis of Hypothesis 4: Mean differences between the groups (unemployed with the desire to be employed and unemployed without the desire to be employed) were examined using a t-test of independent means. The difference was considered significant if a p value of .05 or less was identified.

Research Question 5: What is the relationship between job satisfaction and quality of life for women with SCI who are employed?

Hypothesis 5: There will be a significant positive correlation between job satisfaction (MSQ) and quality of life (QLI). More specifically, employed women with SCI who report greater job satisfaction (MSQ) will also report greater levels of perceived quality of life (QLI).

Analysis of Hypothesis 5: A Pearson Product Moment Correlation was used to determine the potential relationship and strength of the relationship between quality of life and job satisfaction, as measured by the MSQ and QLI, for women with SCI who are were employed.

CHAPTER 4

RESULTS

This chapter presents the findings from the online research survey. Prior to presenting the survey findings, I will outline the pre-analysis procedures used to clean the data set and assumptions necessary for employing the selected statistical tests.

Descriptive data on each of the two instruments will also be summarized. The final section includes a demographic summary of the survey participants followed by the results for the five research questions as well as additional analyses.

Pre-analysis

After announcements to participate in the online survey were posted on identified spinal cord injury related websites, responses began coming in almost immediately with responses plateauing at around three months. The survey was available online for five and a half months when the data was downloaded into a tab delimited text file and then uploaded into an Excel file. The Excel file was then imported into SPSS 15 for analysis. Prior to downloading the data file into SPSS 15, I created an SPSS codebook.

In all, 238 people started the online survey. Thirty-four people were removed from the data because they registered but did not start the survey for reasons that are unknown. Twelve participants were also removed from the data set because they indicated they resided outside the US and Canada. An additional two participants were removed from the data because they completed only a portion of the demographic questionnaire. It should be noted that in this group of 190, seven participants indicated living in Canada. I took a look at whether a U.S. group only, as compared to a North American group that included U.S. and Canada differed to any extent. Specifically I was

interested in the MSQ and QLI scores. Based on the fact that there was no difference in the overall MSQ and QLI scores when comparing the total North American group with the U.S. only group I used the total North American group for my analyses.

After reviewing the data using frequency printouts and MVAC (missing value analysis), 190 of the 238 participant responses were included in the analyses. After beginning to analyze the data, the decision was made to remove any participants who identified themselves as residing outside of the US or Canada. When inclusion and exclusion requirements for the study were initially developed, reaching participants outside of the United States was not considered. Participants residing outside of the US and Canada were removed from the data set as it is believed that their experiences in relationship to employment, return to work, job satisfaction, accessibility, and quality of life could be different than those of women working and living within the US and Canada. Although not initially explicitly defined, the intended purpose of this study was to investigate quality of life, job satisfaction, and the return to work related experiences of women with SCI in the US and Canada.

The first step in the pre-analysis process involved examining the data to determine what measures were necessary to ensure an accurate data set for analysis. Numerous variable frequencies were generated and analyzed to make sure that the data “made sense” upon initial review. The purpose of inspecting the data and running preliminary frequencies was to identify miscoded data and patterns of missing data, as well as to identify any data that did not fall within expected ranges, thus signifying a potential problem within the data set. For example, upon initially downloading the data, inspection of the data set revealed several participants who gave responses outside of the available

options. Examination revealed that several of the individual responses had unknowingly been shifted within the spreadsheet. Further examination revealed that the data set exceeded the 256 columns that Excel would accept. Creating a tab delimited text file prior to importing the data into Excel was necessary to resolve the problem. Once the data set was converted and downloaded into SPSS it was visually rechecked and the variable frequencies were run again to ensure that the problem had been corrected.

Once the examination of miscoded and misplaced data was completed, the next step was to determine the extent of missing data and to make a decision about how best to handle it. Very little missing data was identified within the demographic questionnaire section and the QLI. It should be noted that the demographic questionnaire was the first section participants completed, followed by the QLI, and finally the MSQ. Missing data was most prevalent within the MSQ, which may have been due to the length of this instrument, the time commitment required to complete it, or the fact that the MSQ was the last section of the study. Although I had concerns about the length of the overall survey, I made the decision to include the QLI, the MSQ long-form, and 34 open and closed ended demographic questions because I believed the opportunity to collect such rich information on an underrepresented group outweighed the risk of losing participants as a result of the length of the survey.

In terms of analyzing missing data, the data set revealed no specified pattern of missing data. It was therefore determined that missing data was a result of values missing at random (MAR) meaning that missing data in the demographic questionnaire, QLI, and the MSQ were likely attributed to the participants' responses in general rather than to specific questions or variables (Little & Rubin, 2002). Overall, missing data were

observed to be of one of two types. Data were observed to either be missing randomly within the survey or to be missing from a certain point on, meaning that participants quit responding at some point within the survey. As previously mentioned, the majority of the missing data was found within the MSQ, which was the final research instrument.

After gaining a greater understanding of the type of missing data, the next step was to determine how to address the missing data. I decided to impute missing data for the MSQ and QLI using SPSS regression linear point estimation procedures due to the random nature of the missing data. Hair et al. (1998) support using a regression imputation for replacing missing values when “moderate levels of widely scattered missing data are present and for which the relationships between variables are sufficiently established so that the researcher is confident that using this method will not impact the generalizability of the results” (p. 54).

Prior to replacing the missing data, the SPSS Explore program was used to establish baseline descriptive information, including central tendency and variation statistics, for the QLI and MSQ. This step in the analysis was important so that comparisons could be made between pre and post missing value replacement to ensure that replacement would not substantially alter the descriptive data for these two instruments. After the analysis, missing values were replaced and total scores were run once again to compare with the initial or baseline analysis. A comparison of the pre and post replacement data indicated that replacement of the missing values did not change either the central tendency or variability of the QLI and the MSQ total scores.

Skewness and kurtosis values were also calculated for total score variables to assess normality of the data. It is important to observe skewness and kurtosis values, as

values outside of the acceptable range may indicate data that may impact one's findings and interpretation. Field (2000) suggests that a value above 2 should be considered problematic unless one's sample size is small. In a small sample Field suggests increasing the value to 2.5. He further suggests that no criterion should be applied to very large samples. Morgan and Griego (1998) suggest that "if the skewness or kurtosis measure is more than 2.5 times its standard error the assumption of normality has been violated" (p. 49). Skewness and kurtosis values for both the QLI and MSQ fell well within the guidelines recommended by Field (2000) and Morgan and Griego (1998). In totality the skewness and kurtosis values were examined in addition to examination of box and whisker plots.

Summary of Participant Demographics

As previously stated, 190 participants remained in the sample after cleaning the data set. Of those 190 participants, 104 were employed and 86 were unemployed. The mean age of the sample was 40 with the minimum age being 18 and the maximum being 65. It should be noted that participants had to be at least 18 years of age to participate in this study. Of the participants, 55% identified as having paraplegia, 37% identified as having quadriplegia, and 8% of the sample chose to not report their level of injury.

In terms of ethnicity, 82% of the participants identified as White American, 6% as African American, 2% as Latina American, and 2% as multi or biracial. Eight percent of the sample selected "other" as their race/ethnicity. When asked to describe their current relationship status, 39% of the women reported being married, 32% reported being single, 17% reported being divorced or separated, 1% reported being widowed, while

11% reported being partnered. With respect to sexual orientation, 91% self identified as heterosexual, 5% as lesbian, and 4% as bisexual.

The majority of participants indicated an educational level beyond high school with 34% reporting some college, university, or technical schooling; 9% reporting obtaining an associate's degree; 26% reporting obtaining a bachelor's degree; and 16% reporting obtaining a graduate degree. Attending but not completing high school was reported by 3% while 12% reported obtaining a high school diploma or general equivalency diploma.

Consistent with spinal cord injury statistics related to the etiology of spinal cord injury, 50% of the participants reported sustaining their injury by motor vehicle accident. For this sample, 11% reported injury as a result of a fall, 6% as a result of an act of violence, and 6% as a result of a sports related injury, while 27% reported sustaining the SCI as a result of something other than what was listed (e.g., medical/surgical error, post-surgical infection, degenerative spinal disease, spinal tumor).

Regarding participants current living situation, 17% reported residing alone without any type of personal care assistance, 50% indicated residing with a spouse or significant other, 17% reported residing with a parent or family member, while 16% reported living in a situation other than what was listed (e.g., reside with a friend, live-in caregivers, service dog, reside with children). When asked about receiving personal care assistance, 64% reported that they did not receive assistance, 17% reported receiving assistance on a part-time basis, 7% reported receiving assistance on a full-time basis, and 6% on an "as needed" basis, while 6% reported receiving assistance in a form other than

what was listed (e.g., family and paid assistance with chores, community program helps to clean the house weekly).

When asked about the accessibility of one's home in relationship to one's functional needs, 38% reported their home to be "very accessible," 34% reported their home to be "accessible," and 21% reported their home to be "somewhat accessible," while 7% reported their home to be "poorly accessible." When asked to describe the accessibility of one's community in relationship to one's functional needs, 12% reported their community to be "very accessible," 41% reported their community to be "accessible," 35% reported their community to be "somewhat accessible," while 12% reported their community to be "poorly accessible."

In relationship to employment, 28% reported being employed full-time (35 or more hours/week), 16% reported being employed part-time (1 to 34 hours/week), 7% reported performing "unpaid work outside of the home," and 35% reported being unemployed, while 14% reported their current employment status under the category of "other" (e.g., disability retirement, retired, student, paid guest speaking engagements). When asked about their current job situation, 70% of the employed sample ($n = 104$) reported that they were working in a job that they were "qualified for," 16% reported working in a job that they felt "overqualified for," 5% reported working in a job that they felt "underqualified for," and 9% reported "other."

In terms of secondary conditions that significantly interfered or had interfered with their ability to work, 31% of the participants reported experiencing such conditions. More specifically, 6% reported issues with autonomic hyperreflexia/autonomic dysreflexia, 16% with spasticity, 3% with contractures, 10% with decubitus ulcers, 5%

with problems resulting from decreased bone density, and 17% reported issues related to “other” (e.g., arthritis in hands, wrists, and elbows; chronic pain; chronic urinary tract infections; depression; tremors).

When asked to describe the accessibility of their work environment in relationship to functional needs, 43% reported their work environment to be “very accessible,” 42% reported their work environment to be “accessible,” and 14% reported their work environment to be “somewhat accessible.” Only 1% reported their work environments to have a “poor level of accessibility.” When asked to describe the types of accommodations that made it possible for them to return to gainful employment the most significant accommodation reported was work site accessibility (33%). Other accommodations included: personal assistance/attendant care on the job (4%); personal assistance/attendant care for getting ready for work (5%); home accessibility (13%); accommodation related to performing their job duties (14%); transportation to and from work (18%); additional training because they could not perform their pre-injury job (4%); guaranteed medical coverage (14%); and 8% reported “other” (e.g., assistance getting scooter from non-adapted vehicle, flexible hours and schedule, accessible bathroom).

For participants who were currently unemployed, 66% ($n = 55$) indicated they had to stop working as a “result of their injury.” For participants who were currently unemployed, 15% ($n = 28$) had been employed at some point since the date of their injury. Participants reported becoming unemployed for various reasons including departmental restructuring, experiencing health-related complications, returning to school, having a child, or being “let go” as a result of workplace accessibility.

When asked to rank order one's primary reasons or motivations for returning to work or attempting to return to work, women (both employed and unemployed) indicated the feeling of achievement, responsibility, and growth to be the number one motivator or reason. Table 1 depicts a summary of the primary reasons or motivators for returning or attempting to return to work.

Table 1

Reasons for Returning to Work

For those who are either employed or unemployed: What are/were your primary reasons or motivations for returning or attempting to return to work? Please rank order each reason that applies starting with 1 as the most important, 2 as the next important, and so forth.	Rank Based On Average Rank Value	Average Rank Value	Rank Value Assigned High Low	
Financial (wage and fringe benefits)	2	2.8	1	10
Feeling of achievement, responsibility, and growth	1	2.6	1	10
Feeling of self-esteem and self-respect	3	3.2	1	10
Provides me with socialization	6	4.4	1	10
Enjoyment of work itself	5	4.2	1	9
To feel like I am making a difference in the world	4	4.1	1	10
To utilize my education and training	7	5.0	1	9
Because my life situation changed such as my marital/relationship status, children entering or leaving the home, family responsibility, etc.	8	6.3	1	10

For women who were unemployed, 69% ($n = 57$) reported they would prefer to be employed. Participants who were unemployed noted the following types of accommodations would enable them to return to work: 5% indicated personal assistance/attendant care on the job, 12% indicated personal assistance/attendant care for getting ready for work, 28% indicated work site accessibility, 8% indicated home accessibility, 20% indicated accommodation related to performing job duties, 15% reported transportation to and from work, 15% indicated additional training because they could not perform their pre-injury job, 19% indicated guaranteed medical coverage, and 8% reported “other” (e.g., an understanding work environment and employer, assistance with pain management, flexible work hours/schedule, shorter hours and less stress, work demands that aren’t too great on my health, a good wage).

Minnesota Satisfaction Questionnaire

Survey data for the MSQ was based on 88 participants who were employed. Although there were 190 participants in this sample, only participants who were employed were able to respond to the MSQ, which assesses factors related to one’s current job satisfaction. Although it is possible to compute both a MSQ total score and subscale scores, for the purposes of this study only a total MSQ score (indicating overall job satisfaction) was calculated as subscale scores were not necessary to answer the five proposed research questions.

To calculate the total overall MSQ score, responses to all 100 MSQ items were added together. The total MSQ score could range from a low of 100 to a high of 500 with a theoretical midpoint of 300. Higher total scores on the MSQ indicate greater levels of job satisfaction while lower total scores indicate lower levels of job satisfaction (Weiss et

al., 1964). For this study, participant scores ranged from 271 to 490. The mean score for the sample was 385.95 (77th percentile) with a standard deviation of 53.64 indicating the sample to have a high degree of satisfaction with one's job. A percentile score of 75% or higher indicates a high degree of satisfaction with one's job (Weiss et al.). The distribution of total scores for the employed group of participants was normally distributed as confirmed by the skewness and kurtosis measures of -.154 and -.167, respectively.

For the current study, reliability for the MSQ was .90 using Cronbach's Alpha indicating a high level of internal consistency. Kline (1999) suggests a standard of .70 or greater as acceptable for most instruments with the exception of cognitive tests, which should have a standard of .80. Kline goes on to state that even some values below .70 may be acceptable, especially for first generation instruments.

Quality of Life Index

Results for the QLI were based on all 190 participants, both employed and unemployed. Total and subscale scores were calculated for the QLI. Scores for both the four subscales and overall quality of life total score can range from a low of 0 to a high of 30. Higher scores indicate greater perceived levels of quality of life while lower total scores indicate lower levels of perceived quality of life (Ferrans & Powers, 1984). For the study sample, total overall QLI scores ranged from a low of 4.83 to a high of 30. The mean score for the sample was 18.96 with a standard deviation of 5.57. Four subscale scores included: Health and Functioning with a range of 1.20 to 30, a mean of 17.50 and a standard deviation of 6.44; Social and Economic with a range of 7.43 to 30, a mean of 20.05 and a standard deviation of 5.80; Psychological and Spiritual with a range

of 1.79 to 30, a mean of 18.91 and standard deviation of 6.81, and Family with a range of 3.75 to 30, a mean of 21.39 and standard deviation of 5.96. As previously noted, in general, scores of 19 or below are indicative of poorer quality of life indicating employed and unemployed women in this sample experienced poorer quality of life in the areas of overall quality of life ($M = 18.96$), Health and Functioning ($M = 17.50$), and Psychological and Spiritual ($M = 18.91$) quality of life. The women in this sample had QLI scores that were considered to be within the average range for the Social and Economic ($M = 20.05$) and Family ($M = 21.39$) quality of life scales (C. Ferrans, personal communication, March 17, 2008).

Mean scores between employed and unemployed participants will be discussed in the research question section. The distribution of total QLI scores for this sample was normally distributed as confirmed by the skewness and kurtosis measures of $-.179$ and $-.798$, respectively. For the current study, reliability for the QLI was $.94$ using Cronbach's Alpha indicating a high level of internal consistency. As previously stated, Kline (1999) suggests a standard of $.70$ or greater as acceptable for most instruments.

Research Questions

Research Question 1, Differences in Quality of Life by Employment Status

The first research question asked, "What is the difference in terms of quality of life for women with SCI who are employed and for women with SCI who are unemployed?" In order to answer this question, an independent t-test between means was conducted to determine if a significant difference existed between the mean QLI scores for women who were employed and women who were unemployed. This bivariate t-test analysis was considered the appropriate method of analysis because it examines

differences between two groups. For this inquiry the independent variable had two levels, employed and unemployed.

Using the QLI with a six point response scale ranging from 1 (very dissatisfied) to 6 (very satisfied), participants rated both their level of satisfaction and importance across the following areas: Health and Functioning; Social and Economic; Psychological and Spiritual; and Family. The four sub groupings comprise the total QLI score, which was the primary scale of interest for this question.

For research question one a significant difference was observed between the mean QLI total scores for women who were employed ($M = 20.74$) and women who were unemployed ($M = 16.44$). This significant difference in means indicates that employment did have an influence on perceived quality of life. More specifically, women who were employed indicated a significantly higher level of quality of life than women who were unemployed (Table 2). It should be noted that the overall average for the unemployed group fell within what Ferrans and Powers would indicate to be poorer quality of life (scores of 19 and below) as compared to an overall general population sample (C. Ferrans, personal communication, March 2008). Given this finding, the first hypothesis, which stated women who are employed will report a greater perceived quality of life than women who are unemployed, was supported.

Table 2

Quality of Life for Unemployed and Employed Women with SCI (n = 157)

Employment Status	<i>n</i>	Mean	Standard Deviation	Range	<i>p</i>
Unemployed	65	16.44	5.32	6.19-27.83	< .001
Employed	88	20.74	4.47	10.67-29.12	

Note. QLI scores could range from 0 to 30 with higher values reflecting higher quality of life

Research Question 2, Differences in Job Satisfaction by Employment Status

The second research question asked, “What is the difference in terms of job satisfaction for women employed in positions for which they are qualified and women employed in positions for which they are underqualified or overqualified?” It should be noted that this research question was based on participants’ responses to demographic question # 21 which asked “Which of the current statements most closely matches your current job situation?” The choices that participants were given included “I believe that I am working in a job that I am underqualified for according to my level of education, training, interests, and abilities, I believe that I am working in a job that I am qualified for according to my level of education, training, interests, and abilities, I believe that I am working in a job that I am overqualified for according to my level of education, training, interests, and abilities, or other.” To answer the second research question, a one-way analysis of variance was used to determine whether a difference existed between the mean MSQ scores for women in the three levels of the independent variable employment

status (qualified, overqualified, or underqualified). The total MSQ score was treated as the dependent variable.

For research question two a significant difference was observed between the mean MSQ total scores for women who were employed in positions for which they were qualified and women who were employed in positions for which they were overqualified. This significant difference in means indicates that working in a position for which one is qualified has a statistically significant influence on job satisfaction. More specifically, women who were employed in positions for which they were qualified had significantly higher levels of job satisfaction ($M = 391.44$) than women who were employed in positions for which they were overqualified ($M = 369.61$). Although women who were working in positions for which they were underqualified ($M = 382.23$) reported lower mean quality of life scores than women working in positions for which they were qualified ($M = 391.44$), the difference was not statistically significant. The second hypothesis, which stated that a significant difference would exist between a woman's employment status (qualified, overqualified, or underqualified) and her perceived job satisfaction as measured by the MSQ, was partially supported (Table 3).

Table 3

Job Satisfaction Results by Employed Status (n = 99)

Type of Employment		Standard					
Status for Job Held	n	Mean	Deviation	Range	F	p	
Qualified for job	74	391.44	33.24	383.73 399.14	3.14	.048	
Overqualified	20	369.60	37.99	351.82 387.38			
Underqualified	5	382.23	45.18	326.11 438.33			

Notes. MSQ scores could range from 0 to 500

Scheffe post hoc results revealed only significant differences as follows $391.44 > 369.60$ ($p = .050$). Levene's test for equal variance (.741, $p = .479$)

Research Question 3, Differences in Quality of Life by Employment Status

The third research question asked, "What is the difference in terms of quality of life for women employed in positions for which they are qualified and women employed in positions for which they are under or overqualified?" Similar to research question two this research question was also based on participants' responses to demographic question # 21 which specifically asked "Which of the current statements most closely matches your current job situation?" To answer the third research question, one-way analysis of variance was used to determine whether a difference existed between the mean QLI scores for women in the three levels of the independent variable employment status (qualified, overqualified, or underqualified). The total QLI score was treated as the dependent variable.

For research question 3, a significant difference was observed between the mean QLI total scores for women employed in positions for which they were qualified and

women employed in positions for which they were underqualified. This significant difference in means indicates that working in a position for which one is qualified has a statistically significant influence on quality of life. More specifically, women who were employed in positions for which they were qualified had significantly higher QLI scores ($M = 21.03$) than women who were employed in positions for which they were underqualified ($M = 15.35$). Although women who were working in positions for which they were overqualified ($M = 19.50$) reported lower mean quality of life scores than women working in positions for which they were qualified ($M = 21.03$), the difference was not statistically significant. According to Ferrans and Powers, women working in positions for which they were underqualified fell within what they consider to be a poor quality of life range (scores of 19 and below) as compared to general population data (C. Ferrans, personal communication, March 17, 2008). The third hypothesis, which stated that a significant difference would exist between a woman's employment status (qualified, overqualified, or underqualified) and her perceived quality of life as measured by the QLI, was partially supported (Table 4).

Table 4

Quality of Life Results by Employment Status (n = 99)

Type of Employment							
Status for				Standard			
Job Held	<i>n</i>	Mean	Deviation	Range	F	<i>p</i>	
Qualified for Job	74	21.03	4.29	8.50 29.12	4.79	.010	
Overqualified	20	19.50	4.29	10.67 25.71			
Underqualified	5	15.35	2.89	11.80 18.06			

Notes. QLI scores could range from 0 to 30. Scheffe post hoc results revealed only significant differences as follows $21.03 > 15.35$ ($p = .018$). Levene's test for equal variance (.522, $p = .595$)

Research Question 4, Quality of Life Differences for Unemployed Women Desiring or Not Desiring Employment

The fourth research question asked, "What is the difference in terms of quality of life for women who are unemployed but desire to be employed and women with SCI who are unemployed but do not desire to be employed?" In order to answer the fourth research question, an independent t-test was used to determine whether a difference existed between the mean QLI scores for women who were unemployed but desired to be employed and the mean QLI scores for women who were unemployed but did not desire to be employed. This bivariate analysis was considered the most appropriate method of analysis for this question because it examines differences between two independent groups. For this inquiry the independent variable had two levels: unemployed but desiring to be employed and unemployed but not desiring to be employed.

For research question four, a significant difference was observed between the mean QLI total scores for women who were unemployed but desired to be employed ($M = 15.38$) and women who were unemployed but did not desire to be employed ($M = 20.35$). This significant difference in means indicates that desire to be employed had an influence on perceived quality of life. More specifically, women who were unemployed but desired to be employed reported lower perceived quality of life than women who were unemployed but did not desire to be employed. According to Ferrans and Powers women who were unemployed but desired to be employed fell within what they consider to be a poor quality of life range (scores of 19 and below) as compared to general population data (C. Ferrans, personal communication, March 17, 2008). Given this finding, the fourth hypothesis, which stated that women who are unemployed but desire to be employed will report lower quality of life (QLI) than will women who are unemployed but do not desire to be employed, was supported (Table 5).

Table 5

Quality of Life for Unemployed Women Relative to Desire for Employment (n = 64)

Desire for			Standard	
Employment	<i>n</i>	Mean	Deviation	<i>p</i>
Desire	45	15.38	4.23	< .001
No Desire	19	20.35	5.04	

Note. QLI scores could range from 0 to 30

Research Question 5, Relationship Between Job Satisfaction and Quality of Life

The fifth research question asked, “What is the relationship between job satisfaction and quality of life for women with SCI who are employed?” In order to answer this question, a Pearson Product Moment correlation was used to examine the direction and strength of the relationship between quality of life and job satisfaction, as measured by the QLI and MSQ, for women who were employed. A Pearson Product Moment correlation was considered the most appropriate method of analysis for this question because it assesses the degree of relationship between two continuous variables (Tabachnick & Fidell, 2001).

Pearson Product Moment correlation coefficients were calculated for the relevant variables of interest (quality of life and job satisfaction) and are presented in Table 6. Although quality of life (as measured by the total QLI score) and job satisfaction (as measured by the total MSQ score) related in a positive way, there was not a strong enough relationship ($r = .13, p = .218$) to indicate statistical significance. In considering the relationship between the four QLI subscale scores and the MSQ, however, a low, positive statistically significant relationship ($r = .27, p = .010$) was identified between job

satisfaction, as measured by the MSQ total score, and the Social and Economic subscale of the QLI. Given this finding, hypothesis five, which stated a significant positive correlation will exist between job satisfaction (MSQ) and quality of life (QLI), was partially supported. There is a slight trend that women who reported greater job satisfaction also reported greater social and economic quality of life.

Table 6

Relationships Between Quality of Life and Job Satisfaction for Women with SCI (n = 88)

Total	Standard			
MSQ	Mean	Deviation	r	p
Total QLI	20.49	4.17	.133	.218
HFS	19.32	4.54	.064	.554
SES	21.88	4.35	.269	.010
PSS	20.20	5.40	.071	.512
FS	21.94	5.29	.121	.262

Note. Total QLI = total of Quality of Life Inventory full scale score, HFS = Health and Functioning Subscale, SES = Social and Economic Subscale, PSS = Psychological and Spiritual Subscale, and FS = Family Subscale. QLI scores range from 0 to 30.

Additional Analyses

To gain further understanding of the variables under investigation in this study, several additional analyses were performed to explore the influence of independent variables of interest on selected dependent variables. To further understand and help explain quality of life and job satisfaction as it relates to women with spinal cord injury, multiple regression analyses were conducted to determine if selected demographic

variables had an influence on quality of life. The selected independent variables used in the regression were partially identified using a correlation matrix of the variables to assess the correlation between those variables and the QLI. The relationships between the independent variables were examined for potential multicollinearity issues, and the highest correlation between independent variables was between age and years post-injury ($r = .37, p < .01$). In the regression analyses, the four subscales of the QLI were treated as separate dependent variables. Assumptions regarding normality and linearity of the continuous variables were examined, and in addition normality of the residuals were examined for each of the regression analyses. The enter regression procedure was used to create a fully saturated regression model for each of the four OLI subscales. For significant variables in the fully saturated models, the relative contribution to explaining variance in the dependent variable was calculated using a backward stepwise regression procedure to identify the R change value. It should be noted that the variables selected for this additional analyses were those that have been commonly documented to be associated with quality of life. The following includes a brief overview of some of the literature supporting the association between quality of life and the variables included in the regression analyses. In total, there were nine specific variable of interest including: relationship status, ethnicity, number of years post-injury, job satisfaction, level of spinal cord injury, age, employment status, whether one was employed in a job for which they felt qualified, and educational level.

Tate and Forchheimer (2001) investigated the role of selected factors including age, time since injury, and neurological status on the health-related quality of life and life satisfaction of women with SCI finding that while women with SCI reported higher

overall levels of life satisfaction than men with SCI, they also reported lower levels of mental-health related QOL. Severity or level of impairment was also found to be associated with health-related QOL and life satisfaction. Participants with lower levels of impairment indicated higher levels of overall life satisfaction and physical well-being but lower levels of mental well-being. In contrast, participants with higher levels of impairment reported lower levels of overall life satisfaction and physical well-being but higher levels of mental well-being. Age was also indicated to be associated with physical well-being for women. Younger women with SCI were found to report greater physical well-being. In addition, participants who had been injured for longer periods of time reported significantly higher levels of physical and mental QOL and life satisfaction. These findings are consistent with several other studies (Hall, Knudsen, Wright, Charlifue, Graves, & Werner, 1999; Krause, 1992; Krause & Crewe, 1987; 1991). In addition, Tate and Forchheimer (2001) also found economic factors, which are closely associated with employment, to be critical in shaping the QOL of women with disabilities.

Tate, Roller, and Riley (2001) suggest that quality of life can be defined and explained in many different ways. Quality of life can be thought of as a multi-dimensional construct that influences and is associated with various aspects or factors of a person's life: economically, physically, psychologically, and socially (Stensman, 1994; Tate & Forchheimer, 2001; Tate, Roller, & Riley, 2001). Krause (1992) suggests that life satisfaction comprises two critical areas: a person's economic satisfaction, which includes a person's finances and employment, and general satisfaction, which includes a person's social life, well-being, and emotional or psychological adjustment. Employment

following SCI has been consistently related to greater levels of satisfaction in nearly all areas of life (Krause, 1990, 1992, 1996). QOL has also been correlated with satisfaction with one's career (Krause & Crewe, 1987; Lundquist, Siösteen, Bloomstrand, Lind, & Sullivan, 1991) as well as educational attainment (Clayton & Chubon, 1994). In addition, Schalock (1997) supports numerous core dimensions that are associated with quality of life for persons with disabilities including psychological well-being, interpersonal/social relations, material well-being (including employment and economic security), and physical well-being. In terms of race, some studies suggest that after controlling for various demographic variables racial differences in QOL may diminish (Clayton & Chubon, 1994; Dijker, 1999), while others suggest that race does influence QOL (Krause, 1998).

In the first regression analysis, seven predictor variables (relationship status, ethnicity, number of years post injury, job satisfaction, level of spinal cord injury, age, employment status and whether one was employed in a job for which they felt qualified) were entered into a multiple regression equation with the Health and Functioning subscale score on the QLI serving as the dependent or criterion variable. In this regression analysis ($F = 5.41, p < .01$), number of years post-injury and type of injury were significant variables in the equation (Table 7) accounting for 4.8% and 3% of the variance respectively. These findings are supported by other studies that have identified a relationship between number of years post-injury, type of injury and quality of life relative to physical status (Hall, et al.; Krause, 1992; Krause & Crewe, 1987; 1991; Tate & Forchheimer, 2001).

In the second regression analysis, eight predictor variables (job satisfaction, whether one was employed in a job that they felt qualified for, age, number of years post-injury, level of injury, ethnicity, employment status, and relationship status) were entered into the regression equation with the Social and Economic subscale score on the QLI serving as the dependent or criterion variable. In this regression analysis ($F = 4.48, p < .01$), job satisfaction and whether one was employed in a job for which they felt qualified were significant variables in the equation (Table 7) and accounted for 17% and 3% respectively of the variance in the Social and Economic subscale values. The relationship between job satisfaction and social/economic quality of life is supported by many studies (Krause, 1990, 1992, 1996; Krause & Crewe, 1987; Lundquist, et al., 1991, Stensman, 1994; Tate & Forchheimer, 2001; Tate, Roller, & Riley, 2001).

In the third regression analysis, eight predictor variables (relationship status, ethnicity, job satisfaction, number of years post-injury, educational level, level of injury, age, and whether one was in a job that they felt qualified for) were entered into the regression equation with the Psychological and Spiritual subscale score on the QLI serving as the dependent or criterion variable. In this regression analysis ($F = .3.50, p = .01$) the overall model was statistically significant with both age and years post-injury as statistically significant variables. These findings are supported by other studies that have identified a relationship between age, years post-injury, and psychological/spiritual quality of life (Hall, et al., 1999; Krause, 1992; Krause & Crewe, 1987; 1991, Tate & Forchheimer, 2001).

In the final regression analysis, eight predictor variables (job satisfaction, whether one was employed in a job for which they felt qualified, age, number of years post-

injury, level of injury, ethnicity, relationship status, and employment status) were entered into the regression equation with the Family subscale score on the QLI serving as the dependent or criterion variable. In this regression analysis only relationship status ($p = .02$) was a statistically significant variable. This finding supports the concept of how one's relationship status, in this analysis being married or partnered, contributes to a greater perceived family quality of life accounting for 8.4% of the variance in family subscale scores. These findings are supported by other studies that have identified a relationship between one's relationship or social status and family quality of life (Krause, 1992; Schalock, 1997; Stensman, 1994; Tate & Forchheimer, 2001; Tate, Roller, & Riley, 2001).

Table 7

*Multiple Regression Analysis Results with Each of the Quality of Life Subscales**Regressed on Selected Independent Variables*

Variable	QLI Health & Functioning Subscale		QLI Social and Economic Subscale		QLI Psychological & Spiritual Subscale	
	b (se b)	Beta (alpha)	b (se b)	Beta (alpha)	b (se b)	Beta (alpha)
Relationship						
Other (0)	-.49	-.04	-.14	-.01 (.87)	.23	.02 (.82)
Partnered (1)	(.92)	(.60)	(.86)		(1.02)	
Ethnicity						
Others (0)	.16	.01	.05	<.01	.37	.02 (.77)
White (1)	(1.16)	(.89)	(1.08)	(.98)	(1.28)	
MSQ	.02	.08	.03	.16 (.05)	.02 (.01)	.08 (.36)
	(.02)	(.32)	(.01)			
Years Post Injury	.17	.28	.07	.12 (.18)	.11 (.06)	.17 (.05)
	(.05)	(<.01)	(.05)			
SCI						
Quadriplegic (0)	1.93	.17 (.05)	.28	.03 (.76)	1.45	.12 (.17)
Paraplegic (1)	(.95)		(.89)		(1.05)	
Age (years)	-.08	-.15	-.01		-.11 (.05)	-.21 (.02)
	(.04)	(.09)	(.04)			

Table 7 (continued).

Employment Qual						
Under/Overq (0)	2.11	.19	1.23	.12 (.32)	.79 (1.44)	.07 (.59)
Qualified (1)	(1.31)	(.11)	(1.22)			
Employment Stat						
Unemployed (0)	1.79	.16	2.82	.27 (.03)	1.78	.15 (.23)
Employed (1)	(1.34)	(.19)	(1.25)		(1.48)	
Model Summary						
F	5.41		4.48		3.50	
Df	9/130		9/139		9/139	
P	<.01		<.01		<.01	
R ²	.27		.24		.20	
Adj, R ²	.22		.18		.14	
Constant	9.70		6.21		12.50	
	(6.13)		(5.70)		(6.75)	

Table 7 (continued).

Variable	QLI Family Subscale	
	b (se b)	Beta (alpha)
Relationship		
Other (0)	2.05 (.87)	.21 (.02)
Partnered (1)		
Ethnicity		
Others(0)	1.21 (1.10)	.09 (.28)
White(1)		
MSQ	.02 (.01)	.13 (.14)
Years Post Injury	.04 (.05)	-.07 (.46)
Spinal Cord Injury		
Quadriplegic (0)	1.26 (.90)	.13 (.17)
Paraplegic(1)		
Age (years)	-.04 (.04)	-.08 (.39)
Employment Qual		
Under/Overqual.(0)	.82 (1.24)	.08 (.51)
Qualified (1)		
Employment Status		
Unemployed (0)	-.51 (1.27)	-.05 (.89)
Employed (1)		

Table 7 (continued).

Model Summary		
F	2.39	
Df	9/139	
P	.02	
R ²	.14	
Adj, R ²	.08	
Constant	10.95 (5.81)	

CHAPTER 5

DISCUSSION

This chapter expands upon the findings presented in Chapter 4. The first section will provide an overview and discussion of the research findings presented in Chapter 4. Following this overview and discussion, limitations related to this study will be discussed as well as implications for practice and training. The chapter will conclude with a discussion related to implications for research as well including suggestions for future research.

Overview of Research Findings

While limited comparisons can be made between with the 2006 Annual Report for the Model Spinal Cord Injury Care Systems (NSCISC, 2006), the primary national database for SCI statistical information, some comparison is merited to identify the similarities and differences that exist between the women included in this study and the national SCI database. It should be noted that the national database primarily collects data on both men and women with SCI at the time of admission or discharge depending on the nature of information collected. In some cases data is also collected across number of years post-injury. Participants in this study were at least one year post-injury (ranging from 1- 40 years). It should be noted that data related to etiology of injury was the only category within the 2006 report that specifically differentiated between men and women with SCI.

In summary, 190 women with SCI were included in this study. Of those 190 participants, 104 indicated being employed while 86 indicated being unemployed. The mean age of the women was 40 with the minimum age being 18 and the maximum being

65. Of the women included in this sample, 55% identified as having paraplegia, 37% as having quadriplegia, while 8% did not report their level of injury. In comparing the women in this sample to persons with SCI in the 2006 Annual Report, 46% of persons were identified as having paraplegia and 52% as having quadriplegia, while level of injury was unknown in 2% of the cases.

In terms of ethnicity, 82% of the women included in this study identified as White American, 6% as African American, 2% as Latina American, and 2% as multi or biracial. In comparison to the 2006 Annual Report for the Model SCI Care Systems (NSCISC, 2006) this sample included a significantly larger percentage of White Americans and a smaller percentage of African Americans. It should be noted that the 2006 Annual Report does not differentiate between gender relative to ethnicity. In the 2006 report 67% of the sample identified as White American and 22% as African American. The 2006 Annual Report included 9% of individuals who identified as being of Hispanic origin while the sample for this study included 2% of women who identified as Latina. A comparison between individuals identifying multi or bi-racial was unable to be made between this sample and the 2006 Annual Report.

In terms of etiology of injury an identical comparison was made between the three leading causes of SCI for both women in this study and women included in the 2006 Annual Report. Both groups reported identical leading causes of injury. Injury by motor vehicle accident was both the leading cause of injury for women included in this sample (50%) as well as women included in the 2006 Annual Report (51%). Injury as a result of a fall was identified as the second leading cause of injury for both this sample (11%) as well as for the women included in the 2006 Annual Report (19%). Injury as a result of a

violent act/gunshot was identified as the third leading cause of injury for both women included in this sample (6%) was well as women included in the 2006 Annual Report (11%). It was difficult to make any further comparisons between the groups due to the way that the other reasons for injury were classified. A large percentage of women (27%) in this sample listed “other” as the cause of injury (medical/surgical error, post-surgical infection, degenerative spinal disease, spinal tumor). In considering the etiology of SCI (including both men and women) over time, the NSCISC (1973-2006) reported motor vehicle accidents to consistently be the leading cause of injury. Injury by falls has ranked second across all time periods with the exception of 1990 to 1994 when injury due to acts of violence ranked second.

Although it is difficult to make comparisons between the relationship status of women in this sample and the 2006 Annual Report I will attempt to make some comparisons, which should be interpreted cautiously. When asked to describe their current relationship status, 39% of the women in this sample reported being married, 32% reported being single, 17% reported being divorced or separated, and 1% reported being widowed, while 11% reported being partnered. By comparison, at post-injury year 10 the 2006 Annual Report indicated 33% of the sample to be married, 41% to be single, 23% to be divorced or separated, and 3% to be widowed. In the annual report it should be noted that relationship status data post-injury changes significantly over time. For example the 2006 report indicated 9% of persons with SCI to be divorced at the time of injury with this percentage rising to 28% at post-injury year 30.

Although it is difficult to make a direct comparison between employment relative to this sample and the 2006 Annual Report some comparisons will be cautiously made.

For example, it appears that a greater percentage of women in this sample were observed to report being employed (55%) as compared to the data included for persons with SCI over time in the 2006 Annual Report. The annual report considered employment from post-injury 1 to post-injury year 30 indicating the percentage of employed individuals to increase over time. For example, at the time of admission, 64% of those newly injured were employed. This percentage fell to 14% at post-injury year one but steadily increased to 42% at post-injury year 30.

In terms of educational level, the majority of women in this sample indicated an educational level beyond high school. Completing some college, university, or technical schooling was reported by 34%; 9% reported obtaining an associate's degree; 26% reported obtaining a bachelor's degree; and 16% reported obtaining a graduate degree. Attending but not completing high school was reported by 3% of the sample while 12% reported obtaining a high school diploma or general equivalency diploma. It is difficult to make a comparison between the sample of women in this study and persons included in the 2006 Annual Report as the data available on highest level of education completed was collected at the time of injury. The level of education at time of injury is unknown for the women in this sample as well as how many of the women returned to school post-injury.

Job Satisfaction (MSQ)

For this study, the mean overall score for the MSQ was 385.95 ($SD = 53.64$), with scores ranging from 271 to 490. Women who were working in positions for which they were "qualified" had statistically significant higher scores on the MSQ ($M = 391.44$, $SD = 33.24$) than women who were working in positions for which they were "overqualified" ($M = 369.60$, $SD = 37.99$). The mean scores between these two groups

were significantly different ($F = 3.141, p = .048$). This study demonstrates that women with SCI who were employed in positions that matched or were congruent with their level of education, training, interests, and abilities reported greater overall job satisfaction. Women employed in positions for which they were “underqualified” reported higher mean MSQ (job satisfaction) scores than did women who were employed in positions for which they were “overqualified,” however, these scores were not statistically significant. In summary, women with SCI who were employed in positions for which they were “qualified” had the highest mean job satisfaction score ($M = 391.44$) followed by women who were employed in positions for which they were “underqualified” ($M = 382.23$). Women who were employed in positions for which they were “overqualified” reported the lowest level of job satisfaction ($M = 369.60$).

The findings from this study were consistent with results from other studies that investigated the relationship between *job fit or congruence* and *job satisfaction*. For example, Jagger and Neukrug’s (1992) investigated the relationship between congruence and job satisfaction and found that working in a position that is congruent with one’s interests is associated with greater job satisfaction. In another study involving persons with disabilities with an average of two years of college/trade education, Chance and Young (2001) identified several predictors of greater job satisfaction. Among the indicators of greater job satisfaction were “being able to do something that uses my skills and abilities.”

A review of the means and standard deviations of the individual items on the MSQ revealed aspects of work that participants were both the most and least satisfied with. The top six items that participants identified themselves to be most satisfied with

included having the chance to help people, the chance to work alone, being able to take pride in a job well done, being able to do things that do not go against one's conscience, and being able to stay busy. Other areas where participants indicated higher levels of satisfaction included having variety in one's work, the working conditions (heating, lighting, ventilation, etc.), being responsible for planning one's work, being able to see the results of one's work, the chance to do work that is well suited to one's abilities/skills, the chance to make decisions or use one's judgment, being able to take pride in a job well done, the pleasantness of the working conditions, the friendliness of co-workers, being able to do something worthwhile, the chance to do one's best at all times, the chance to try out one's own methods of doing the job, the chance to do the job without feeling like one is cheating anyone, and the feeling of accomplishment one gets from the job.

The top six items that participants identified themselves to be least satisfied with were the chance to make as much money as friends, the way promotions are given, the chances for advancement, the way the job provides for a secure future, the way company policies are put into practice, and the chance to tell others what to do. Other areas where women indicated lower levels of satisfaction included the chance to have other workers look to them for direction, the social position in the community that goes with the job, the amount of pay for the work done, the technical know-how of the supervisor, the way the supervisor interacts with employees, the chances of getting ahead on the job, the competence of the supervisor in making decisions, the chance to associate with important people, the way work is delegated to others, the chance to be important in the eyes of others, and how one's pay compares with that of other workers.

Quality of Life (QLI)

For this study, the mean overall score for the QLI, which included both employed and unemployed participants, was 18.96 ($SD = 5.57$) with scores ranging from 5 to 30. The Family subscale generated the highest quality of life mean ($M = 21.39$, $SD = 5.96$) followed by the Social and Economic subscale ($M = 20.05$, $SD = 5.80$), the Psychological and Spiritual subscale ($M = 18.91$, $SD = 6.81$), and finally the Health and Functioning subscale ($M = 17.50$, $SD = 6.44$). As previously stated, in general, scores of 19 or below are indicative of poorer quality of life (C. Ferrans, personal communication, March 17, 2008). The importance of family, social and economic, psychological and spiritual, and health and functioning domains relative to quality of life were consistent with results from other studies that investigated quality of life (Brillhart, 2004; May & Warren, 2002; Tate & Forchheimer, 2001).

In this study, quality of life was investigated and examined in a number of ways. For example, quality of life was investigated between women with SCI who were employed and unemployed; women with SCI who were employed in positions for which they were qualified, overqualified, or underqualified; and women with SCI who were unemployed and either desired or did not desire to be employed. In addition, the relationship between job satisfaction and quality of life for women with SCI who were employed was also examined. Differences in quality of life were found in many of these comparisons. In summary, women who were employed had significantly ($t = 5.05$, $p < .001$) higher QLI scores ($M = 20.74$, $SD = 4.47$) than did women who were unemployed ($M = 16.44$, $SD = 5.32$). Women employed in positions for which they were qualified reported significantly higher scores on the QLI ($M = 21.03$, $SD = 4.29$) than did women

either employed in positions for which they were underqualified ($M = 15.35, SD = 2.89$) or overqualified ($M = 19.50, SD = 4.29$). A statistically significant difference was found between quality of life scores for women employed in positions for which they were qualified and women who were employed in positions for which they were overqualified ($F = 3.14, p = < .05$). Women who were employed in positions they were qualified for reported greater, but not statistically significant, quality of life than women who were employed in positions for which they were underqualified.

Women who are unemployed but desired to be employed reported significantly lower ($t = -4.05, p < .001$) quality of life scores ($M = 15.38, SD = 4.23$) than did women with SCI who are unemployed and did not desire to be employed ($M = 20.35, SD = 5.04$). The overall relationship between job satisfaction and quality of life for women with SCI who were employed was also investigated. This study demonstrated that although job satisfaction and quality of life are related in a positive way, the relationship is not statistically significant ($p = .22$). When the individual subscales of the QLI were considered, however, a low, positive statistically significant relationship ($r = .27, p = .010$) was identified between job satisfaction (MSQ) and the Social and Economic subscale of the QLI indicating there is a slight trend that women who report greater job satisfaction also report greater social and economic quality of life.

Findings Related to Research Questions

Research Question 1, Quality of Life Differences by Employment Status

The first research question asked: What is the difference in terms of quality of life for women with SCI who are employed and for women with SCI who are unemployed? I hypothesized that women with SCI who were employed would report greater perceived

quality of life than women with SCI who were not employed. This alternative hypothesis was supported ($p < .001$).

In general, women who were employed in this sample reported significantly higher levels of quality of life than did women who were unemployed. Although total quality of life, as measured by the overall score on the QLI was of primary interest for this study, a closer look at the individual subscales comprising the total QLI score revealed additional results that merit consideration. As previously stated, the total quality of life score on the QLI is comprised of four subscales: Health and Functioning, Social and Economic, Psychological/Spiritual, and Family. In considering individual subscales, it was observed that employment status had a statistically significant influence on all of the QLI subscales with the exception of the Family subscale. More specifically, significant differences ($p < .001$) were indicated in the Health and Functioning, Social and Economic, and Psychological/Spiritual subscale scores when examined by employment status. Women who were employed reported significantly higher levels of quality of life in these areas than women who were unemployed. On the Family subscale, although women who were employed had a higher overall mean score ($M = 22.10$) than women who were unemployed ($M = 20.62$), the difference was not significant ($p = .151$).

In terms of overall quality of life, the findings from this study were consistent with results from other studies that investigated the relationship between employment and quality of life for person's with SCI finding perceptions of higher quality of life to be associated with employment. Employment has been identified as a significant domain of quality of life (Anderson & Vogel, 2002; Boswell, Dawson, & Heininger, 1998), and a significant predictor of quality of life (Cushman & Hassett, 1992; Kemp & Vash, 1971;

Krause, 1992a; Krause & Anson, 1996b) and life satisfaction (Siösteen, Lundqvist, Blomstrand, Sullivan & Sullivan, 1990; Vogel, Klass, Lubicky & Anderson, 1998). Boswell et al. (1998) examined the meaning of quality of life as defined by adults with SCI through qualitative methods. Participants indicated work opportunities as one of the three most important domains of quality of life. Participants stressed that “opportunities to contribute and create through their occupations and/or related activities were fundamental contributors to quality of life” (p. 30). Crewe (1980), the first researcher to consider quality of life for persons with SCI, found that persons with SCI reported significantly lower levels of satisfaction with life, especially in the area of employment.

Results of this study are particularly important and relevant due to the lack of research that currently exists related to employment and quality of life for women with SCI. The majority of studies (Anderson & Vogel, 2002; Boswell et al., 1998; Cushman & Hassett, 1992; Krause, 1992a; Krause & Anson, 1996b) that currently support the relationship between employment and quality of life are based primarily on studies of men with SCI.

Research Question 2, Differences in Satisfaction by Employment

The second research question asked: What is the difference in terms of job satisfaction for women who are employed in positions for which they are qualified and women employed in positions for which they are under or overqualified? I hypothesized that women with SCI who were employed in positions for which they were qualified would report greater job satisfaction than women who were employed in positions for which they were either under or overqualified.

The findings of this study indicate that women who were employed in positions for which they were qualified had significantly higher levels of job satisfaction than women who were employed in positions for which they were overqualified. Although women who were working in positions for which they were underqualified reported lower mean MSQ scores than women working in positions for which they were qualified, this difference was not statistically significant. Given these findings, the hypothesis was partially supported.

This hypothesis was based on the Minnesota Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984; Lofquist & Dawis, 1969), which considers the “congruence” or match between the person and his or her work environment to be of utmost importance in determining one’s degree of job satisfaction. The findings from this study were consistent with results from other studies that investigated the relationship between *job fit* or *congruence* and *job satisfaction* for persons with disabilities (Chance & Young, 2001; Jagger & Neukrug, 1992).

Research Question 3, Differences in Quality of Life by Employment Qualification

The third research question asked: What is the difference in terms of quality of life for women who are employed in positions for which they are qualified and women employed in positions for which they are under or overqualified? I hypothesized that participants who were employed in positions for which they were qualified would report greater quality of life than women who were employed in positions for which they were either under or overqualified.

The findings of this study indicate that women who were employed in positions for which they were qualified had significantly higher levels of quality of life than

women who were employed in positions for which they were underqualified. Although women who were working in positions for which they were overqualified reported lower mean QLI scores than women working in positions for which they were qualified, this difference was not statistically significant. Given these findings, the hypothesis was partially supported.

This hypothesis was also based on the Minnesota Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984; Lofquist & Dawis, 1969). Although the Minnesota Theory of Work Adjustment is focused toward the outcomes of job satisfaction or work adjustment I hypothesized that the same premise would hold true for quality of life, that a woman's perception of quality of life would increase as the level of "congruence" between one's position and level of education, training, interest, and abilities increased.

Research Question 4, Quality of Life Differences by Employment Desire

The fourth research question asked: What is the difference in terms of quality of life (QLI) for women who are unemployed but desire to be employed and women with SCI who are unemployed but do not desire to be employed? I hypothesized that women who were unemployed, but desired to be employed, would report significantly lower quality of life (QLI) than women who were unemployed but did not desire to be employed. The QLI score differences between these two variables ($p = <.001$) was statistically significant and supported the hypothesis.

As previously mentioned, the QLI yields a total QLI score as well as four subscales including: Health and Functioning, Social and Economic, Psychological and Spiritual, and Family. It should be noted that although this research question was primarily interested in the total QLI score or one's overall perceived quality of life,

statistically significant differences were also observed across all four QLI subscales (Health and Functioning, $p = <.005$; Social and Economic, $p = <.001$; Psychological and Spiritual, $p = <.001$; and Family, $p = <.05$) indicating that a strong relationship exists not only between a woman's overall or total perceived quality of life and her desire to be employed but also all four individual domains that comprise total quality of life. This finding suggests that the desire to be employed impacts all aspects of a woman's life in terms of quality of life.

In considering the four subscales, statistically stronger statistical differences were observed between one's desire to be employed and the Social/Economic and Psychological/Spiritual subscales. This finding suggests that one's desire to be employed has a stronger effect on one's Social/Economic and Psychological/Spiritual quality of life than it does on one's Health/Functioning and Family quality of life. Although still statistically significant, the smallest observed difference was between desire to be employed and Family quality of life. More specifically, being unemployed yet desiring to be employed had the least amount of influence on a woman's sense of Family quality of life suggesting that other variables account or attribute to a woman's sense of Family quality of life.

This finding, that quality of life is impacted by one's desire to be employed, is supported by Ferrans and Powers (1985) work as well as the premise behind the QLI. More specifically, Ferrans (1990) defines quality of life as a person's sense of well being that results from how satisfied or dissatisfied a person is with areas of life that are identified as personally important. For example, if a woman is unemployed but identifies being employed as being personally important or something that she would like to

achieve, perceived quality of life or satisfaction with life is likely to be influenced. In terms of one's desire to be employed, Krause and Anson (1996b) found that many persons with SCI would like to be working but do not believe that it is possible. One study that investigated perceived barriers to employment found that up to 61% of unemployed persons with SCI desired to be employed (Fiedler, Indermuehle, Drobac & Laud, 2002). Relative to this study, 69% of the participants who were unemployed stated that they would prefer to be employed.

Research Question 5, Relationship Between Job Satisfaction and Quality of Life

The fifth research question asked: What is the relationship between job satisfaction and quality of life for women with SCI who are employed? Specifically I hypothesized that employed women with SCI who reported greater job satisfaction (MSQ) would also report greater levels of perceived quality of life (QLI) and vice versa. Although overall quality of life and job satisfaction were related in a positive way, the relationship was not strong enough to be statistically significant ($p > .05$). In considering the correlation between job satisfaction and quality of life, a statistically significant positive correlation was observed only between job satisfaction and the Social and Economic subscale of the QLI. This correlation was significant at the 0.05, level meaning that as a woman's job satisfaction increased so did her Social and Economic quality of life and vice versa.

Limitations of the Study

As with any research study, there are limitations to this study that should be taken into consideration when reviewing the findings. First, caution should be used when generalizing the results of this study to the SCI population at large or to women with SCI

as a whole. Although this study included a large sample of women with SCI ($N = 190$), random sampling was not utilized, which for some (Black, 1999) raises questions regarding generalizability of the study's findings and conclusions. It should be noted that although 190 participants could be considered a small sample, it exceeds any individual study to date that has considered the relationship between quality of life, job satisfaction, and the return to work experiences of women with SCI.

Lack of diversity within the sample is also a limitation. Given that White American women with SCI made up 81% of this sample, caution should be taken when generalizing the results of this study to women with SCI who are African American, Asian American, Latina American, or multi or biracial. It is unclear what a "diverse" group would look like for this population given that the majority of spinal cord injuries occur among males who are White and African American. As stated in Chapter 1, the 2006 Annual Statistical Report for the Model SCI Care Systems indicated the greatest documented percentage of spinal cord injuries to have occurred among persons who were White American (63%) and African American (23%; NSCISC, 2006). In terms of generalizing results of a nonrandom sample, Heppner et al. (1999) suggests that studies can follow the "good enough" principle meaning that nonrandom samples can have characteristics of a population with generalizations being considered reasonable.

Another limitation to be considered is related to the majority of participants being recruited through the Internet through SCI related web sites and list-serves. Although speculative, it is possible that participants may have shared some personality characteristics that may not be representative of all persons or women with SCI. For example, participants who completed this survey may be more likely to volunteer for

projects, be interested in spinal cord information and research, participate in research related projects, or own and operate a computer. This online format also has the potential to exclude participants of lower socioeconomic status, lower educational status, or people who are less informed about online SCI resources.

Participant self-reporting could be considered another limitation. Heppner et al. (1999) suggest some potential disadvantages with self-reported data with participant bias being one of the most problematic. Heppner et al. suggest that participants “may consciously or unconsciously respond in a way that yields a score that reflects a response bias rather than the construct being measured” (p. 304). The potential also exists for participants to consciously or unconsciously respond in the manner consistent with how they think the researcher wants them to respond. Although speculative, it is possible that a woman with SCI could respond in a way that would positively represent her or other women with disabilities as a whole.

Implications for Practice

The findings presented in this study may be beneficial to rehabilitation counselors, counselors, or other rehabilitation professionals who provide services to persons with SCI, more specifically women with SCI. The results of this study provide a further insight related to the motivations, challenges, and issues that women with SCI experience related to either considering, attempting, or returning to work. Information related to why women with SCI may choose or not choose to return to work, common challenges/barriers faced, and perceived needs can provide practitioners with an increased understanding of what women with SCI may experience as well as the inter-relatedness between return to work, job satisfaction, and quality of life. Understanding

more about the experiences of women with SCI in relationship to work, quality of life, and job satisfaction can provide practitioners with the opportunity to develop the necessary skills and resources to be able to most effectively work with women with SCI including helping them reach their personal and employment goals.

The results have specific relevance for practitioners who provide rehabilitation counseling or employment-related counseling/services to women with SCI. In any rehabilitation focused program or service, return to work or achieving gainful employment will always be a primary goal if a person is capable of returning to work with or without accommodations. As a practitioner, understanding the issues, barriers, concerns, and challenges that may be common for women with SCI relative to return to work is paramount for successful rehabilitation or more specifically obtaining the goal of successful re-entry into the workforce, or one's community. As practitioners begin to understand the common issues, barriers, concerns, and challenges faced by women who desire to return to work they will be able to develop greater expertise, insights, and practical solutions to assist women with SCI in successfully reaching their goals and objectives. Women with SCI may also be proactively educated and empowered relative to common issues, barriers, concerns, and challenges that they may face with practical solutions, suggestions, and resources being offered.

The findings in this study can also be of particular relevance to federal-state vocational rehabilitation counselors (OVR) whose primary objective is to provide the necessary services, equipment, accommodations, and consultation to help persons with SCI help themselves prepare for, start, and maintain a career. For practitioners within the

state system “success” is equated with achieving gainful employment. More specifically, a case is considered “successfully closed” when a person has returned to work.

The professional literature consistently addresses the importance of and need for vocational rehabilitation following spinal cord injury (Castle, 1994; Conroy & McKenna, 1999; Devivo & Fine, 1982; Krause, 1992; Krause & Anson, 1996; Schonherr et al., 2004; Ville, 1996). Yet, many obstacles and needs remain as reflected in the low documented employment rates of persons with SCI (Athanasou et al., 1996; Trieschmann, 1988). As noted, the majority of literature on spinal cord injury and employment has been conducted with men. To date little is still known and understood about the return to work related experiences, work related barriers, and employment statistics of women with SCI. This study extends those findings for women with SCI and for the counselors who work with them.

Implications for Training

The findings presented in this study can be beneficial to counselor educators, rehabilitation educators, SCI researchers, or other professionals who educate others to work with women with SCI. The results have relevance for educational/training programs that prepare rehabilitation counselors or counselors to work with persons with disabilities, more specifically women with SCI.

The results of this study indicate that women with SCI face significant barriers in terms of employment related to medical complications, chronic pain, fatigue, depression, transportation, accessibility, etc. Additionally, the results of this study indicate that returning to work is an important goal for women with SCI, one that significantly influences a woman’s perceived sense of quality of life not only in general but also in

varying areas of a woman's life. Rehabilitation counseling education and/or related training programs have the ethical responsibility to provide students and/or trainees with the necessary skill set and knowledge base to not only understand how SCI impacts all areas of life for women with SCI but also how to address common barriers including barriers to employment.

Counselors should also be educated to have an in-depth understanding of how women and men with SCI differ. Spinal cord injury is a disability group that is hopefully addressed in all rehabilitation education and rehabilitation counseling programs. As the body of literature related to SCI and gender differences continues to grow and evolve, future counselor educators will be able to provide more informative information and training to counselors in regard to differences that exist between men and women with SCI vocationally, psychologically, socially, and physically. This information would also be beneficial to other rehabilitation professionals including physical therapists, occupational therapists, or rehabilitation nurses who work with women with SCI as part of a multi-disciplinary team.

Implications for Research and Future Research Questions

Finally, the results of this study have implications for researchers who have interest in furthering the field of research related to employment for women with SCI or in exploring and defining the differences that may exist between women and men with SCI. In either instance, both are currently limited areas of research within the professional literature. Although there has been an increase in empirical studies that have explored varying issues related to women with SCI over the past decade, we are still in

our infancy in terms of making conclusions about what is like to be a woman with a SCI, specifically a woman with SCI who is or may become interested in returning to work.

Several suggestions are presented that may add to the research base for this area of study. As previously mentioned, the field of research related to spinal cord injury is still in its infancy in terms of research related to employment, job satisfaction, and quality of life for women. Future research could include both quantitative and qualitative studies that explore issues common to women with SCI such as commonly perceived barriers to employment, how employment influences quality of life, how job satisfaction is defined and determined, or how one's job fit or match influences both quality of life or job satisfaction.

Future research could also examine how women with SCI operationally define and determine quality of life. Many researchers suggest that quality of life may be one of the more difficult concepts to explain and define (Fresher-Samways et al., 2003; McDaniel & Bach, 1994; Pain et al., 1998; Schalock, 1997; Tate et al., 2001).

Researchers may find that quality of life is very situational and is best defined and determined by each individual. Future research could continue to explore and define the similarities and differences that exist between men and women with SCI relative to nonmedical related factors, such as quality of life and job satisfaction, as the majority of studies related to differences between men and women have historically focused on medically or physically related differences.

Future research could also focus on the counseling-related experiences of women with SCI relative to return to work related issues, work adjustment, overcoming work-related barriers, and advocacy. This will educate and inform rehabilitation counselors and

educators about the most and least effective vocational and personal counseling practices for women with SCI. Research should also be focused toward diverse populations of women with SCI including race/ethnicity, sexual orientation, and socioeconomic status to understand how these variables interact and influence other variables including employment opportunities, the perception of one's employment opportunities or career options, job satisfaction, and quality of life. In addition, future studies should investigate quality of life and job satisfaction across various instruments, including the MSQ and QLI that measure job satisfaction and quality of life.

Finally, the results of this study have implications for researchers who have interest in furthering the body of professional literature related to employment for women with SCI or in exploring and defining the differences that may exist between women and men with SCI relative to return to work. In either instance, both are limited areas of research within the professional literature.

In summary, the results of this study indicate that women with SCI face significant barriers in terms of employment. Additionally, the results of this study indicate that returning to work is an important goal and role for women with SCI, one that significantly influences a woman's perceived sense of quality of life not only in general but in varying areas of a woman's life. Although there has been an increase in empirical studies that have explored varying issues related to women with SCI over the past decade, we are still in our infancy in terms of making conclusions about what is like to be a woman with a SCI, specifically a woman with SCI who is interested in returning to work. It is hoped that research will continue to be focused toward the return to work

issues and experiences of women with SCI including how those issues and experiences influence quality of life and job satisfaction. The end.

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APPENDIX A

WEBSITES FOR THE RECRUITMENT OF WOMEN WITH SCI

- The National Spinal Cord Injury Association
(www.spinalcord.org)
- The Spinal Cord Injury CareCure Community
(www.sciwire.org)
- The Christopher and Dana Reeve Paralysis Resource Center (www.paralysis.org)
- The University of Alabama Spinal Cord Injury Information Network
(www.spinalcord.uab.edu)
- Mobilewomen.org: An online magazine sponsored by Rutgers University for women with SCI
(www.mobilewomen.org)
- The Arizona Spinal Cord Injury Association
(www.azspinal.org/research.aspx)
- SCI-INFO-PAGES, Quadriplegic, paraplegic, and caregiver resources
(www.sci-info-pages.com)
- The Spinal Cord Injury Zone
(www.thescizone.com)
- Apparelyzed: Spinal Cord Injury Peer Support Network
(www.apparelyzed.com)

APPENDIX B

RECRUITMENT EMAIL OR LETTER

Dear Potential Research Participant:

**ARE YOU A WOMAN WITH A SPINAL CORD INJURY
WHO HAS BEEN INJURED FOR AT LEAST ONE YEAR?**

If so, you have important information that could greatly benefit other women with spinal cord injuries in similar situations.

This is a request for women with SCI (aged 18 or older) who are both employed and unemployed to participate in an on-line research project.

The Need: Research on the return to work experiences of women with SCI is close to nonexistent. Increasing the understanding of what it is like to be a woman with a SCI who has either returned to work, attempted to return to work, or would like to return to work will offer very valuable insight into understanding the most effective approaches to helping women return to work.

Purpose: The purpose of this study is to gain an increased understanding of the return to work experiences of women with SCI as well as issues or barriers associated with the ability or inability to return to work. Factors that influence quality of life and job satisfaction will also be investigated.

About the researcher: My name is Elizabeth Lasher and I am a doctoral student in the Department of Counselor Education, Counseling Psychology, and Rehabilitation Education at The Pennsylvania State University. I have had a special interest in working with women with spinal cord injuries for a number of years. Before returning to school to pursue my doctoral degree, I worked as a rehabilitation counselor for ten years on a spinal cord injury unit at a rehabilitation hospital in Pittsburgh, PA. This research project is a partial requirement for completion of my degree at The Pennsylvania State University.

If you are interested in participating in this on-line study, or would like to read more about it, please “click” on the following link, which will take you to a secure website.

www.psychdata.com

If you have any additional questions or will require accommodation(s), please contact me at ejl155@psu.edu. Thank you for your time and consideration.

Sincerely,

Elizabeth J. Lasher

APPENDIX B

VERBAL RECRUITMENT SCRIPT

Hello. My name is Elizabeth Lasher. I am a doctoral student in the Department of Counselor Education, Counseling Psychology, and Rehabilitation Education at The Pennsylvania State University. I am recruiting women with spinal cord injuries for an on-line research project that will investigate quality of life, job satisfaction, and the return to work related experiences of women with SCI. I am seeking both employed and unemployed women who are at least 18 years of age or older and who have been injured for at least one year to participate in this study.

I am currently conducting this research study as a partial requirement for my doctoral degree at The Pennsylvania State University. For many years, I have had interest in spinal cord injury specifically as it related to women. Before returning to school to pursue my doctoral degree, I worked as a rehabilitation counselor for ten years on a spinal cord injury unit at a rehabilitation hospital in Pittsburgh, PA.

Currently, research on the return to work experiences of women with SCI is close to nonexistent. Increasing the understanding of what it is like to be a woman with a SCI who has either returned to work, attempted to return to work, or would like to return to work will offer very valuable insight into understanding the most effective approaches to helping women return to work. The purpose of this study is to gain an increased understanding of the return to work experiences of women with SCI as well as issues or barriers associated with the ability or inability to return to work. Factors that influence quality of life and job satisfaction will also be investigated.

If you are interested in participating in this on-line study, or would like to read more about it, you can do so at www.psychdata.com which is secure and encrypted website. Do you have any questions or will you require any accommodations? If you would like to contact me in the future, I can be reached by email at ejl155@psu.edu. Thank you for your time and consideration.

APPENDIX C

REQUIREMENTS AND INFORMED VOLUNTARY CONSENT

An Investigation of Quality of Life, Job Satisfaction,
and the Return to Work Related Experiences
of Women with SCI

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Purpose: The purpose of this study is to describe and gain an increased understanding of the relationship between quality of life, job satisfaction, and the return to work related experiences of women with spinal cord injury. This study will examine personal, work, home, and community factors that influence the perceptions of quality of life and job satisfaction for women with SCI. This study will also investigate the primary reasons and barriers to unemployment following injury. In order to participate in this research study, you must (a) be female, (b) have a medical diagnosis of paraplegia, quadriplegia, or tetraplegia following SCI, (c) have been at least 18 years of age at the time of injury, and (d) be a minimum of 1 year post-injury at the time of participation in this study. This research study is part of a doctoral dissertation at The Pennsylvania State University.

Procedures To Be Followed: You will be asked to complete an online survey that will ask you questions related to your background, injury, employment related experiences, and perceived quality of life. If you are currently employed, you will also be asked to complete a survey related to your job satisfaction.

Your participation and responses are confidential. If you do not meet the above mentioned inclusion criteria, found under the *Purpose* section, your responses will not be able to be included in this study.

Benefits: The benefits that you may experience from participating in this study may be an increased awareness of your level of satisfaction related to your everyday life and/or job. By participating in this study, you will be contributing to an effort to increase our knowledge about the return to work related experiences of women with SCI. This increased knowledge can be used to provide more appropriate post-injury return-to-work and employment services to women with SCI.

Duration and Time: This online survey will take approximately 20-30 minutes to complete.

Statement of Confidentiality: Your confidentiality will be maintained to the highest level possible and to the extent permitted by the technology utilized. There is no guarantee of protection against third party access, however, the data will be encrypted and stored on a secure server as soon as it is received. Additional information related to the security of the website being used in this study can be found on the PsychData website (www.psychdata.com). The survey will not ask for any specific information that would identify you with your responses. My academic advisor, Dr. Brandon Hunt, and I will have access to the final data and records, however, no information that could identify you in anyway will be used.

Right to Ask Questions: You have the right to ask questions about this study and my contact information is noted above. You can also contact The Office for Research Protections with any questions that you may have about this study at (814) 865-1775.

Voluntary Participation: Your participation in this research study is voluntary, and you can choose not to answer specific questions or quit participating at any time. Completion and submission of the survey implies your consent to participate in this research. Please print off this form to keep for your records.

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

1. I have read the above requirements and informed voluntary consent and wish to participate in this on-line study.
 - a. yes
 - b. no
2. Age?
3. Race/Ethnicity?
 - a. African American
 - b. White American
 - c. Asian American
 - d. Latina American
 - e. Native American
 - f. Multiracial or Biracial
 - g. Other
4. What state do you currently reside in?
5. What is your current relationship status?
 - a. Married
 - b. Single
 - c. Divorced/Separated
 - d. Widowed
 - e. Partnered
6. What is your sexual orientation?
 - a. Heterosexual
 - b. Lesbian
 - c. Bisexual
7. What is your highest educational level?
 - a. Some high school
 - b. High school diploma/GED
 - c. Some college, university, or technical school
 - d. Associate's degree
 - e. Bachelor's degree
 - f. Graduate degree
8. What is your level of spinal cord injury?
9. Number of years post injury?
10. How did you sustain your spinal cord injury?

- a. Motor vehicle accident
 - b. As a result of a fall
 - c. As a result of an act of violence
 - d. As a result of a sports related injury
 - e. Other, please specify
11. Which of the following best describes your present living situation?
- a. Reside alone without any type of personal care assistance
 - b. Reside with spouse or significant other
 - c. Reside with my parents or family members
 - d. Other (please specify)
12. Do you currently receive any type of personal care assistance?
- a. No
 - b. Yes, on a part-time basis
 - c. Yes, on a full-time basis
 - d. Yes, on an as needed basis
 - e. Other (please specify)
13. How would you describe the accessibility of your home in relationship to your functional needs?
- a. Very accessible
 - b. Accessible
 - c. Somewhat accessible
 - d. Poor level of accessibility
14. How would you describe the accessibility of your community in relationship to your functional needs?
- a. Very accessible
 - b. Accessible
 - c. Somewhat accessible
 - d. Poor level of accessibility
15. What is your current employment status?
- a. Employed full-time (35 or more hours/week)
 - b. Employed part-time (1 to 34 hours/week)
 - c. Temporary part-time employment (employed through a temporary agency)
 - d. Temporary full-time employment (employed through a temporary agency)
 - e. Unpaid work outside of the home (e.g., internship, volunteer work)
 - f. Unemployed
 - g. Other (Please specify)

If you indicated in question #15 that you are currently unemployed, please skip to question #25. If you currently perform unpaid work, please consider yourself to be within the employed category.

16. In reference to question #15, how many hours do you work (paid or unpaid) per week?
17. How long have you been employed at your current job? Please specify in years and months.
18. What is your current job title?
19. In returning to work post-injury, did you or do you desire to return to work in a position that matched your pre-injury level of education, training, interests, and abilities?
- Yes
 - No
20. If you answered “no” to question #19 please explain
21. Which of the current statements most closely matches your current job situation?
- I believe that I am working in a job that I am under-qualified for according to my level of education, training, interests, and abilities.
 - I believe that I am working in a job that I am qualified for according to my level of education, training, interests, and abilities.
 - I believe that I am working in a job that I am over-qualified for according to my level of education, training, interests, and abilities.
 - other (Please specify)
22. If currently employed, please indicate any of the following secondary conditions that you have experienced that significantly interfere or have significantly interfered with your ability to work.
- bowel and bladder dysfunction
 - autonomic hyperreflexia/autonomic dysreflexia
 - spasticity
 - contractures
 - decubitus ulcers
 - problems resulting from decreased bone density
 - other (Please specify)
23. If currently employed, how would you describe the accessibility of your work environment in relationship to your functional needs?
- Very accessible
 - Accessible
 - Somewhat accessible
 - Poor level of accessibility
24. If currently employed, what types of accommodations did you need to enable you to return to gainful employment?
- personal assistance/attendant care on the job
 - personal assistance/attendant care for getting ready for work

- c. work site accessibility
- d. home accessibility
- e. accommodation related to performing my job duties
- f. transportation to and from work
- g. additional training because I couldn't perform my pre-injury job
- h. guaranteed medical coverage
- i. other (Please specify)

For those who are currently "employed" you may skip questions 25 through 30. Please go to question #31.

25. If currently unemployed, did you stop working as a result of your injury?

- a. yes
- b. no

26. If currently unemployed, have you been employed at any time since the date of your injury?

- a. Yes
- b. No

27. If you answered "yes" to question #26, please indicate how long you were employed, your job title, and why you become unemployed from this position.

28. If currently unemployed, would you prefer to be employed?

- a. Yes
- b. No

29. If you answered "no" to question #28, please explain your reason(s) for choosing to remain unemployed.

30. If currently unemployed, what types of accommodations do you believe that you would need to enable you to return to work?

- a. personal assistance/attendant care on the job
- b. personal assistance/attendant care for getting ready for work
- c. work site accessibility
- d. home accessibility
- e. accommodation related to performing my job duties
- f. transportation to and from work
- g. additional training because I can't perform my pre-injury job
- h. guaranteed medical coverage
- i. other (Please specify)

31. For those who are either employed or unemployed: What are/were your primary reasons or motivations for returning or attempting to return to work? Please rank order each reason that applies starting with 1 as the most important, 2 as the next important and so forth.

- a. financial (wage and fringe benefits)
- b. feeling of achievement, responsibility, and growth
- c. feeling of self-esteem and self-respect
- d. provides me with socialization
- e. enjoyment of work itself
- f. to feel like I'm making a difference in the world
- g. to utilize my education and training
- h. because my life situation changed such as my marital/relationship status, children entering or leaving the home, family responsibility, etc...
- i. other

32. If currently or previously employed post-injury, in your own words, how would you describe your overall experiences related to returning to work after your injury?

33. Related to your overall experiences in returning to work after your injury, what did you find especially *helpful* or *unhelpful* in terms of your pursuit of gainful employment?

34. In assisting women with spinal cord injuries to return to work, what do you think rehabilitation professionals should know or do that they might be unaware of? What recommendations would you give rehabilitation professionals?

APPENDIX E

QUALITY OF LIFE INDEX (QLI)

The Quality of Life Index-Spinal Cord Injury Version is a public domain instrument that is available online at <http://www.uic.edu/orgs/qli/index.htm>. The questionnaire, subscale items, scoring description and computer syntax are available to download as PDF documents.

APPENDIX F

MINNESOTA SATISFACTION QUESTIONNAIRE-LONG FORM (MSQ)

The Minnesota Satisfaction Questionnaire-Long Form is a copyrighted instrument. Individuals interested in using this instrument must obtain permission from Vocational Psychology Research, University of Minnesota (<http://www.psych.umn.edu/psylabs/vpr>).

VITA

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COUNSELING EXPERIENCE

Career Counseling Coordinator

Continuing Education, Penn State University, University Park, PA (July 2007-present)

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