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**RELATIONSHIPS AMONG PERSON AND ENVIRONMENT VARIABLES AND
TURNOVER INTENTION IN ADULTS WITH MULTIPLE SCLEROSIS**

**RELATIONSHIPS AMONG PERSON AND ENVIRONMENT VARIABLES AND
TURNOVER INTENTION IN ADULTS WITH MULTIPLE SCLEROSIS**

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Rehabilitation

By

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Abstract

The organization and management literature presents a large base of research on the concept of turnover intention, i.e. the point at which a person decides to leave employment. What is known is that turnover intention is the precursor to employee turnover, yet very little research exists in the rehabilitation field to address this concept in terms of persons with chronic illness and disability. This study examines this variable in the population of adults with multiple sclerosis (MS). Employing multivariate analysis of variance (MANOVA) to analyze three blocks of variables and their impact on turnover intention, the results show that groups with low turnover intention differ significantly from groups with high turnover intention on environmental variables. Interventions geared toward counselors within the state-federal rehabilitation system, which would amend current agency policy, are recommended.

This dissertation is approved for
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Dedication

I would like to dedicate this project to people whom I care about deeply, and have lost along the way: my precious grandmother, Jeanne Bingham; my uncle, Bruce D'Amico; my cousin, Billy Dale Bishop; and a friend, Mike Hoppe.

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Chapter 1

Introduction

The purpose of this study was to analyze relationships among person, environment, and person within environment variables in adults with multiple sclerosis (MS) that influence turnover intention, and to propose areas for interventions. Turnover intention refers to one's plans to voluntarily leave employment, and can include thoughts of quitting the job, verbalizations of plans to leave, or actions such as seeking alternative employment. In accordance with empirical literature and the Minnesota Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984), certain blocks of variables were created: person variables, environment variables, and person within environment variables.

The concept of turnover intention is derived from The Theory of Planned Behavior (TPB; Azjen, 1985). According to the TPB, behavioral intention is the primary antecedent to performing a behavior. A high correlation exists between one's attitude to perform the behavior (attitude), the perception that others want them to perform the behavior (subjective norms), and behavioral intention. There is a tenure component to the TWA, which represents work adjustment. For purposes of this study, turnover intention was used in place of the tenure component to TWA. This decision was based on the vast empirical literature discussed further in chapter 2, which asserts that turnover intention is the precursor to turnover. If turnover intention is eliminated, tenure is assumed. This allowed for the combination of TWA and TPB as the theoretical basis for this

study. Specifically, empirical literature and TWA were the basis for dependent variable selection, while TPB was the basis for using turnover intention.

The intended outcome of the study was to propose interventions in each block of variables, which can be utilized by rehabilitation professionals to reduce turnover intention in the population, increasing the ability of this talented and educated population to remain employed.

Statement of the Problem

Multiple Sclerosis is a chronic neurological disease, affecting as many as 400,000 Americans, and approximately 2.5 million people worldwide (National Multiple Sclerosis Society, 2007). Adults diagnosed with chronic diseases such as MS face a daunting challenge in terms of dealing with the multitude of symptoms, treatments, and unpredictability that can accompany the disease. The effects of MS can be very pervasive, affecting participation in many valued life roles, including employment. MS can produce various sensory, motor, cognitive, and other symptoms. In turn, these symptoms produce what are often hidden functional limitations that reduce capacity and result in employment barriers. Often, employers are not aware a disability or illness exists. If a person with MS has not disclosed the diagnosis to the employer, certain work limitations that present as a result of MS could be misconstrued as laziness, lack of productivity, or inability to perform job duties to name a few. For example, if a person diagnosed with MS has a relapse, he/she may not be able to work for several days and will call in sick. After several instances of this occurring, the employee is seen as non-productive or undependable and may be at risk of being fired, or

may choose to leave the job. Other examples include when progressive worsening of the disease prevents an individual from performing all essential functions of the job, or when cognitive deteriorations prevent an individual from performing assigned tasks. Each situation puts the individual at risk of losing the job if the employer views him or her as non-productive, or incapable of performing job duties. Because MS affects each person differently, it is impossible to account for each possibility that might produce a barrier to employment.

Further, barriers are largely a result of environmental rather than individual factors, so what might be a barrier for one person with MS in a certain work environment may not be a barrier for another person with MS. One's continuum of functioning is often impacted to a greater degree by the environment than specific symptoms.

There is abundant research available that discusses the employment difficulties faced by adults with MS (Kornblith, LaRocca & Baum, 1986; O'Day, 1988; Phillips & Stuitbergen, 2006; Rumrill & Hennessey, 2004). Some of these difficulties include increased absence from work, inability to perform all essential functions of the job, cognitive limitations, and others. Since MS usually presents mid-career, employment issues are likely for many persons with the disease. Despite the advances in treatment for MS, and the passage of the Americans with Disabilities Act (ADA), the employment outlook is still bleak for individuals with MS.

A significant vocational issue for this population is that they are overwhelmingly unemployed (Kornblith, LaRocca, & Baum; 1986, LaRocca; 1995, O'Day, 1998; Rumrill & Hennessey, 2004), despite the fact that many have work histories (Jackson & Quall, 1991; LaRocca & Hall, 1990; McNulty, 2007; Rumrill & Hennessey, 2004), and the majority are working at the time of diagnosis (Kornblith, et.al., 1986; Rumrill & Hennessey, 2004). People with MS tend to leave employment at some point following the diagnosis. These premature exits from employment are a concern for several reasons. First, persons with MS in general represent well-educated, experienced workers, who express a desire to work (Gordon & Feldman, 1997; McNulty, 2007). Consequently, not only is the person with the diagnosis impacted by loss of employment, but also the workplace is impacted due to the loss of this valuable base of employees.

Further, studies have shown that quality of life is higher in persons with MS who are working (Johnson, Amtmann, Yorkston, Klasner, & Kuehn, 2004), while loss of ability to work is related to decreased quality of life in this population (Aronson, 1997). Individuals with MS experience other benefits from working, such as increased self-esteem, social contact, and a sense of identity (Morrow, 2007). These traits may be useful when dealing with the increased symptoms, loss of functioning, and stress that may accompany the disease.

Finally, this premature exit from employment produces a considerable financial toll that is experienced by the individual with MS, employers, and society in general. The individual loses their earnings from employment, as well as any medical and retirement benefits, not to mention the incurred costs of treatments

and indirect costs such as home remodifications and even lost opportunities. Depending upon the study, the lifetime cost to a person with MS can range from \$495,845 (Minden, Marder, Harrold, & Dor, 1993) to \$2.2 million (Whetton-Goldstein, Sloan, Goldstein, & Kulas, 1998). The employer suffers losses of productivity and turnover costs, e.g., training replacements, which can be costly. The national economic impact of MS on society is estimated at \$1500 per person, and \$420 billion nationally (Johnson, et. al., 2004).

Significance of the Current Study

Turnover intention has been researched widely in the organization and management literature, and several models of turnover exist in those fields to help explain turnover in the workforce. A key outcome of this body of literature is that turnover intention is the best predictor of turnover (Bluedorn, 1982; Freund, 2005; Hui, 1988, Vanderberg, 1999). This is critical information for the field of rehabilitation, since turnover intention provides an area that can be targeted for interventions. Due to the alarming statistics regarding premature exits from employment, an intended goal of this study is to explore variables that might impact the turnover intention of adults with MS and propose interventions in those areas.

To date, little research on turnover intention has been conducted that includes the aspect of chronic illness and disability. A literature search of databases Eric, Ebsco Academic Search Premier, Cinahl, Proquest and PsycInfo for articles referencing both turnover intention and disability yielded only one result. Pack, Roessler, Turner, and Robertson (2007) investigated turnover

intention in adults with multiple sclerosis. This lack of research alone establishes a need to further the research on turnover intention in the field of rehabilitation, including the critical component of chronic illness and disability, so that more information on this crucial topic is available to both researchers and practitioners in the field of rehabilitation. In addition to furthering the research on this topic, an intended outcome was to propose possible interventions in previously discussed blocks of variables, which could be utilized by rehabilitation practitioners at this critical point of turnover intention. By doing so, perhaps this trend of premature exits from employment in this population can be reduced.

This study has significance for employees with MS, employers, rehabilitation practitioners, and the field of human resources. For working adults with MS, continuity of employment provides more stable income, a vital necessity in dealing with chronic illness. Any employment related benefits such as medical, retirement, short and long-term disability are critical for anyone, but especially so in this population. The increased costs of medical care associated with this diagnosis make health insurance plans crucial. When exacerbations or relapses occur that prevent the individual from working, having short or long term disability benefits can be used to have a continuous source of income, allowing the individual to focus on treatment of their symptoms as opposed to how to exist financially. As a result of the progressive nature of MS, retirement benefits such as 401k plans will be a valuable asset in instances when a person must leave employment. Perhaps more important even than financial benefits of working are

issues such as identity, increased quality of life, increased social contacts, and the sense of purpose that is derived from employment.

A major benefit for employers and the HR field would be to reduce turnover costs. Without having to experience loss of productivity, combined with expenses of hiring and training, employers are in a much better situation with regard to finances and labor pool. In addition to saving money, there is the added benefit of retaining this talented labor pool. Some literature exists that concludes that turnover can decrease morale at a place of business (Sheehan, 1993). Hence the benefit to employers to reduce turnover where possible has measures beyond financial.

Finally, rehabilitation practitioners benefit from having more options available to them in the form of interventions to allow their clients with chronic illness, in this case MS, to retain employment. Indeed, the stated goal of the state/federal Vocational Rehabilitation (VR) program is not only to assist persons with obtaining employment, but with maintaining employment as well. By knowing the factors that contribute to turnover intention, rehabilitation counselors can intervene in these areas. This will allow more persons with MS to avoid premature exits from employment, and increase successful closures in the VR system, as evidenced by maintaining employment past 90 days. By increasing successful closures, the VR program benefits by substantiating their program, which may allow for continued funding through Congress. The benefits of this study extend not only employees with disabilities, but also to employees across the board. If we as practitioners are able to better understand what is related to

turnover intention, we can do attempt to do a better job of minimizing turnover, which affects production, costs in rehiring and training, not to mention employee morale.

Assumptions Underlying the Study

Because very little research exists that includes the concept of chronic illness and disability as it relates to turnover intention, it was assumed in this study that most of the variables impacting turnover intention in the general population would hold true for adults with MS as well. It was also assumed that self-reported demographic items such as age, age at diagnosis, education level, and disease items such as symptom severity are free from error.

Another assumption was that the variables of job satisfaction and job match are related. These variables were combined, and a continuous scale variable created. Due to the correlation of the variables, there was justification for doing so, and more detail is provided in Chapter 2.

Delimitations

Due to the lack of sufficient numbers of responses in any of the ethnic minority categories, it was decided that the race/ethnic background variable would be eliminated from the analysis. Additionally, only those adults who were employed at the time of the survey were included in the study, which was necessary because the intended outcome was to consider the intentions to leave employment.

Definitions and Operational Terms

The National Multiple Sclerosis Society (NMSS) Employment Preparation Survey dataset was used for this study. Because survey data were used, all definitions referenced self-reported responses by survey participants.

Turnover intention: One's plans to voluntarily leave employment, in response to an item asking certainty of employment one year from now.

Race/Ethnicity: Self-identification of white, and any ethnic minority background, including African American, Hispanic, Asian, or Pacific Islander, American Indian or Alaskan Native, and other.

Job/Person Compatibility: Combining the job satisfaction and job match variables. Further justification is given in Chapter 2. The original job satisfaction variable referenced the self-report of perceived levels of satisfaction in present job, while job match referenced how closely the respondent's current job matches their personal qualities and identity.

Employer Support: Perceived support received by adults with MS from employers in the work environment, compared with non-disabled workers.

External Support: Represents perceived external supports for employment, such as having transportation for work.

Perceived Stress: The degree to which individuals experience their lives as unpredictable, uncontrollable, and overloading (Hewitt, Flett, & Mosher, 1992).

Perceived Coping Ability: The degree to which individuals have confidence in their ability to effectively deal with problems (Hewitt, Flett, & Mosher, 1992).

Summary

Adults with MS represent a disadvantaged sector of the labor force. Despite the fact that many adults diagnosed with MS are well educated, have work histories, are working at the time of diagnosis, and have a desire to work, many leave employment at some point following the diagnosis. These premature exits from employment are of concern for adults with MS, employers, and rehabilitation practitioners.

By using existing rehabilitation research, and combining the theoretical frameworks of the Theory of Planned Behavior and the Minnesota Theory of Work Adjustment, selected variables were blocked together and analyzed to determine what has the largest impact on turnover intention in adults with MS. This provided valuable information in terms of potential areas of intervention for the purpose of increasing employment opportunities for people with MS and ultimately to decrease turnover. By increasing the understanding of what variables impact a person's decision to leave employment, the benefits of this study may extend also to persons without disabilities, employers, the human resources field, and rehabilitation practitioners.

Chapter 2

Review of the Relevant Literature

The literature review is divided into five sections, followed by three research hypotheses. A discussion of the proposed blocks model, followed by a comprehensive review of MS is provided, to include diagnosis, causes, symptoms, treatment, and other characteristics. Next, a review of the literature on MS and employment is provided, which will serve to illustrate the unique challenges faced by this group with regard to work, and also to show the further need for vocational services to address the premature exits from employment seen in adults with MS. A review of the management literature on turnover intention will then be discussed to give the reader understanding of this topic, including the fact that the research falls short on applying the principle to persons experiencing chronic illness and disability. Finally, the Minnesota Theory of Work Adjustment (MTWA; Dawis & Lofquist, 1984), in conjunction with the Theory of Planned Behavior (Ajzen, 1991) will serve as the theoretical framework for this study. Both will be discussed in terms of their relevance to the current study.

The Blocks Model

As discussed in Chapter 1, a blocks model was used to analyze relationships between selected variables and turnover intention. Variables were selected based on information available in the vast empirical research on employment in the population of adults with MS, and according to the MTWA. These variables were then grouped into three different blocks: person variables, environment variables, and person within environment variables. Chapter three

describes the specified variables chosen for each block. The rationale behind this approach was to analyze the relationship between turnover intention and each block of variables. Where significant relationships exist, interventions can be proposed in that block of variables.

Multiple Sclerosis: General Background Information

Multiple Sclerosis (MS) is a chronic neurological disease affecting the central nervous system, diagnosed in approximately 400,000 Americans, and potentially 2.5 million people worldwide. MS results in the gradual destruction of the myelin sheath, the fatty tissue surrounding nerve fibers that help carry electrical signals to and from the brain. This can leave scars or “sclerosis” on the myelin sheath, which will then result in disruption of electrical impulses to and from the brain. It is this disruption of electrical impulses that leads to a variety of sensory, motor and other symptoms of MS. Some common sensory symptoms can include changes in sensation such as numbness and tingling, vision problems, hearing loss, sexual dysfunction, and dizziness. Motor symptoms, or changes in muscle function, may include bladder and bowel dysfunction, difficulty walking, spasticity, tremors, and poor coordination. Other symptoms could involve changes in cognitive functioning, fatigue, depression, speech disorders, and chronic pain among others (National Multiple Sclerosis Society [NMSS], 2007). The type and number of symptoms vary per individual, usually based on where the damage has occurred in the central nervous system (Kalb, 2000, 2004).

MS affects twice as many women as men, most are between the ages of 20 and 50 at diagnosis, and MS most commonly occurs in people of northern European ancestry. (Compston & Coles, 2002; NMSS, 2007). The age of onset is of particular concern in this study, as these are peak employment years for most adults, not to mention other social involvements such as marriage and child rearing. A diagnosis of MS will eventually lead to the loss of employment for many (Beatty, Blanco, Wilbanks, Paul, & Hames; 1995).

Causes and courses of the disease. While the exact cause(s) of MS are unknown, researchers speculate that MS is an autoimmune disease, where the body reacts to normal antigens as though they were foreign, thus attacking its own tissue. In the case of MS, the body attacks the myelin, resulting in the demyelination described above. Researchers to date are uncertain as to why this autoimmune response occurs, though several reasons are cited in the literature.

One explanation given is a genetic theory, which asserts that several genetic factors influence a person's susceptibility of developing MS. For example, the risk to persons who have a parent or sibling with MS is higher than persons in the general population (Kalb, 2000). Specifically, the risk of developing MS for a person in the general population is approximately .15%, while the risk to a person whose parent or sibling is diagnosed with MS is between 1.0 and 4.0%. Further, MS is not commonly occurring in ethnic minority populations, but instead widely affects Caucasians (Kalb, 2000, 2004).

The fact that there is a much higher prevalence of MS in northern latitudes is one factor that supports the environmental theory as to the autoimmune

response of MS. Not only is this the case in the United States, but parallels are seen in other countries as well. An interesting finding of migration studies is that when a person lives in a high-risk area, but then relocates to a lower risk area; they acquire the lower risk of their new location. The same might be true when a person lives in a lower risk area, such as a tropical area, but then moves to a higher risk northern area, they will have a higher risk for developing MS. Known 'epidemics' of MS in certain areas seems to support the idea of an environmental agent as a potential cause, but to date there are no proven toxins that cause the disease (Ebers, 2008). Other research (Munger, Leving, Hollis, Howard, & Ascherio, 2006) suggests a link between vitamin D deficiency and increased risk of MS, which may also support environmental causes. The authors found that the risk of MS significantly decreased (in White populations only), with increasing levels of hydroxy-vitamin D. During the summer months, the body produces all the necessary vitamin D from the sun's rays. However, many people in areas north of Atlanta experience vitamin D deficiency during winter months, as a result of the sun's rays not being high enough to penetrate the atmosphere.

Another proposed cause for this hypothesized autoimmune response that leads to MS is viral infections. Since some viruses have strong similarities to myelin, it is thought that the body may continue to fight or attack the myelin as opposed to the virus (University of California San-Francisco Multiple Sclerosis Center, 2007).

The National Multiple Sclerosis Society (2007) discusses four clinical courses of MS. The most prevalent at initial diagnosis is the relapsing-remitting

type, which is characterized by clear periods of exacerbations and remissions. The acute attacks may last anywhere from a few days to several weeks, followed by periods of stability and absence of disease progression. The sudden onset of symptoms is a likely indication that a new lesion has developed.

A less common course at initial diagnosis is the primary-progressive type. Characterized by a continuous worsening of symptoms, the primary progressive type occurs without clear exacerbation or remission periods (NMSS, 2007). Within ten years following diagnosis, more than half those diagnosed with relapsing-remitting type will have developed a progressive disease, and after a period of 25 years, approximately 90 percent will change from relapsing-remitting to a progressive form of the disease (Kalb, 2000).

Secondary progressive MS manifests in the initial period of the relapsing-remitting type, followed by a more consistently progressive disease course. Kalb (2000) states that doctors are unable to distinguish between who will remain relapsing-remitting, and who might later become secondary progressive, which makes it very difficult to give a firm prognosis. About half of the people with a secondary-progressive type of MS developed it within 10 years of their initial diagnosis.

Progressive-relapsing MS is evidenced by clear progression of the disease from the onset, with clear acute relapses or exacerbations, which may or may not have some recovery following the acute episode (NMSS, 2002).

Whatever the clinical course of the disease, MS can be very unpredictable. For this reason, persons diagnosed with the disease often face an

uphill battle in functioning in most aspects of their lives, including employment. When levels of functioning vary, a person may not always be able to perform at the pre-diagnosis level, and in fact may not even be able to perform all essential functions of their job. Authors have speculated that these uncertainties regarding one's condition are least partly responsible for the premature exit from employment (Gordon, Shipley, & Wong, 1994; McNulty, 2007).

Diagnosis and treatment. To add to the complicated nature of this disease, there are currently no single specific diagnostic tests that alone make a definitive diagnosis of MS. Rather, it is often a clinical diagnosis, where medical history, neurological examination, and imaging techniques may be involved. In order to make a diagnosis of MS, the physician must find the following elements: plaques or lesions in at least two distinct areas of the central nervous system white matter, evidence that the plaques have occurred at different points in time, and that these plaques in the white matter have no other explanation (NMSS, 2007; Kalb, 2000).

During neurological examination, physicians may test reflexes, coordination, sensory changes, and visual impairment among others. These tests alone may not be sufficient to make a diagnosis of MS, so others might be used to help confirm a diagnosis of MS. Most commonly, magnetic resonance imaging (MRI) of the brain is conducted, which shows abnormality in approximately 90% of the people with definite MS. Computerized axial tomography (CAT) scans were used more frequently to confirm presence of lesions prior to development of

the MRI, which is a safer and more accurate technique for showing evidence of lesions (Kalb, 2000).

Other non-invasive procedures, which can be helpful in confirming the diagnosis of MS, are visual evoked potential (VEP) and somatosensory evoked potential (SSEP). These tests are used to look at the speed and efficiency of myelin conduction. The tests are often abnormal in the case of MS, and may show the existence of asymptomatic lesions that otherwise would go unnoticed (Kalb, 2000).

Once a person is diagnosed with MS, the issue of treatment arises. To date, there is no known cure for MS. Kalb (2000) discusses the difficulty in finding a cure for MS, reasoning that a cure cannot be found, since ultimately the underlying cause of MS is not known. Most individuals diagnosed with MS face a unique presentation of symptoms and experiences, making a universal treatment for MS impossible. The experiences of any individual may also vary over time, so treatments must continually evolve to meet the needs of each individual at any given time. In discussing treatments, the purpose of this study is not to give an exhaustive account of every available treatment for MS, but instead to outline some of the most commonly available treatments for MS.

The National Multiple Sclerosis Society (2007) discusses treatments for MS in broad categories. They are: modify the disease course, treat exacerbations, manage symptoms, and improve function and safety. Many pharmacological treatments or disease modifying therapies (DMT) are available for essentially the purpose of preventing relapses. Interferon beta 1a (Avonex®

and Rebif®) and Interferon beta 1b (Betaseron®) are medications designed to reduce the number of exacerbations and to extend the length of time between exacerbations. These are most appropriate for those with a relapsing-remitting course of the disease. Kalb (2000) reports that these interferon treatments have had a 'noticeable impact' on reducing the frequency and severity of attacks in relapsing-remitting MS. Mitoxantrone, (Navantrone®) was originally used to treat cancer, and is now approved for treating MS by reducing T and B cell activity. The drug has been used in secondary-progressive, advanced relapsing-remitting and progressive-relapsing courses of MS. Other common pharmacologic treatments for MS include glatiramer acetate (Copaxone®), used primarily for those with relapsing remitting MS to reduce inflammation at lesion sites, and atalizumab (Tysabri®), which is used most often when other drug treatments have failed. In recent research, Pohlau et al. (2007) found that intravenous immunoglobulin therapy worked to prolong the time to sustained progression in patients with primary progressive course MS. However, the same treatment did not show significant results in patients with secondary-progressive course MS (NMSS, 2007; Kalb, 2000).

To treat exacerbations, corticosteroids, such as methylprednisolone or dexamethasone are the treatment of choice, and are used to reduce duration and severity of exacerbations (NMSS, 2007). Other options are adrenocorticotrophic hormone, which have been shown to reduce exacerbations, but ultimately not to affect the degree of recovery or outcome (Kalb, 2000).

As stated earlier, the symptom picture is highly variable from person to person; so managing symptoms will also be highly variable from person to person. A person diagnosed with MS may presently experience spasticity as a primary symptom, in which case certain treatments may be considered such as medication, exercise, or dietary changes. Every symptom is associated with certain possible treatments, but it is important to remember that with MS, there are usually a variety of symptoms to deal with, making managing symptoms very difficult. To improve function, rehabilitation can be provided such as speech therapy, occupational therapy, vocational rehabilitation, and others.

It is crucial to point out that the varying treatments necessary for a person with MS serve to increase the challenges faced by persons with MS. Not only do they experience varying types and degrees of symptoms, but also the treatments can be problematic. This refers to the Illness Intrusiveness (Devins & Shnek, 2000) of the disease. The disease symptoms, loss of functioning, psychological affects, and treatment time and costs can all act to interfere with a person's participation in valued life activities. For example, the medications discussed earlier have some promising results, but there are disadvantages. For example, many require intravenous injection, and even going to a clinic for each administration as opposed to self-administration. The side effects of the drugs can be severe, for instance, atalizumab (Tysabri®) has an increased risk of certain viral infections that lead to death. When considering a working adult with MS, the amount of time spent going to medical appointments, the effects of

treatment, not to mention the unpredictable nature of the disease, the challenges with continuing in employment are clear.

Multiple Sclerosis and Employment

Employment is often considered a central, defining aspect of one's life. For many, the majority of adult years are spent working, not to mention the number of years of education one might attain in order to work. Studies conducted with this population show that the benefits of working go beyond financial. Larsen (1990) reported that work aids in the emotional well being of persons with MS. When employed versus unemployed, people with MS are generally thought to be healthier, more financially secure, more socially active, and overall report higher perceived quality of life (Johnson, Amtmann, Yorkston, Klasner, & Kuehn, 2004).

With the onset of MS occurring during early to mid-adulthood, prime working age, employment issues are vital in this population. Dealing with any disabling condition can pose significant challenges with regard to employment, but it is particularly so with a disease such as MS that is chronic, debilitating, unpredictable, episodic, and progressive in nature. The Illness Intrusiveness (Devins & Shnek, 2000) of chronic diseases such as MS can be seen not only in the symptoms, but also the impact on family, the time requirements of treatments, doctor's visits, psychological impacts, and other issues that produce a barrier to employment.

It can be said that persons with MS are massively unemployed. Estimates vary, but some authors assert that as many as 60 - 80% of persons with MS are

unemployed (Kornblith, LaRocca, & Baum; 1986, LaRocca; 1995, O'Day, 1998; Rumrill & Hennessey, 2004). However, it is not work experience that is the issue. Jackson and Quaal (1991) revealed that 91% of their sample had previous work histories, similar to other literature (LaRocca & Hall, 1990) suggesting that 90% of people with MS have work histories.

It has been documented in the literature that the majority of persons with MS are working at the time of diagnosis, but large numbers prematurely exit employment. In their study examining employment patterns in people with MS, Kornblith et al. (1986) found that 58.5% of the respondents were working at time of diagnosis, but only 37.5% remained employed after 5 years. Other findings suggest that approximately 60% of persons with MS are employed at time of diagnosis, but only 20% to 30% remain so 10 – 15 years post diagnosis (LaRocca & Hall, 1990; LaRocca, Kalb, & Greg; 1996). In a survey conducted regarding knowledge of the Americans with Disabilities Act (ADA), 50% of those respondents who were unemployed stated that they wanted to work, and 95% had a prior work history (Gordon, Feldman, Shipley, & Weiss, 1997). These numbers are alarming enough by themselves, but even more significant when combined with the fact that the majority of persons with MS want to work (Gordon et. al, 1997; Rumrill, Roessler, & Cook, 1998). These numbers make the issue of turnover intention critical. If practitioners are able to intervene early at the point of turnover intention, they can help employees with MS seek accommodations or other adjustments that might help them to avoid unemployment, ultimately minimizing turnover.

Education does not appear to be the issue when considering why large numbers of persons with MS leave work prematurely. Studies conducted on this group reveal that persons with MS are in fact well educated. Rumrill, Roessler & Koch (1999) surveyed persons with MS regarding employment concerns, and found that 65% of the respondents had at least some college. In their study attempting to predict factors contributing to employment status of persons with MS, Roessler, Fitzgerald, Rumrill & Koch (1999) report that 68% of the respondents had at least some college, compared with 40% in a later study (Roessler, Rumrill, & Fitzgerald, 2004). However, of this 40% of well- educated adults, only 43% were employed at the time of study, illustrating the point that even those with higher education levels are subject to the myriad of barriers that might result in premature exit from employment.

In general, the research shows that persons with MS are well-educated experienced workers who desire to remain working or to re-enter employment. Despite the many financial, psychological, social and other benefits of working mentioned earlier, people with MS are prematurely exiting employment. Because there tends to be a trend for females with MS to leave the workforce early, it has been stated that perhaps other competing roles such as mother and wife have an impact on women leaving the workforce. An additional factor with women seems to be whether or not there is higher income from a spouse working, which may allow the female to have greater latitude in leaving employment (Dyck & Jongbloed, 2000).

Substantial literature is available to discuss variables that impact employment for persons with MS. A primary variable that shows up time and again in the research is symptom severity. Roessler et.al., (2001) found that persons reporting multiple, severe symptoms were 20 times more likely to be unemployed than those reporting no symptoms. Other researchers (Dyck & Jongbloed, Kornblith, LaRocca, & Baum, 1986; O'Day, 1998; 2000; Phillips & Stuifbergen, 2006; Roessler et al. 2004a) have also found symptom severity to be a significant factor in studies predicting employment status or continued employment among persons with MS. In fact, Jongbloed (1996), in a mixed methods study, revealed that 75% of participants report that symptoms made it difficult to perform job tasks. More recently, in a study predicting turnover intention among adults with MS, it was found that symptom severity had the largest impact on turnover intention (Pack et al., 2007). Results showed that as symptom severity increased, certainty of employment decreased.

Likewise, the research consistently shows that presence of cognitive symptoms related to MS is related to employment status. One study found that patients who were judged to have cognitive deficits by neuropsychological testing were less likely to be employed than those judged to be cognitively intact (Rao, Leo, & Aubin-Faubert, 1989). Memory deficits and thought processing concerns were identified as career maintenance barriers in Roessler & Rumrill's (1995) research looking at job satisfaction and job mastery for adults with MS. In a study analyzing factors predicting employment status in persons with MS, Roessler et.al.(2001) found that those who reported presence of cognitive symptoms were

almost four times more likely to be unemployed than those not reporting cognitive symptoms. A consistent finding is true for a later study with a similar premise (Roessler et.al. (a) (2004), studies on women with MS and employment (Dyck & Jongbloed, 2000; Jongbloed, 1986) and other research (Beatty et al., 1995; Johnson et al., 2004; O'Day 1998).

A demographic variable often considered in employment outcome studies for adults with MS is age; however, there are some mixed findings. Two studies have shown that persons who continue to work are younger, and younger at diagnosis (Beatty et al., 1995; Dyck & Jongbloed, 2000; Jongbloed, 1996). Likewise, Edgley, Sullivan, & Dehoux (1991) found a negative relationship between age and employment. Roessler et al. (2001) hypothesized the same relationship, but ultimately the variable did not add to the predictive power of the model. In a study comparing males and females on employment outcomes, age had an indirect effect on employment for both males and females, but was mediated by other variables. Specifically for females, marital status, mobility, activities of daily living, and duration of illness mediated age. For males, age was mediated by education and mobility. Two possibilities are offered to explain this general trend seen in the research regarding age and employment. First, due to the progressive nature of MS, symptoms may become more persistent and severe as a person ages, and they become less able to perform demands of the job. Secondly, an older worker may have a higher socioeconomic status, and is more financially able to leave work (Rumrill, Tabor, Hennessey, & Minton, 2000).

Earlier, it was discussed that persons with MS tend to be well educated. It is also shown in the literature that education plays a role in employment status. Higher levels of education tend to relate to continued employment for adults diagnosed with MS (Dyck & Jongbloed, 2000; Jongbloed, 1996; Phillips & Stuifbergen, 2006; Roessler et al. 2001; Roessler et al. 2004,).

O'Day (1998) concluded that in addition to physical and cognitive limitations of MS, symptom severity, employer attitudes toward workers with MS and misconceptions from co-workers affect one's ability to remain employed. This idea was confirmed in a study involving persons with MS in selecting items for a survey. Participants noted being treated fairly by employers as an employment problem, meaning it was rated important by 70% or more participants and unsatisfactory by 38% or more (Rumrill, Roessler, & Koch, 1999). Jongbloed (1996) looked at factors of employment status for women, and found that one of the most important workplace conditions for continued employment was employer support.

It has also been argued that the psychological symptoms that occur during the course of MS, such as fear of worsening and unpredictable symptoms may cause one to leave prematurely (Gordon, Lewis, & Wong, 1994). An adult with MS cannot predict the timing or severity of exacerbations and symptoms, therefore daily work schedules, tasks, and routines are often disrupted. This fear of disease progression is common among adults with MS (McNulty, 2007).

Social Security Administration Programs. With any discussion of disability and employment comes the issue of disincentives to employment such

as receiving Social Security Disability Insurance (SSDI) and/or Supplemental Security Income (SSI). Persons receiving SSI will immediately see a reduction in benefit upon earning money from work after the first \$85, generally fifty cents on every dollar earned. A person receiving SSDI can earn up to a certain amount per month, called Substantial Gainful Activity (SGA) before seeing a reduction in their monthly benefit. At the time of this writing, SGA is average earnings of \$940 per month (Social Security Administration, 2008). When a person has had to endure a lengthy process of “proving” an inability to work, it often seems counter-intuitive to then work, and potentially threaten a steady stream of income, not to mention the medical benefits that might accompany the monthly check, which can be extremely valuable in the case of chronic illness and disability such as MS.

Further, people often have uncertainties regarding the incentives to working via the Social Security Administration (SSA), such as Trial Work Period, Impairment Related Work Expenses, Plan for Achieving Self-Support (PASS), and others that will allow one to earn monies from employment while still receiving their monthly check and/or medical benefits. Participants with MS have noted the issue of having adequate access to information regarding Social Security programs as an employment problem (Roessler, et al., 1999). O’Day (1998) found that many participants with MS had very little to no information regarding incentives to work under the different SSA programs. With a disease such as MS, where one of the hallmarks is the unpredictability, it is easy to

understand why one with the diagnosis would not want to threaten something that is predictable in their life.

Turnover Intention: Precursor to Employee Turnover

Employee turnover is widely researched in the management literature, and the point is frequently made that decreasing turnover benefits both employers and employees. High turnover rates have the negative effects of increasing hiring and training costs for organizations, not to mention the decline in profits and productivity (Huang, Lawler, & Lei, 2007) that often results due to an inexperienced workforce. It is estimated that the costs of replacing an employee can range from 70% to 200% of the person's salary (Kaye & Jordan-Evans, 2001). The continuation of employer paid benefits to those employees who leave jobs such as severance, insurance, or retirement if the person is eligible is another cost that employers must take into account. Administrative costs such as exit interviews, payroll changes, initiation of COBRA benefits, and recruitment can become large, especially if turnover is high. Ultimately, an employee represents an investment a company has made, and that is an investment lost if that employee leaves.

While individuals who leave for other jobs may experience benefits such as increased job satisfaction or higher earnings, a potential negative aspect of leaving is the psychological stress of adjusting to a new job (Sheehan, 1993). A lapse in benefits such as medical benefits may also occur, as many employers have probationary periods before group medical plans begin. This is especially important when discussing employees with chronic illness and disability.

Kozlowsky (1987) and others (Mowday, 1991; Mowday, Porter & Steers, 1982; Sheehan, 1991) documented that negative consequences of turnover are possible not only for the organizations that lose workers, and for the individuals who leave, but also on those employees who stay, such as dissatisfaction with their own jobs. If those workers who stay perceive co-worker turnover to be related to some negative aspect of the job, it can affect their own satisfaction levels at work, since they likely will encounter those same negative elements in their work. Morale can decline significantly at a business that is understaffed, often leaving remaining employees overworked. When this occurs, turnover can eventually lead to more turnover (Freely et al., 2008, Sheehan, 1993). In certain occupational fields such as nursing, turnover is seen as a major contributor to shortage (Coomber & Barribal, 2007).

Theory of Planned Behavior

To understand the concept of turnover, we must first understand what precipitates the behavior. Central to the Theory of Planned Behavior (TPB; Ajzen, 1991) is behavioral intention. The main premise of the theory is that behavioral intention is the primary antecedent to performing the actual behavior. Intention is considered the best predictor of a certain behavior. In other words, the stronger the intention to engage in a certain behavior, the more likely said behavior is to occur. Hence, the idea of turnover intention is critical to understanding turnover.

The Theory of Planned Behavior grew out of the Theory of Reasoned Action (Fishbein & Ajzen, 1975), which reasons that a person's behavioral

intention depends on the person's attitude about the behavior and the subjective norms, or social pressure to perform the behavior. The component added to the Theory of Planned Behavior is perceived behavioral control, defined as an individual's ease or difficulty in performing the particular behavior (Ajzen, 1988). Based on the theory, a person's intention to perform a certain behavior is based on attitude toward the behavior, subjective norm, and perceived behavioral control.

The TPB continues to be a relevant approach to looking at many behavioral situations. McCabe and Robinson (2008) used TPB as a framework for organizing themes related to graduate students' behavioral intention to be proactive toward engaging in advocacy behaviors for lesbian, gay, bisexual, and transgender youth. Armitage and Arden (2008) used outcome variables from TPB, e.g., behavioral intention and perceived control, to evaluate a smoking reduction intervention. In other studies, TPB has been used to evaluate men's psychological help seeking (Smith, Tran, & Thompson, 2008), women's adherence to mammography (O'Neill et al., 2008), disability behaviors among people with mobility limitations (Dixon & Johnston, 2008), and drinking among college students (Collins & Carey, 2007).

Turnover intention, or intent to leave one's job, has been shown to be the best and most efficient variable for predicting turnover (Bluedorn, 1982; Freund, 2005; Hui, 1988; Vanderberg, 1999), and therefore was the main focus of this study. For people with disabilities, a particularly disadvantaged sector of the labor force, maintaining employment can be an ongoing struggle. Issues related to the

disability, discrimination, and other factors can act to reduce not only a person's ability to obtain and maintain employment, but his or her desire to do so. If rehabilitation professionals are to intervene in the high unemployment rates of individuals with disabilities, they must begin at the point that employees with disabilities first consider terminating employment, i.e, turnover intention. Put simply, to reduce turnover and to improve employment rates for people with disabilities, rehabilitation practitioners must intervene at turnover intention.

Background Research on Turnover Intention

Turnover intention has been researched in many occupational fields such as nursing (Coomber & Barriball, 2007), welfare workers (Freund, 2005), missionaries, (Trimble, 2006), rehabilitation counselors (Layne, Hohenshil, & Singh, 2004), community mental health workers (Blankertz & Robinson, 1997) and information technology workers (Ahuja, Chudoba, Kacmar, McKnight & George, 2007). Variables that are shown in the research to impact turnover intention include job satisfaction, organizational commitment, career commitment, organizational support, stress, and job match. For example, in her study of turnover intention among welfare workers, Freund (2005) found that both career commitment and job satisfaction were significantly related to a worker's thoughts of leaving the organization. Job satisfaction is recognized in the literature as being closely related to turnover. Hellman (1997) reports that higher feelings of dissatisfaction with one's job result in higher instances of considering other job opportunities. Certainly in the literature regarding turnover in the nursing field, job satisfaction appears consistently, with most concluding that

higher job satisfaction was related to or predictive of turnover intention and ultimately turnover (Coomber & Barribal, 2007; Larrabee et. al, 2003, Rambur, Palumbo, McIntosh, & Mongeon, 2003; Lu, Lin, Wu, Hsieh, & Chang, 2002).

These studies produce clear support for including job satisfaction in this study.

Arguing for a merger of two perspectives, Kippenberg, Dick and Tavares (2007) discuss both the social exchange perspective and the social identity perspective in order to explain the relationship between the employee and the organization. They conducted a survey of bank accountants to assess supervisor support, organizational identification and turnover intention. Per their original hypothesis, supervisor support and organizational identification were negatively related to turnover intention.

A lack of research exists which incorporates the issue of chronic illness and disability into turnover intention. To that end, Pack et al. (2007) recently expanded this body of research by incorporating symptom characteristics into a model for prediction of turnover intention in adults with MS. The authors were able to account for approximately 26% of the variance in turnover intention or “certainty of employment” by using the following variables: symptom severity, job satisfaction, current employment support, and adaptability to stressors. In the Pack et al. (2007) study, adaptability to stressors represented a scaled variable including two components: perceived stress level and perceived coping ability. For the current study, the components were analyzed as two separate variables in the person within environment, and person block respectively. Coping ability represents more of a person variable, as indicated by the definition given in

Chapter 1, and perceived level of stress represents a person within environment variable as indicated by the definition given in Chapter 1, as well as the environmental components in some of the items.

Because several models exist in the management literature for predicting turnover and turnover intention, the purpose of this study was not to add another model to the research. By applying a theoretical model that will aid in blocking the variables into three separate blocks identified earlier, interventions were proposed within each block of variables that was statistically and practically significant. While it is true that some variables may not be feasible for interventions, e.g., age, others that impact turnover intention can and should be targeted for interventions to reduce turnover, and ultimately increase tenure.

Minnesota Theory of Work Adjustment

Much of the research discussed so far has used a disease and demographics model to discuss continued employment as it relates to MS. For example, symptom severity and presence of cognitive limitations are two disease variables consistently shown to impact employment. Gender, age and level of education are demographic variables examined in prior research that can have an impact on continued employment. Other studies focus on issues such as job satisfaction and job match to explain employment outcomes. Roessler, Rumrill, & Fitzgerald (2004), and others (Phillips & Stuijbergen, 2006) concluded the need to include work environment and other contextual variables in addition to disease and demographic variables in future research when looking at employment outcomes. Hence the decision was made to use a theoretical model that allowed

consideration of disease and demographic, or person factors, and contextual and environmental factors.

The Minnesota Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984) is helpful in understanding career choice and adjustment. TWA was the outcome of a federally funded research program, the Work Adjustment Project, to study how state federal vocational rehabilitation clients adjust to work. It belongs to the Person – Environment (P-E) theories, which describe the fit between, and the interaction of a person in an environment. Fit is described as the degree to which the characteristics of the person correspond with the characteristics of the work environment. Interaction means that both the person and the environment are active and reactive, that is to say that they both act and react to the other. In TWA, the environment is exclusively the work environment (Dawis, 2005). In its later, more generalized version, Person-Environment Correspondence (PEC; Lofquist & Dawis, 1991), the environment can refer to other, non-work environments, and the population can include persons other than rehabilitation clients.

In TWA, the person, or “P’s” satisfaction, satisfactoriness and tenure are basic indicators of work adjustment (Dawis, 2005). Tenure indicates the length of relationship between the employer and the employee (Griffen & Hasketh, 2005). According to Proposition I of TWA: “Work adjustment at any time is indicated by the concurrent levels of P Satisfaction and P Satisfactoriness” (Dawis, 2005, p. 20). According to Proposition VIII of TWA: P Tenure is predicted from P Satisfaction and P Satisfactoriness” (Dawis, 2005, p. 21). Satisfaction

occurs when the reinforcers provided by the work environment correspond to the requirements, or needs, of the person. Likewise, satisfactoriness occurs when the abilities of the person correspond to the requirements of the environment. The degree to which the needs of both the employee and the employer, or work environment, are met, is called correspondence. Ultimately, satisfaction and satisfactoriness lead to tenure. However, when there is a lack of fit, or mismatch, the person in the work environment is not satisfied or satisfactory, and tenure is jeopardized.

In the case of an employee with MS, continued progression of the disease may lead to inability to perform essential functions of the job. As demands of the job are left unfilled, the employee is no longer considered satisfactory, and may ultimately be terminated. At the same time, the employee with MS may face increased stress attempting to meet the demands of the job due to increasing functional limitations. Lack of reinforcers from the work environment to meet the employee's needs, such as employer support, may eventually lead to dissatisfaction with the job, and that person may ultimately leave the job.

It has been shown in the research discussed earlier that people with MS leave employment at high rates once diagnosed. Based on the Theory of Planned Behavior, the intention to perform the behavior (i.e., leaving employment) is the primary antecedent to actually performing the behavior. According to TWA, tenure is the principal indicator of work adjustment. From the research discussed earlier on turnover intention, a strong argument can be made

for considering turnover intention as the precursor to tenure. For purposes of this study, the relationship of turnover intention with selected variables will be considered as opposed to tenure. The reasoning behind this is simple. Without turnover intention, tenure can be assumed. If a satisfied and satisfactory employee has no intention to leave the job, there is no turnover, and tenure results.

Dawis (2005) reports strong support in the research for TWA, especially the first three propositions which describe the roles of satisfaction and satisfactoriness in work adjustment, as well as their prediction. There is also extensive literature, TWA and other, to support the relation of satisfaction to tenure, which is discussed in propositions VI, VII, and VII. Suggested applications of TWA are in the development of interventions, career choice, and dealing with work or career dissatisfaction (Dawis, 2005). When comparing TWA to Holland's theory of vocational choice, (Holland, 1959), Griffen & Hesketh (2005) conclude that TWA is more helpful for developing approaches to work adjustment and counseling. Their rationale for this is that TWA represents a more detailed and specific approach that does not rely on occupational stereotypes.

Various psychometric instruments are available to measure the variables of TWA. The Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, England, & Lofquist, 1967) was developed as a facet measure of work satisfaction. There are other measures of job satisfaction, both global and facet available. The Minnesota Importance Questionnaire (MIQ; Gay, Weiss, Hendel, Dawis, & Lofquist, 1971) uses the same 20 facets in the MSQ, but instead asks

the respondent how important the facet is. The rationale here relates to the hypothesis of the theory that satisfaction is a function of correspondence between needs and values. Other instruments developed out of the Work Adjustment Project include the Minnesota Satisfactoriness Scales (MSQ; Gibson, Weiss, Dawis & Lofquist, 1970), and the Minnesota Job Description Questionnaire (MJDQ; Borgen, Weiss, Tinsley, Dawis & Lofquist, 1968). The Generalized Aptitude Test Battery (GATB; U.S. Department of Labor, 1970) has been used to measure the skills and ability variables as well as correspondence. Adequate reliable and valid measures do not yet exist to measure the style propositions of TWA.

In the management literature, some researchers have called for a TWA approach to study turnover intention. Takase, Muade, & Manias (2005) discussed the benefit of using TWA over standard models to study turnover intention in nurses, since those models tend to leave out the interaction component between the nurse and the work environment. The authors report that many studies view the relationship as a one-way interaction, where the environment acts on the person, instead of a relationship between the employee and the work environment. Further, they discuss that TWA allows both researchers and organizations to craft interventions based on comparison of nurse' needs and perceptions of the work environment.

Lyons and O'Brien (2006) used TWA in to study job satisfaction and turnover intentions in a population of African American employees. Citing speculation that TWA was not sufficient to evaluate determinants of job

satisfaction and tenure for this population, the authors sought to test four TWA assumptions in an African American population. First, hierarchical multiple regression analysis was conducted to test the hypothesis that racial climate would moderate the fit-satisfaction and fit-turnover intention relationship. Perceptions of fit accounted for 43.20% of the variance in job satisfaction, $F(1,126) = 95.75, p < .01$. Experience with racial climate accounted for 1.20% of the variance in job satisfaction, over and above fit perceptions, incremental $F(2,125) = 2.71, p < .05$. Step 3 of the analysis revealed that the fit perceptions - racial climate interaction term accounted for .10% of the variance in job satisfaction over and above the amount accounted for by fit perceptions and racial climate.

Similar results were seen when looking at turnover intention. Fit perceptions accounted for 17.20% of the variance in intentions to quit, $F(1,126) = 26.16, p < .01$. Experiences with racial climate accounted for 2.20% of the variance over and above fit perceptions, incremental $F(2,125) = 3.32, p = .07$. In the last step, the fit perception / racial climate interaction term accounted for .80% of the variance not accounted for by fit perceptions and racial climate, incremental $F(3,124) = 1.27, p > .05$. Hence, racial climate as a moderator was not supported with either job satisfaction or turnover intention. In fact, when comparing their results with other similar studies, the authors found that perceptions of fit accounted for more variance in job satisfaction with African Americans than it did for European and European American employees.

Their hypothesis that job satisfaction would be correlated with turnover intentions was supported, with results showing a negative and significant relationship between the variables ($r = -.37, p < .01$). In a qualitative component to this study, the authors found that when asked to discuss factors that contributed to their satisfaction on the job, African Americans consistently noted TWA values as predictors of job satisfaction, specifically with regard to the comfort value. The results of this study support earlier predictions (Dawis, 1994) that cross cultural research would validate the use of TWA in people of color.

Job satisfaction is not only a main component of TWA, ultimately predicting tenure, but also a widely researched variable in the rehabilitation and management literature, as discussed earlier. In a study involving adults with MS, income, disease, and perceived employment situation variables were considered for relevance in predicting job satisfaction. Along with income adequacy, perceived job/person match was included in the final model. Adults with MS who reported higher levels of job/person mismatch were 22 times more likely to be unsatisfied than those whose jobs were perceived to be a perfect match. Those reporting a perfect job/person match were four times more likely to be satisfied than those who perceived their jobs to simply match well with their own personal attributes (Roessler, Rumrill, & Fitzgerald, 2004 (b)). Further, Pack et. al., (2007) reported that job satisfaction was one of four variables retained in a model for predicting turnover intention in adults with MS. There is clear evidence not only from theory, but also in both the rehabilitation and the management literature for including job satisfaction in the present study. Based on TWA, job match is

critical in terms of tenure. In his 3M model of career adaptability, Roessler (2002) identifies job match as one of a three-part retention model, calling it a “necessary element of career adaptability and a prerequisite to job tenure” (p. 208). Many studies highlighted earlier leave out this crucial component of job match, and many still did not consider the variable of job satisfaction.

Job satisfaction and job match have been shown in the literature to be important variables relating to tenure on the job, as well as turnover intention, it makes sense to use TWA as the theoretical framework, as these variables are hallmarks of the theory, ultimately predicting tenure. Using TWA is also beneficial here because of the ability to include person, environment, and interaction variables into the model. Therefore, existing literature in conjunction with TWA were used in selection of all variables for the current study. Combining the intention component of the Theory of Planned Behavior into the TWA theoretical framework is appropriate, as it will allow for the examination of relationships between selected person, environment, and person within environment variables and the critical concept of turnover intention, which in the case of this study is being used as a substitute for tenure. Again, the justification for this is that turnover intention is strongly supported in the research for predicting tenure; so determining what variables relate strongly with turnover intention is key for determining where to intervene in the rehabilitation process.

Job satisfaction and job match are both crucial in terms of predicting tenure according to TWA; hence the current study combined the constructs into one variable. The rationale for this is that according to TWA, job match is

necessary for one to have satisfaction in his or her job, and both are required for tenure. It is assumed that the two are very closely related, and therefore can serve as one variable for the current study.

Specific Research Hypotheses

The current study was exploratory in nature, with the intent to determine how groups with varying levels of turnover intention differ on three sets of variables: person variables, environment variables, and person within environment variables. The ultimate goal was to use this information to propose interventions that can be utilized by rehabilitation practitioners in order to increase employment opportunities for adults with MS. A secondary benefit of the research may be to propose policy changes that, in the rehabilitation field, may prove more beneficial to working with persons with chronic illnesses such as MS. Based on the theoretical framework and review of the rehabilitation and management literature, the following research hypotheses were tested:

Hypothesis 1: Groups with high levels of turnover intention are significantly different on a set of person variables (age, age at diagnosis, symptom severity, education level, and perceived coping ability) from groups with low and moderate levels of turnover intention.

Hypothesis 2: Groups with high levels of turnover intention are significantly different on a set of environment variables (employer support, service satisfaction, and external support) from groups with low and moderate levels of turnover intention.

Hypothesis 3: Groups with high levels of turnover intention are significantly different on a set of person within environment variables (job/person compatibility and stress level) from groups with low and moderate levels of turnover intention.

Summary

The review of the literature in the management and rehabilitation field supports the need to further explore turnover intention, and how this concept is applicable to persons with chronic illnesses such as MS. Because there is still considerable evidence that persons with MS leave employment at high rates once diagnoses, the need to better understand what variables contribute to one's decision to leave employment is crucial, both in terms of proposing interventions and policy.

TWA combined with the Theory of Planned Behavior serves as an appropriate theoretical framework for several reasons. TWA has been widely researched and the crucial concepts of job satisfaction, job match, and others have been validated in the literature. By using TWA, not only are we able to incorporate these crucial variables, but also include others from the literature that has been shown to impact turnover intention in the management literature, and employment for persons with MS. We can block these variables into the three blocks described earlier, and examine the relationship of these blocks of variables with both high and low levels of turnover intention. Finally, marrying TWA with Theory of Planned Behavior strengthens the study; because it strengthens the argument that turnover intention is the critical area to target if the goal is to allow persons with MS to continue in employment

Chapter 3

Methodology

Research Design

This study employed an ex post facto design, also referred to as causal comparative, which has two basic design options. First, it is useful in situations when two or more groups differ on a dependent variable and the researcher wishes to test for possible differences on one or more independent variables. A second design option is when two or more groups differ on an independent variable and the researcher wishes to test for possible differences on one or more dependent variables (Newman & Newman, 1994). The second case is the design of this study. The independent variable, turnover intention, was coded to reflect low levels of turnover intention, moderate and high levels of turnover intention. The writer tested for differences in the dependent variables based on low, moderate, and high levels of turnover intention.

When using ex post facto design, it is important to point out that it cannot be considered an experiment. Hatcher (2003) points out three general characteristics of experimental research: subjects randomly assigned to experimental conditions, manipulation of the independent variable, and similar treatment of all subjects in different experimental conditions, except for the independent variable. This study used an existing data set, and therefore manipulation of the independent variable, turnover intention, was not possible. Further, random assignment into treatment groups was impossible as the groups had already been formed and already differed on the independent variable,

turnover intention. The resulting limitation is low internal validity. Because of the nature of ex post facto design, this writer was unable to infer direct causation between the independent variable and the dependent variables. According to Newman and Newman (1994): "True experimental design, and only true experimental design, can show causation. Therefore, no causal statement can be made about ex post facto research" (p.13). While causation may not be inferred, the results are still valuable insights into phenomena such as turnover intention. Through the process of ex post facto study, differences identified in the study can be followed up with further analyses to determine if making changes on future employment related variables associated with high turnover intention result in a more positive employment retention for adults with multiple sclerosis.

Turnover intention has been widely researched in the organization and management field but has only recently been introduced in the rehabilitation literature. As stated in Chapter 2 of this manuscript, Pack et al. (2007) represent the first study found in the field of rehabilitation investigating turnover intention, despite the years of research and model testing of the variable in management literature and human resources.

The tests of relationships between turnover intention and other variables have benefit for both clinical practice and future research in the field. Clinically, further understanding of the relationships is beneficial in terms of developing interventions that will allow adults with MS to maintain employment. A better understanding of the variables that impact turnover intention will contribute to

future research incorporating the aspect of chronic illness and disability, and may help guide future experimental investigation.

Participants

A total of 1310 adults with multiple sclerosis from 10 National Multiple Sclerosis Society chapters across the United States responded to a survey regarding employment concerns. For this study, only those who reported being employed at the time of completing the survey were included, which results in a total of 548 participants. Including only those participants who are currently employed was necessary due to the focus on turnover intention, or intent to leave one's job. A participant must currently be employed to report intentions to leave his/her job.

Of the 548 total participants selected for this study, ninety-one percent were White, followed by 6% African-American, 2% Hispanic, 1% Native-American/Alaskan Native, and only 1 respondent was Asian/Pacific Islander. Eighty-one percent were female and 19% were male. The variability in the respondents' age was large with an average age of 46 years ($SD = 9.64$), and the majority of the employed respondents were married (67%). In keeping with prior research on adults with MS discussed in Chapter 2, the majority of the employed respondents (87%) reported being employed at the time of diagnosis.

Instrument

The National Multiple Sclerosis Society Employment Preparation Survey (Roessler, Rumrill, Hennessey, Vierstra, Pugsley, & Pittman; 2003) was developed to survey the employment concerns of adults with MS. The instrument

consists of 86 items, including both fixed and open response sets. Thirty-two items specifically address employment concerns of adults with MS and include items such as: “I receive the same pay as would a non-disabled person,” and “I have assistance in coping with stress on the job.” Respondents were asked to rate these items both in terms of whether the concern was important (Yes/No) and whether they felt adults with MS were satisfied (Yes/No) that the concern was being addressed. Other survey items included disease and demographic related variables, such as age, age at diagnosis, symptom severity, and benefit status.

Questions were selected for the instrument using a Participatory Action Research (PAR) approach. The PAR approach is a method for researching a problem that involves those directly affected. According to Wadsworth (1998), “most participatory action research sets out to explicitly study something in order to change and improve it” (p.7). Specifically, 16 adults with MS from two NMSS chapters, Arkansas and Missouri, reviewed a pool of 126 items to select those they considered most relevant to adults with MS. Consequently, adults with MS were active contributors to their own research, and the items selected should more accurately reflect the concerns of adults with MS.

Once the final survey items were chosen, 10 NMSS chapters considered to have strong geographic and ethnic representation were identified to participate in the study. Ultimately, 1310 surveys out of a target sample of 4,666 were completed and returned, resulting in a 28% response rate (Roessler et. al, 2003).

Using the theoretical framework of MTWA and empirical research, five variables were selected to represent person variables, three to represent environment variables, and two for person within environment variables. These variables are described in greater depth below.

Independent Variable

Turnover intention is the independent variable used in this study. Respondents were asked the following survey question: “How certain are you that you will be working one year from now?” This is an ordinal variable, ranging from 1 (not certain at all) to 5 (completely certain.) This variable was coded to reflect low and high levels of turnover intention. Responses of 1, 2, or 3 reflected high turnover intention, while responses of 4 and 5 reflected low turnover intention. By coding the variable in this way, the writer was able to explore how respondents with different levels of turnover intention vary on a set of person, environment, and person within environment variables.

Dependent Variables

Person Variables. The following comparison variables comprised the block of person variables: age, age at diagnosis, symptom severity, education level, and coping ability. Both age and age at diagnosis are continuous variables, representing the respondents' self-reported age and age at MS diagnosis. For the dependent variable, symptom severity, participants are asked to rate the severity of their current symptoms from 1 to 5, with 1 referring to “no current symptoms”, and 5 meaning “multiple, severe symptoms, significantly limiting daily functioning.” This variable is technically an ordinal variable, but because it has

five levels, is being treated as an approximation of a continuous variable for the analysis. When using a multivariate analysis of variance procedure (MANOVA), dependent variables should be continuous (Stevens, 2002). Therefore, readers are cautioned regarding the limited reliability of the MANOVA procedure with this variable. Despite this issue, it is felt that including symptom severity is necessary in the analysis, due to the overwhelming evidence in prior research that symptom severity is a contributing factor to loss of employment for adults with MS (Pack et. al., 2007).

For the dependent variable education level, participants were asked, “What was the last grade or level of school you completed?” There are nine possible responses as follows: no formal schooling, 1st through 7th grade, 8th grade, some high school, high school graduate, trade/technical/vocational (after high school), two-year college graduate, four-year college graduate, and post graduate. The responses for this variable were coded 1 through 9, with higher numbers representing higher levels of education.

The last variable in the block of person variables is perceived coping ability, viewed in this study as a personal skill characteristic of the individual. Perceived coping ability was a scale comprised of 4 items and therefore serves as a continuous variable appropriate for a MANOVA. The items in the Coping Ability Scale were as follows:

In the last month how often have you...

- Dealt successfully with irritating life’s hassles?

- Felt that you were effectively coping with important changes that were occurring in your life?
- Felt confident about your ability to handle your personal problems?
- Been able to control irritations in your life?

The above items were taken from the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The PSS is a scale comprised of 14 items, measuring both perceived distress and perceived coping (Hewitt, Flett, & Mosher, 1992). Instead of measuring specific stressful events, the scale attempts to measure “the degree to which individuals experience their lives as unpredictable, uncontrollable, and overloading” (Hewitt et. al, 1992, p. 248). Internal consistency of the coping scale has been reported at .72 (Hewitt et. al, 1992).

For purposes of this study, perceived stress and perceived coping were looked at individually. The rationale behind this is that coping represents more of a person variable, while perceived stress has both the person and environmental characteristics, and hence is more suited for the third block, person within environment.

Environment Variables. There are three dependent variables in this study that comprised the block of environmental variables: Employer support, external support, and service provision. Each of these variables is a scale created from several items in the survey. See Table 1 for a list of each of the items in the scales.

Table 1

Items in the Employer Support, External Support, and Service Provision Scales

Employer Support Scale: People with MS...

- Receive the same pay as would a non-disabled person.
 - Can get help in identifying and designing workplace accommodations.
 - Are considered for other jobs in the same company if their disabilities prevent them from going back to their own jobs.
 - Receive reasonable accommodations in the workplace.
 - Are given support from employers and supervisors after returning to work.
 - Have assistance with coping with stress on the job.
 - Can work with employers and supervisors who understand the effects of MS.
-

External Support Scale: Are you satisfied that people with MS...

- Have transportation needed to travel to and from work?
 - Have assistance with coping with stress on the job?
 - Can work with employers and supervisors who understand the effects of MS?
 - Have opportunities for home based employment?
 - Can get retraining if it is required to return to work?
 - Are encouraged to work part-time, if full time is too difficult?
-

Service Satisfaction Scale: Are you satisfied that people with MS...

- Can get help with the cost of assistive services?

Are treated with respect by service providers?

Have their needs considered in the development of Social Security programs?

Have access to adequate information about Social Security programs?

Have access to service providers?

The ranges of scores values for the employer support, external support, and the service satisfaction scales are zero to seven, zero to six, and zero to five respectively.

Person-within-environment variables. The dependent variables that made up the block of person within environment variables are as follows: job/person compatibility and perceived stress level. As discussed in chapter 2, the decision was made to combine job satisfaction and job match into one continuous scale, called job/person compatibility. These variables are closely related in the career literature. According to the MTWA, job satisfaction is a pre-requisite for job match. There is an assumption that if a person endorses a job match, then job satisfaction is also present. The alternative to this would be a person reporting a job match, but not feeling satisfied in their job, which does not follow logic or theory. The item for job satisfaction is number 19 on the survey, and reads as follows: "How satisfied are you with your present job", with three possible responses of satisfied, undecided, or not satisfied. The item for job match is number 18 on the survey, and reads as follows: "On a scale of 1-5, how closely does your current job match your personal qualities and identity," with 1 indicating the job does not match at all, and 5 representing a perfect match. The

variables were combined by taking an average of the responses on both variables.

Table 2 reflects the items included in the perceived stress component of the PSS. Item number seventy-seven ("felt that things were going your way") was omitted from the analysis because of its low negative correlation with the other items in the scale. Internal consistency for the stress scale was .81. As stated earlier, perceived stress is included in the person within environment block of variables due to the environmental nature of the items.

Table 2

Items in the Perceived Stress Level Scale

Stress: In the last month how often have you...

Been upset because something happened unexpectedly?

Felt that you were unable to control the important things in your life?

Felt nervous and distressed?

Found that you could not cope with all the things you had to do?

Been angered because of things that happened were outside of your control?

Felt difficulties were piling up so high that you could not overcome them?

Statistical Treatment

All data analyses were conducted using Statistical Analysis Software (SAS) 9.1. The statistical method applied to this study was multivariate analysis of variance. According to Stevens (2002), using more than one dependent

variable allows for a more complete and detailed description of the phenomenon being investigated. There are statistical benefits to using this method as well. First, using a multivariate approach over multiple univariate tests helps to reduce the overall type one error rate. The study also has more power. When the dependent variables are correlated, the MANOVA allows for the investigation of interactions among the dependent variables. Multivariate analysis is also useful for identifying cumulative effects over multiple dependent variables, which might not be apparent in univariate analyses. This study benefited from the use of multivariate analysis because of the desire to analyze relationships among turnover intention and each set of variables.

In the data analysis, outliers were investigated first, and model assumptions for the MANOVA procedure were then assessed. Three MANOVA procedures were completed to include one for each block of dependent variables. An alpha level of .15 was selected for the multivariate tests, allowing for reasonable protection against type I error, while simultaneously improving power (Stevens, 2002). Where significant multivariate tests were found, post hoc univariate analyses were conducted to identify which variables in the set were statistically significant. Alpha levels for post hoc univariate tests were set at .03, .05, and .05 for the person, environment, and person within environment blocks respectively. The univariate alpha levels were selected by dividing the multivariate alpha level by the number of dependent variables in each block. If this resulted in an alpha level greater than .05 due to a smaller number of

dependent variables, .05 was used. A discussion of the results is available in chapter four.

Limitations

With a causal comparative, or ex post facto study, several concerns exist, the main issues being lack of randomization into groups, lack of manipulation of the independent variable, and lack of control. Concerns about validity arise with the use of existing data. The writer must use caution to assure that the data are sufficient for the intended research purposes. With regard to the original survey, there was no information available to the writer suggesting how those who chose to participate might differ from those who did not. As with any survey data, caution must be used with generalizing the results to all adults with MS, especially considering the low, but typical, survey response rate.

As noted above, the symptom severity variable is ordinal rather than quasi-interval. This variable is measured on a scale ranging from 1 to 5, with higher numbers representing higher levels of symptom severity. This variable will be treated as a continuous variable for purposes of the analysis. Previous research in the population of adults with MS has consistently revealed symptom severity to be significant in terms of continuation of employment, and is therefore included in the analysis (Pack et. al., 2007). Additionally, highest education level is an ordinal variable with a larger number of categories. Caution with interpretation must be utilized in the assessment of model assumptions for the analysis including these variables.

Summary

In light of the goal of this study to investigate the relationship among various person, environment, and person within environment variables and turnover intention, existing survey data from the NMSS Employment Preparation Survey were utilized. The MANOVA procedure was selected as the appropriate analysis for the study, given the nature of the variables and the desire to analyze the relationships among the variables in the previously mentioned blocks. The results were interpreted in light of the limitations noted above.

Chapter 4

Results

The hypotheses for this study included: 1) Groups with high turnover intention vary significantly on a set of person variables from groups with both low and moderate levels of turnover intention, 2) groups with high turnover intention vary significantly on a set of environment variables from groups with both low and moderate levels of turnover intention, and 3) groups with high turnover intention vary significantly on a set of person-within-environment variables from groups with both low and moderate turnover intention. The information presented will benefit professionals in the field of rehabilitation working with adults with MS for employment purposes. Having information available that addresses the point at which this population chooses to leave employment should help determine appropriate interventions. A series of three multivariate analyses of variance were used to analyze the data. Where significant multivariate results were found, pairwise comparisons were conducted to determine significant differences among the pairs of groups. The Tukey procedure was then utilized for determining significance at the univariate level on each set of variables.

In this chapter, descriptive statistics are provided for each group. Results of the multivariate analyses and univariate follow-ups are then provided. The first multivariate analysis was utilized to determine differences between each of the three groups on the set of person variables while the second and third analyses were utilized to determine differences between each of the three groups on the set of environment, and person-within-environment variables respectively. Those in the

high turnover intention group represent those respondents who selected either a 1 or 2 on certainty of employment (question 20) “How certain are you that you will be working one year from now?” Those in the moderate turnover intention group represent those respondents who selected a 3 “50/50 chance” on the certainty of employment question. Those in the low turnover intention group represent those respondents selecting a 4 or 5 on the certainty of employment question, with a selection of 5 representing “completely certain.”

Descriptive Statistics

Out of the sample size of 336 respondents with complete data on the three sets of employment related variables, there were 43 (n=43) respondents in the high turnover intention group, representing those who did not feel certain they would be employed within the next year, there were 43 respondents. Seventy-seven percent were female, which is not unusual in this population. Ages ranged from twenty-four to seventy-two, and the majority of these individuals reported their race as White (91%), while 7% of the sample reported their race as African-American, and 2% reported unsure or other. Approximately 87% were employed at the time of diagnosis.

In the moderate turnover intention group, there were 75 respondents, representing those who felt moderately certain they would be working within one year from time of survey. Eighty percent were female, which is not unusual in this population. Ages ranged from twenty-six to sixty six, and the majority of these individuals reported their race as White (92%), while 5% reported African American,

1 respondent reported Hispanic, and 1 respondent reported unsure or other.

Approximately 86% were employed at the time of diagnosis.

In the low turnover intention group, representing those who were certain they would be working, there were a total of 218 respondents out of the total sample size of 336 with complete data. Eighty-one percent were female, which is not unusual in this population. Ages ranged from twenty-four to sixty-four, and the majority of these individuals reported their race as White (92%), while 4% of the sample reported a race of African American, 3% reported Hispanic, one respondent reported Asian or Pacific Islander, and 1 respondent reported unsure or other. Ninety-two percent were employed at the time of diagnosis of MS. Table 2 represents means and standard deviations for each group.

Table 3

Descriptive Statistics for Dependent Variables by Group

Variable	Group	M	SD
Age	Low TI	44.67	8.87
	Moderate TI	47.85	9.58
	High TI	48.16	10.06
Age at Diagnosis	Low TI	35.55	8.85
	Moderate TI	36.75	10.23
	High TI	37.63	10.68
Education Level	Low TI	4.34	1.49
	Moderate TI	3.89	1.63
	High TI	3.86	1.47

Severity	Low TI	2.21	0.80
	Moderate TI	2.87	1.13
	High TI	2.93	0.88
Coping	Low TI	8.94	2.90
	Moderate TI	10.65	2.83
	High TI	10.56	3.01
Employer Support	Low TI	3.26	2.07
	Moderate TI	2.32	2.06
	High TI	1.70	1.98
External Support	Low TI	2.01	1.75
	Moderate TI	1.32	1.38
	High TI	1.44	1.56
Service Provision	Low TI	2.61	1.68
	Moderate TI	1.65	1.50
	High TI	1.47	1.56
Stress	Low TI	15.06	2.07
	Moderate TI	18.01	2.06
	High TI	18.12	1.98
J/P Compatibility	Low TI	.83	1.75
	Moderate TI	.74	1.38
	High TI	.72	1.56

(Note: n= 218, 75, and 43 for low, moderate, and high TI group respectively)

For person variables, the model assumption of normality held for the variables age and age at diagnosis across all groups. Coping met the normality assumption on groups with moderate and high turnover intention, but did not hold for the low turnover intention group. The variable education level was significant on the Shapiro-Wilk test indicating a violation of normality (Shapiro & Wilk, 1965). The Shapiro-Wilk value is a measure of normality for parametric tests such as the MANOVA. The education variable was negatively skewed and platykurtic, therefore it was felt that the violation would not be significantly impact the associated F statistic and type I error rate since the distributional shapes were similar across groups. Severity was

also significant for the Shapiro-Wilk test indicating a violation of normality, and while the low and high TI groups were similar in shape, the moderate TI group had a more platykurtic shape, which could have a minor attenuating affect on power. In terms of the homogeneity of variance model assumption, all of the variables in the set of person variables held, with the exception of severity. The homogeneity of variance assumption asserts that population variances are equal (Stevens, 2002). With a violation to only one of the five person variables on the equal variances model assumption, the impact on type I error rate is expected to be marginal.

Multivariate model assumption of normality was assessed using Mardia's skewness and kurtosis (Mardia, 1970). The multivariate normality assumption was violated for skewness and kurtosis ($p \leq 0$) and ($p = .01$) respectively. Stevens (2002) indicates that the impact of normality violations on F statistics can be relatively minor, however these violations can lead to violations of homogeneity of variances and co-variances that can have a substantial impact on type I error rates. However, homogeneity of covariance on the set of person variables (i.e., the assertion that group co-variances are equal), was assessed for the three turnover intentions group and was found to be tenable.

In the set of environment variables, the only variable that was not significant for the Shapiro-Wilk test of normality was external support on the high TI group, indicating a violation in univariate normality on the employer support on all groups, service provision on all groups, and external support variables on low and moderate TI groups. Both external support and employer support were shaped similarly across groups, e.g., in all groups the variable was both negatively skewed

and platykurtic. The service provision variable was negatively skewed and platykurtic on both the moderate and high TI groups, but slightly positively skewed on the low TI group. However, the value is so close to zero that it was not felt this would be problematic for finding differences among groups. The homogeneity of variance model assumption held for both employer support and service provision, and was marginal on the external support.

For the multivariate model assumption of normality, skewness and kurtosis were violated for this group; however, homogeneity of covariance was tenable. Homogeneity of variance and covariance are more important issues in terms of impacting the MANOVA analyses; therefore it was decided to continue with the MANOVA analysis for the environment group of variables.

In the set of person-within-environment variables, the stress variables was assessed for normality and was found to be tenable for this model assumption. The job-person compatibility variable held for normality on the high TI group, but not for the low and moderate TI groups. The homogeneity of variance model assumption held for the stress variable, but not the job person compatibility variables. The multivariate model assumption for normality was tenable for this group, as well as the homogeneity of co-variances.

Transformations were attempted, but failed to correct the normality violations that existed on some variables. Due to the unequal sample sizes in the groups and violations in both univariate and multivariate model assumptions, a random sample of seventy-five was taken from the largest group, low TI, and the data were analyzed using this subset. This attempt corrected the homogeneity of variance violation in

severity as well as homogeneity of covariance issues on the set of person variables. It did not correct the univariate or multivariate normality violations in this set, however, multivariate kurtosis for this set improved. The results of the multivariate analysis remained the same. In light of the fact that some model violations were corrected, but the results of the analysis did not change, the decision was made to use the original data.

Comparing TI groups on Person Variables

The MANOVA on the set of person variables indicated a significant multivariate effect on turnover intention $F(10,658) = 7.21, p < .0001$. Approximately 19% of the variability on the person variables is accounted for by the certainty of employment variables. Pairwise comparisons conducted using Bonferroni-corrected α level of .05 indicated significant results between the high and low TI groups, and the moderate and low TI groups. The Bonferroni method is used to reduce family-wise error rates when conducting multiple analyses. Tukey post-hoc tests indicated significant differences between the moderate and low TI groups on variables age, severity, and coping. Significant differences were also found between the high and low TI groups on severity and coping. Those in the moderate TI groups were higher in age than those in the low TI group. It is not surprising that those in the moderate TI group reported higher symptom severity than those in the low TI group, while those in the low TI group also reported higher perceived coping ability than those in the moderate TI group. Similarly, those in the high TI group reported higher symptom severity than those in the low TI group, while those in the low TI group also

reported higher perceived coping ability than those in the high TI group (see Table 2 for mean and standard deviation values).

Multivariate effect size was calculated for this set, with a value of $D^2 = .02$, indicating a small effect size for this group. Univariate effect sizes for the significant variables in the moderate and low groups are as follows: $d = .35$ for age, $d = .73$ for severity, and $d = .59$ for coping. Univariate effect sizes for the significant variables in the high and low TI groups are as follows: $d = .87$ for severity and $d = .55$ for coping.

Table 4

Pairwise Comparisons on Person Variables

Groups	Λ	F	df_1	df_2
High x Moderate	.9969	.07	5	112
High x Low	.8547	8.67*	5	255
Moderate x Low	.8423	10.75*	5	287

* $p < .0001$

Comparing TI groups on Environment Variables

The MANOVA on the set of environment variables indicated a significant multivariate effect on turnover intention $F(6,662) = 6.24$, $p < .0001$. Pairwise comparisons conducted between the three groups based on Bonferroni-corrected α level of .05 indicated significant differences among the high and low groups as well as the moderate and low TI groups. Tukey post-hoc tests indicated satisfaction levels on external support to be significantly higher for the low TI group compared to

the moderate TI group. The univariate effect size calculated for this variable was $d = .42$. Employer support scores were significantly different for the high TI group compared with the low TI groups, with a univariate effect size of $d = .67$. Specifically, those reporting higher levels of satisfaction on the employer support variable reported lower turnover intention levels. Similarly, those in the low TI group also reported higher levels of satisfaction on the employer support variable than those in the moderate TI group, with a univariate effect size of $d = .40$. Satisfaction levels on the service provision variable were higher for the low TI group compared with the high TI group, as well as for the high TI group compared with the moderate TI group. Univariate effect sizes were calculated at $d = .69$ and $d = .59$. Satisfaction with external support, however, was found to be higher for those in the moderate TI group compared to the low TI group.

Table 5

Pairwise Comparisons on Environment Variables

Groups	Λ	F	df_1	df_2
High x Moderate	.95	1.93	3	114
High x Low	.92	7.93*	3	257
Moderate x Low	.94	6.42**	3	289

* $p < .0001$; ** $p < .0003$

Comparing TI groups on Person-within-environment Variables

The MANOVA results for the person x environment set of variables indicated a significant difference among the groups $F(4,664) = 10.20, p < .0001$. Pairwise comparisons using Bonferonni-corrected α level of .05 indicated significant differences between the high and low TI groups, and the moderate and low TI groups, with no significant differences between the high and moderate groups. Tukey post-hoc tests indicated significant differences on stress for the high TI and low TI groups, as well as the moderate and low TI groups. Those in the high turnover intention group reported higher stress levels than those in the low turnover intention group, with a univariate effect size of $d = .64$. Similarly, those in the moderate TI group reported higher levels of stress than those in the low turnover intention group, with a univariate effect size of $d = .66$. For the job person compatibility variables, significant differences were found using Tukey post-hoc tests between the high and low TI groups, as well as the high and moderate TI groups. Specifically, those in the low TI group reported higher levels of job person compatibility than those in the high and moderate TI groups.

Table 6

Pairwise Comparisons on Person x Environment Variables

Groups	Λ	F	df_1	df_2
High x Moderate	.99	.13	2	115
High x Low	.92	10.93*	2	258

Moderate x Low	.90	15.52*	2	290
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* $p < .0001$

Each MANOVA analysis conducted yielded significant multivariate differences, with some univariate comparisons showing significant differences among groups.

Summary

Each set of variables was significant on the multivariate analysis. Differences were also found on pairwise follow-up comparisons between high and low TI groups, as well as moderate and low TI groups. This did not confirm the hypothesis that groups with high TI would vary significantly from groups with moderate TI on each set of variables, but did confirm the hypothesis that high TI groups would vary significantly from low TI groups on each set. Respondents in the low TI group on the set of environment variables reported higher satisfaction in both employment support and service provision, yet higher levels of external support were associated with the moderate TI group versus the low TI group.

Chapter 5

Discussion

There were two important findings in this study. First, groups with high levels of turnover intention vary significantly from groups with low turnover intention on employer support and service provision. The second finding of importance is that groups with moderate levels of turnover intention vary significantly from groups with low levels of turnover intention on each of the three variables in the environmental set. Interestingly, groups at the moderate level of turnover intention are not significantly different for the high groups, but are in fact very close to the group with high level of turnover intention. Considering the premise that turnover intention is the precursor to intention, those in the high TI group may not be the targets for intervention, as they are very likely to voluntarily leave employment. Similarly, those in the low TI group who are not at risk of leaving employment. The results of the study underscore the group with moderate turnover intention as a prime target for intervention. Using this scale, it appears that persons with a 50% chance of turnover intention or greater are those that should be targeted for interventions. If turnover intention is high, it may be too late. Additionally, when considering the exorbitant costs of turnover discussed in a previous Chapter, a case can be made for the economic benefits to employers and society by helping this group to maintain employment. If estimates show that replacing a worker costs approximately 70-200% of the salary (Kaye & Jordan-Evans, 2001); consider the cost savings benefit of assisting workers to maintain employment.

Turnover intention, a widely researched topic in the organization and management literature, has only recently been explored in the field of rehabilitation (Pack et. al, 2007). The fact that significant differences were found among the high and low TI groups on the environmental variables is an important finding. Environmental variables are amenable to intervention. The organization and management literature is replete with information showing that turnover intention is the precursor to turnover. For people with chronic illnesses such as MS, this represents the critical point to intervene prior to exit from employment. Employee turnover is a challenging problem for businesses and organization, resulting in increased training costs and decline in profits (Huang, Lawler, & Lei, 2007). Psychological effects can also be seen in employees who stay. Freely et. al (2008) discussed the decline in morale to other workers; while Sheehan (1993) asserted that turnover in a business can lead to more turnover, when employees who stay begin to perceive negative aspects of the job. To be able to intervene at the point of turnover intention has benefits for employers, business, and individuals with MS.

Devins & Shnek (2000) discussed the concept of Illness Intrusiveness in relation to chronic illnesses, illuminating how various aspects of dealing with chronic illnesses serve to interrupt participation in valued life roles, such as employment. The results of the current study reflect this concept when considering the environmental variables that impact an individual's intention to leave employment. Employer support, external support, and service provision are factors that impact an employee's decision to leave employment. When dealing with a chronic illness such as MS, disease related factors alone are difficult to manage. Adding in

environmental factors such as lacking employer support, external support, and service provision can increase the level of difficulty one faces in dealing with MS. Combine this information with the research suggesting people do better when working in terms of perceived quality of life (Johnson et.al, 2004) as well as emotional well being (Larsen, 1990), and the impetus is clear to improve the work outlook for this population.

It is not surprising that a significant relationship was found between employer support and turnover intention levels. O'Day (1998) summarized that employer attitudes affect one's ability to remain employed, while others (Rumrill, Roessler, & Koch, 1999) showed employer support, i.e. being treated fairly by employers, to be an employment problem among this population. Earlier research revealed employer support to be one of the most important conditions for continued employment among women with MS (Jongbloed, 1996), while Pack et. al. (2007) represented the first study to show employer support to have prediction ability on turnover intention levels in adults with MS. Knippenberg, Dick, and Tavares (2007) explored the interaction between organizational support and organizational identification in predicting turnover intention. They cited attachment to the organization on the part of the individual as influencing on the job related attitudes and behavior. Results of the study showed supervisor support to be negatively related to turnover intention. The information is useful for service providers working with this population to provide services or interventions that will aid the employee with MS in developing employer supports.

The TWA utilized as a framework for the current study also suggests a need for employer support. Specifically, according to the TWA Predictive Model, the person has needs, or reinforcer requirements, that must be met by the environment. Some reinforcers might be pay, prestige, and working conditions, which parallels the idea of employer support from the current study.

The finding that satisfaction levels with service provision were found to be significantly lower in groups with high TI compared with groups with low TI is congruent with previous research. Adults with MS reported certain service provision issues as an “employment concern,” meaning they were rated by 70% or more of the sample as important and by 38% or more of the sample as unsatisfactory (Roessler, Rumrill, & Koch, 1999). Having access to service providers who understand the effects of MS, having adequate information about Social Security Administration programs, being encouraged to discuss job accommodations with employers, getting help with assistive devices, and having retraining opportunities if required to return to work were reported. Roessler et.al (2003) reported that two strengths reported by survey respondents were “People with MS have access to service providers” and “are treated with respect by service providers.” A focus group discussion from the same study highlighted the need for accessible and respectful service providers in rehabilitation programs.

For the current study, the set of person variables was statistically significant but not practically significant in terms of effect size, therefore are not discussed in detail in this study in terms of proposing interventions. Current medical interventions do not provide long-term amelioration for symptom severity. However, previous

literature has shown symptom severity to be a significant factor in continuation of employment in this population. Recently, Pack et. al (2007) showed that symptom severity had the largest impact in the predictive model on turnover intention. Likewise, Roessler et. al (2004a) showed symptom severity to have the largest impact on predicting employment; while Jongbloed (1996) reported that 75% of women surveyed reported that multiple symptoms made it difficult to perform tasks. While specific interventions to address symptom severity may not be feasible, it would benefit service providers to be educated in the most current treatments available to people with MS, as well as valuable resources available to the population. Education can serve as a valuable intervention in itself to persons with disabilities.

Two variables in the set of person variables (e.g., age, and age at diagnosis) would not be amenable to intervention. However, service providers could target coping and education level for intervention. For example, education level is a variable amenable to intervention should it be feasible for the individual. Coping ability could also be targeted through techniques such as cognitive behavioral therapy, problem solving therapy, and individual counseling.

It is not surprising that the high and low TI groups as well as the moderate and low TI groups were significantly different on both stress and job-person compatibility. The literature review chapter illustrated prior research on the impact of stress on continued employment. The two variables which comprised the job person compatibility, i.e. job match and job satisfaction, are important factors for continuation of employment and turnover intention in this population. They are

especially important in terms of the theoretical framework, MTWA. Earlier studies both in rehabilitation and organization and management have laid groundwork for including job satisfaction in research. Coomber and Barribal (2007) found job satisfaction to be consistently related to turnover in the nursing field, while Freund (2005) also found job satisfaction to be closely related to turnover. Job satisfaction was one variable in a predication model that predicted twenty-six percent of the variance in turnover intention in adults with MS (Pack et. al, 2007).

In the current study, those in the low TI groups reported lower levels of stress, and higher levels of job-person compatibility than those in the high and moderate TI groups. This outlines the importance of contextual variables such as these when developing interventions targeted toward this population.

Interventions

Extended Employment Status. The first proposed intervention represents a policy change in the state federal vocational rehabilitation system. Currently, a client will be closed in status 26, i.e. successfully employed, after 90 days of continuous employment. Three months on a new job is usually the time when a person is becoming more accustomed to their environment, duties, and co-workers. When considering a chronic illness or disability, the time to accomplish this adjustment can really take longer. The literature is clear that the course of MS can be very unpredictable with periods of remissions and exacerbations in symptoms that make it difficult to maintain employment. Further, new symptoms may arise as the course progresses, so ninety days is an inadequate amount of time to consider an employee with MS to be successful in his or her job. It is once the symptoms are

presenting that the services from state vocational rehabilitation are critical. Consider a person with MS who secures employment while in a period of remission. He or she may in fact be performing very well at work, with no concerns expressed by the employer. The case is closed successfully after ninety days of employment, but then three months later an exacerbation of symptoms presents. That person does not have access to services unless he or she applies for services again, or is able to receive services in a post-employment status. The concept of Illness Intrusiveness (Devins & Shnek 2000) is illustrated here: not only does the individual have to deal with a recurrence of symptoms and the medical and psychological aspects of the disease, but also must attempt to manage his or her employment and suffer the bureaucracy of opening another case with state vocational rehabilitation. The current study highlights the importance of service provision. Since we know that people who are more satisfied with service provision have lower turnover intention, this is a crucial step in reducing turnover intention.

Suggested here is the addition of an extended employment status, a phased out approach to case closure in the state federal VR system, similar to an outcome based approach utilized by some state systems for payment of vendors. A service provision infrastructure could look like this: a VR office contracts with a local vendor for job placement services, but instead of paying one lump sum of money to the provider, they are paid when certain milestones are reached. For example, the provider could be paid a certain amount when they accept the client for services, followed by another amount when a job is secured, and then a final payment after ninety days of continuous employment.

Understandably, Vocational Rehabilitation Counselors desire to close the case as soon as possible after the ninety-day mark, because credit is given to the counselor based on the number of successful closures in the federal fiscal year. Often, the number of successful closures is tied to performance appraisals. To that end, adopting an approach where the case is not closed after ninety days will be a difficult sell. One way to solve this is for the counselor to receive credit at each phase that is met once the individual is employed. This writer is proposing an approach where the counselor is credited when a client is placed into status 22, or employed status, followed by credit when the client reaches ninety days of employment. The client would then be placed into extended employment status if deemed appropriate, and the counselor would receive credit each 90 days thereafter while in extended employment status, and when the case is closed. The case would remain open during extended employment, and the Individual Plan for Employment (IPE) would be updated regularly to reflect the most current needs of the individual. As natural supports are developed in the workplace, as well as other community supports, the intervention on the part of the counselor would decrease and the case would be closed. Following that, it is recommended that status 32, post-employment services be utilized more liberally if necessary.

Due to the progressive nature of MS, it is not likely that the course of the disease will improve over this time, but rather that services continue to be available to the individual, part of which includes helping them to establish natural supports and work, at home, and in the community. Essentially, the job of the counselor is to

increase the external and employer support for the individual prior to the case being closed.

Such an approach would have several administrative considerations, such as regular documented contact, updated IPE, concurrence with supervisor that extended eligibility is necessary, and even updated procedures for performance appraisals. Roessler & Rumrill (1999) called for re-evaluation of successful case closure criteria, suggesting a qualitative approach to defining successful case closure as opposed to a minimum number of days on the job. Using qualitative approaches versus a ninety day approach would not only be more individualized to the needs of each client, but also will put more of a focus on career retention, which is key for this population. In fact, Rumrill et. al (2000), indicated that job retention services for people with MS was the most highly sought and necessary service.

Supported Employment. Several models of supported employment exist to assist persons with the most severe disabilities to secure and maintain employment. The 1986 Amendment to the Rehabilitation Act of 1973 defines supported employment as: “Competitive work in integrated settings (a) for individuals with severe handicaps for whom competitive employment has not traditionally occurred, or (b) for individuals for whom competitive employment has been interrupted or intermittent as a result of a severe disability and who, because of their handicap, need ongoing support services to perform such work.” Clearly, adults with MS fit this definition in terms of having work interrupted due to a severe disability.

Models of supported employment include the enclave model, entrepreneurial model, mobile work crews, small business models, and individual placement models

(Department of Labor, 2010). The enclave model involves a small group of people with disabilities working at a single site in the community among non-disabled workers. A trained supervisor provides initial training, supervision, and support; and may be an employee of the company or placement agency worker. The entrepreneurial model assists individuals who want to set up their own small business. Support is provided by the rehabilitation agency. Small business models operate as a small business within the community, and include a small number of employees with disabilities. Revenues are generated by work performed. Essentially, the benefit to the business is the same: supports provided free of charge, education provided to employers regarding certain disabilities and reasonable accommodations, screened applicants, and abilities matched to job requirements.

The individual placement model is the focus of this intervention, specifically the individual placement and supports (IPS) model (Becker & Drake, 2003). This model is specifically designed to work with persons with severe and persistent mental illnesses such as schizophrenia, schizoaffective, and bipolar disorder. This evidence-based practice is often referred to as the best method available to assist persons with severe mental illness to secure and maintain employment. Included in the model are principles such eligibility based on consumer choice, rapid job search, integration with mental health treatment, focus on consumer preferences, continuous follow-along supports once employed, and competitive employment is the goal. Much like Larson (1990) who suggested people with MS do better when employed, the IPS model also asserts that people with mental illnesses do better in terms of

psychosocial adjustment and reduction in symptoms when they are productively employed. Perhaps the main principle that can be taken from the IPS model and adapted to adults with MS is the time-unlimited follow-along supports. It is known from the literature that people with MS largely have work histories and are working at the time of diagnosis, but leave employment within five years of diagnosis. The results of this study show that people with lower turnover intention are more satisfied with external supports, employer supports, and service provision than those reporting high turnover intention. Using the IPS model with this population is a recommended intervention to increase satisfaction in these domains, therefore reducing turnover intention in this population.

The idea of providing supported employment services according to the IPS model would fit well with the extended employment proposal discussed earlier. The supports provided with the IPS model are time unlimited. Largely due to the unpredictable nature of mental illnesses, one may be functioning well for quite some time, then experience a setback. It is during these setbacks that supports are warranted. Similarly, MS is unpredictable and results in periods of remissions and relapses, so it makes sense to propose that supports be available to this population as well. While the IPS model was designed for persons with severe mental illness, adapting it to the population of adults with MS is a logical idea given the ongoing need for supports and the unpredictable progressive nature of the disease. If rehabilitation counselors were given the ability to use an extended employment status, this supported employment intervention could be a valuable tool for assisting individuals with MS in maintaining employment.

The suggestion for providing supported employment services has further value considering the results of this study, because a large focus is on developing relationships with employers, and assisting the client to do the same. Providers are encouraged not only to begin job search early in the process, but also to be a provider of services both to the client and the employer. Often billed as a “free client assistance program” to employers, an employment specialist is available to the employer for education regarding disability issues, addressing any concerns that arise, developing ideas for reasonable accommodations, and setting up natural supports in the workplace. Consider the value to an employer who has a specialist on call to address concerns with, and help to problem solve issues before they results in the loss of a job. Recall that turnover costs to employers are very high, and retaining valuable employees is a valuable benefit. Simultaneously, the employment specialist or rehabilitation counselor works on an ongoing basis with the individual with MS, addressing problems and concerns that may arise and providing the individual with the skills to do the same. This intense level of support to both the individual with MS and the employer is suggested as a means for increasing the level of satisfaction in the area of employer support, thus reducing the levels of turnover intention in this population. The organization and management literature reflects that the point of turnover intention is critical for intervention, and this study reflects that groups with higher satisfaction in the area of employer support have lower levels of turnover intention. This suggestion represents one tool a rehabilitation counselor would have at his or her disposal for working with this population to not only increase the length of stay on a job, but hopefully to reduce

levels of turnover intention in this population.

Finally, the benefit of using supported employment for this population extends to the variable external supports as well. Items in the external support scale involved situations such as a person with MS having transportation to and from work, having work from home opportunities, and employers that understand the effects of MS. Being individualized in service provision and considering the needs of each person served is a necessary skill set for employment specialists. Doing so will allow the individual with MS to have all needs considered. In the above examples, the employment specialist would assist with arranging for adequate transportation, educating the employer regarding the effects of MS, or assisting with the location of work from home opportunities.

Disclosure assistance. As with any disabling condition, the question of disclosure arises. Kalb (2000) states that the best reason for disclosure is the future need for reasonable accommodations. According to the Americans with Disabilities Act (ADA), an employee must disclose the need for reasonable accommodation before an employer is expected to provide it. Due to the progressive nature of MS, the need for accommodations on-the-job is almost a certainty. The National Multiple Sclerosis Society (2010) recommends a “win-win” approach to requesting accommodations, which represents a non-adversarial approach to negotiating accommodations. Reasonable accommodations serve to enhance productivity, which benefits both the employer and the employee. Leaving legal protections out of the discussion is recommended, at least initially, to ensure a more productive and team-based outcome. Rehabilitation counselors and other employment specialist

working with this population should be versed in this approach. Being able to work collaboratively with employers is essential for success in the supported employment model mentioned above. In fact, if the provider can establish his or herself as the expert in reasonable accommodations with the employer, a foundation of trust can be established. A recent UK study (Sweetland, Riagi, Cano, & Playford, 2007) revealed that people with disabilities want advice on how to manage performance in the workplace when limitations interact with the demands of the job. Specifically, support with both disclosure and discrimination issues are sought.

Self-Employment. An employment option to consider for individuals with MS is home-based employment opportunities. Due to increasing technology, work from home is available from many legitimate venues, and may be a great option for a person who has unpredictability from day to day in levels of functioning. Telecommuting opportunities can be found in many industries, such as the medical field. Further, a rehabilitation counselor or employment specialist in some cases may be able to negotiate a telecommuting opportunity from an individual's current place of employment. Online sites such as Etsy (2010) provide an opportunity for those with an artistic ability to make and sell various handmade pieces, while eLance (2010) allows one to bid on various categories of jobs to be performed at home. Evidenced-based supported employment programs such as IPS (Becker & Drake, 1994) focus on consumer preference, with self-employment being a legitimate option. Further, Rumrill (2000) made a case for self-employed people with MS as a viable employment option. Rehabilitation counselors should have more training opportunities to become knowledgeable about this topic, and therefore better able to

assist their client's with developing viable home based employment opportunities. The home based job opportunity could still be amenable to extended supports as determined on an individual basis.

Chapter 6

Implications

Research Implications

The current study has added to the body of literature by taking the concept of turnover intention and applying it to the field of rehabilitation, as has been done in only one other study to date (Pack et. al, 2007). Important information has been added to the field of rehabilitation, namely that satisfaction with environmental variables such as service provision, employer support, and external support decrease turnover intention. These support variables give researchers a starting point for further research on turnover intention.

The job person compatibility variable, combining job satisfaction and job match variables, was not practically significant for the current study. Future studies should look at the variables separately in terms of their impact on turnover intention. The rehabilitation literature has a mass of information available to address the importance of the each variable; so further research is needed in the area of turnover intention.

The current study used existing data that had very little representation from races other than Caucasians. While it is true that people with MS are predominantly of European Ancestry, more information is needed on the employment concerns of various cultural groups who also deal with chronic illnesses such as MS.

The current study looked at the symptom severity variable, but did not specifically look at individual symptoms such as cognitive decline. Roessler and Rumrill (1995) identify thought processing concerns and memory deficits as barriers

to career maintenance. Roessler et. al (2001) found those adults with MS reporting cognitive symptoms were almost four times as likely to be unemployed than those who did not. Future studies on turnover intention in this population should include the important variable of cognitive symptoms. A study could be devoted specifically to the cognitive aspects of MS and possible interventions. Finally, the current study did not address the financial status of those reporting higher levels of turnover intention versus those reporting low levels of turnover intention; nor was benefit status analyzed. The financial situation may impact one's decision to leave employment, and should be considered in future studies on turnover intention in this population.

Future research could use Szymanski, Hershenson, Enright, and Ettinger's (1996; cited in Szymanski & Maxwell, 1996) theory to discuss these variables in the context of work and home environments. The theory asserts that regardless of disability, career development is influenced by the context in which individuals live. Five contextual factors are proposed to be key to career development: Individual factors such as aptitudes, interests, and abilities, contextual factors such as the local economy or labor market, meaning factors such as values, work environment factors such as adaptations, and output factors such as productivity expectations.

Policy Implications

Ninety days does not give enough time to adequately determine successful employment for an individual with MS. The symptoms of MS may progress after a vocational rehabilitation case is closed, which leaves the individual without services at this critical time. A phase out approach might work better in this situation, as

described in Chapter 5. This will allow the rehabilitation counselor to take credit for the services provided to the individual, without penalty for not closing the case.

Higher use of post employment services could also benefit in this situation, so that if a case has already been closed, the counselor would have the flexibility of providing needed services to an individual with a chronic illness.

Such as policy shift would not be an easy undertaking. Funding is usually tied directly to number of successful closures, or status 26 closures, therefore extending the time beyond ninety days is a difficult task. State administrators feel pressure to secure adequate funding for programs, and in turn counselors feel pressured to close as many cases in status 26 as possible, even if some of those do not remain employed much longer than the 90-day mark. Perhaps a better funding structure would be based on multiple outcomes much like the Ticket to Work funding structure, which provides for payments at certain milestones (Social Security Administration, 2010). Not only would this provide a longer-term support system for individuals receiving services, but also relieve pressure on counselors to make quick closures even when the needs of the individual go beyond ninety days.

A final policy recommendation is for states to require ongoing training of their counselors in the area of chronic illness and disability. While some rehabilitation counselors possess Certified Rehabilitation Counselor (CRC) status, and are therefore required to pursue continuing education training, that is not the case in all states. Some states require the certification, while others require a person be eligible to sit for the examination, and others do not require even that. Keeping up with current knowledge of disability issues and evolving practices is especially important

when working with people with chronic illnesses such as MS. States should identify a certain number of required continuing education hours per year, with a portion of those hours to be obtained in working with people with MS or other chronic illnesses. Resources already exist for training purposes in the form of regional Disability and Business Technical Assistance Centers (DBTAC) and Rehabilitation Continuing Education Programs (RCEP). The primary purpose of the DBTACs is to provide technical assistance in compliance with the American's with Disabilities Act (ADA). RCEP programs develop and conduct training opportunities to a variety of personnel including state agencies, client assistance programs, and independent living centers (Rehabilitation Services Administration, 2010). State agencies are encouraged to utilize existing resources such as these to provide continuing education to staff in the area of chronic illness and disability.

Rehabilitation Education Implications

Rehabilitation education programs would benefit from enhancing current programs of study with an increased emphasis on varying models of supported employment. While this topic is addressed in most master's level training programs, a greater emphasis would prepare students for providing longer term ongoing supports to their clients, especially those with chronic illnesses such as MS. This idea becomes increasingly important with the above suggestion of increased provision of post employment services, and requiring employment periods of longer than ninety days prior to closing a case successfully employed. Further, successful ongoing supports require a level of intensity that currently is not required of a

vocational rehabilitation counselor, especially in those states where services such as these are contracted out to community rehabilitation providers.

Training programs in rehabilitation could be formally extended to a two-year program to include a greater emphasis on counseling skills and mental health issues. It has been established in the literature that adults with MS often experience severe depression, as well as developing bipolar disorder (Minden & Schiffer, 1990; NMSS, 2007). Students graduating from current rehabilitation programs likely are not prepared to deal with the complex co-morbid mental health issues that a person with a chronic illness such as MS can experience. Being competent to understand, recognize, and address these mental health issues is vital to helping a person with MS continue in employment. The need for this has been recognized previously in the rehabilitation field with the proposed merger of the Council on Rehabilitation Education (CORE) and the Council for Accreditation of Counseling and Related Education Programs (CACREP; Shaw, 2008). While the merger did not come to fruition due to failure to resolve faculty issues, the need to have these processes still exists. That places the impetus even more on rehabilitation education programs to address these topics of co-morbid mental health and counseling issues.

In order to facilitate integration and maintenance in the community, self-employment is a viable option for this population. Due to the need to provide more options in this area to people with MS and any disability, students would benefit from training in this area during their graduate work. A job placement class provides a natural opportunity for this.

Service Provision Implications

The current study reflects a need for more intense and ongoing supports for people with chronic illnesses such as MS. Ninety days is really a short time to evaluate a successful placement for someone with MS. Due to the unpredictable nature of the disease, more time is necessary once services are provided to determine the long-term needs of the individual. Careers, even jobs, are not mere ninety-day undertakings, and therefore the services available to people with chronic illnesses should not be closed after 90 days of becoming employed, or after said services are provided. Many supported employment models include provisions for long-term ongoing supports, and would likely work well in the case of a person with a MS to address concerns when they arise.

We know from the research that in general people with MS are educated, have work histories, and overwhelmingly desire to work. Such a person may not require constant supports or services from a rehabilitation program, but when relapses occur would likely benefit from ongoing supports. For example, when a person with MS encounters a relapse, negotiations can be made with the employer for accommodations such as time off of work, modified work schedules, modified duties, or other supports to allow the employee to keep the job, and also the employer to keep their valuable employee. Ongoing supports such as these provided in a post-employment services status would require a strong relationship between the vocational rehabilitation counselor and the person with MS, as well as the vocational rehabilitation counselor and the employer. This is necessary for quick identification of any problems, so that accommodations can be made prior to job

exit. Additionally, helping to develop the natural supports between the employee with MS and the employers fits right with the findings of this study, as well as research in the management literature, that employer support impacts turnover intention. With any added training or services, additional funding is a priority. In a time when economic issues are prevalent, this may be a difficult accomplishment; yet necessary to provide either qualified rehabilitation counselors to provide intense ongoing supported employment, or to have money to contract for said services.

Rehabilitation counselors should also be aware of the impact external support has on an individual's certainty of employment. Interventions such as those discussed in Chapter five may be utilized in the case of a person with MS to enhance external supports. It is not surprising that those who perceive higher levels of supports may be less likely to plan to leave employment. Researchers and educators promote a "holistic" approach, but often families and significant others are left out of the process. In the case of a chronic illness such as MS, family members and significant others can be greatly impacted, therefore services geared toward the individual while being considerate of significant others and their needs is essential. Last, recognizing what other services might be helpful to the individual with MS is crucial. A rehabilitation counselor has a limited number of services at his or her disposal, and must look to the community to connect clients with other necessary services. Being aware of potential needs as well knowledgeable about community services is necessary for successfully working with an adult with MS.

Conclusion

The current study furthered existing research in the rehabilitation literature by exploring the important concept of turnover intention. The organization and management literature shows that turnover intention is the precursor to one leaving employment. Little research has been completed in the rehabilitation literature on this concept. The current study reflects important findings for persons with chronic illnesses such as MS; that certain areas can be targeted for interventions. Specifically, the environment variables researched in this study show potential for intervention. Many persons with MS may have to eventually leave employment due to the chronic nature of the disease; however, if interventions can be utilized to increase the length of employment time for this group, both persons with the disease and employers would be positively impacted.

Extended employment status in the state-federal rehabilitation system represents one area of change that could benefit this population. The ninety days to closure policy is outdated and ill equipped to adequately determine success in most disability categories, especially a chronic illness that is progressive and unpredictable. This would allow an individual with MS open access to rehabilitation counselors when their condition or work situation warrants it.

Home based employment opportunities are gaining momentum in the rehabilitation field, and are being recognized as a viable employment opportunity. This will allow an educated and experienced sector of the work force to continue in productive employment that may be more flexible to meet their needs to deal with illness related variables. Resources are available to adults with MS through the Job

Accommodation Network, the National Multiple Sclerosis Society, and the Small Business Development Administration to name a few. Veteran's diagnosed with MS should also check into benefits available to them through the Department of Veteran's Affairs.

Supported Employment presents another opportunity for intervention in the environmental set of variables. This service provides perhaps the best scenario for adults with MS, because in fact it can be utilized to address barriers in employer support, external support, or service provision. This is a holistic, individualized model that takes the specific needs of the individual into account. Services are planned based on those needs. The IPS model discussed in Chapter 5 fits well with the rehabilitation field with the person first philosophy. "Being treated as a person first has helped me deal with MS and still feel like a person, no matter the incredible vagaries of this condition" (Anthony, 2006).

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