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THE ROLE OF WORK VOLITION IN THE ASSOCIATION BETWEEN COLLEGE
STUDENTS' MEDICAL ILLNESS SYMPTOMATOLOGY AND THEIR MAJOR
SATISFACTION, EDUCATIONAL PERSISTENCE INTENTIONS,
AND CAREER ASPIRATIONS

Lauren M. Bouchard

54 Pages

This thesis reports the results of a study exploring the role of work volition in the relations of health-related symptomatology and perceptions to the short-term career outcomes of major satisfaction, leadership aspirations, educational persistence intentions, and real/ideal career discrepancy. The responses of 366 college students to an online survey revealed that illness perceptions and the number of unhealthy days out of the last 30 were significantly related to work volition. Work volition was significantly related to all four short-term career outcomes. Path analyses showed that work volition was a mediator between unhealthy days and all four short-term career outcomes, which provides support for a mediational model of health limitations, work volition, and career outcomes. Lower work volition may serve risk factor for students with health related challenges, and career counselors and other providers should consider the constraints that college students with chronic illnesses face when conducting career assessment and counseling. Limitations and future directions will be discussed.

KEYWORDS: Chronic illness, College Students, Illness Perceptions, Vocational Psychology, Work Volition.

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LAUREN M. BOUCHARD

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE

Department of Psychology

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L. M. B.

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CHAPTER I

INTRODUCTION

Many individuals with chronic illness face career barriers that can lead to underemployment and career dissatisfaction (Beatty, 2012; Beatty & Joffe, 2006). Some of these barriers include stigmatization of chronic illness, discrimination in the workplace, and lack of adequate accommodations for health related needs (Beatty 2012; Beatty & Joffe, 2006; Munir, Yaker, Haslam, Long, Leka, Griffiths, & Cox, 2007). Although chronic illnesses can be disabling, they may differ from the traditional notion of disability due to the unpredictability and day-to-day variability of symptoms (Beatty & Joffe, 2006). Beatty and Joffe (2006) explain that although there may be periods of remission, a chronic illness is often a permanent part of a person's life. Therefore, individuals with chronic illness live with the unsettling knowledge that their illness could flare up during any stage of their career in an unpredictable way (Beatty & Joffe, 2006). Finally, these researchers explain that often chronic illnesses such as Crohn's disease, epilepsy, multiple sclerosis, heart disease, and diabetes are invisible and may require workplace disclosure, which is potentially stressful due to a possible lack of understanding or discrimination (Beatty & Joffe, 2006).

Employees with chronic illness also can face increased psychological and health related distress due to their illness interfering with their work responsibilities (Munir et al., 2007). Munir and colleagues (2007) found that presenteesim, or coming to work

while feeling unwell, was also associated with psychological and health related distress. Due to a great number of barriers and related distress, employees may try to anticipate barriers, which may affect their long-term career decision-making (Beatty & Joffe, 2006).

Although many of these barriers occur with adults already in the workforce, college students with chronic illnesses may face barriers in their college educations such as lack of accommodation and isolation from peers (Herts, Wallis, & Maslow, 2014). Because of advances in medical care, up to 90% of children with child onset chronic illness are living into adulthood and matriculating into college, and it is uncertain if colleges are adequately prepared to meet the needs of this special population (Blum, 1995; Gledhill, Rangel, Garralda, 2000; Maslow, Haydon, McRee, & Halpern, 2012; Maslow, Haydon, McRee, Ford, & Halpern, 2011).

Maslow and colleagues (2011) found that individuals with child-onset chronic illness were significantly less likely to have ever had a job, to have a current job, and to graduate from college. Additionally, they found that young adults with conditions of illness during childhood were more likely to be on public assistance (Maslow et al., 2011). These researchers also found that despite having similar high school graduation rates as their healthy peers, students with child-onset chronic illness were only about half as likely to graduate from college (18% vs. 32%; Maslow et al., 2011). In similar analyses, Maslow and colleagues found that college students with adult onset chronic illness had similar rates of attending college (66% vs. 72%), but much lower rates of graduating successfully (19% vs. 32%; Maslow et al., 2011). Additionally, young adults with adult-onset chronic illness were also less likely to have a current job at the time of the study (59% vs. 68%; Maslow et al., 2011).

Many students also may face mental illness in their college careers, which can affect a student's functioning similarly to a physical illness. Schindler and Kientz (2013) explain that individuals with chronic mental illness such as major depression, bipolar disorder, and schizophrenia encounter both internal and external barriers that can affect their ability to finish a college degree. They found that the most common barriers to employment and higher education for individuals with psychiatric diagnoses were general fears and anxieties, progression of psychiatric symptoms, unmanageable stress, lost motivation, and inability to concentrate.

It is evident that students with chronic illness, whether it is physical or mental or acquired in childhood or early adulthood, will likely face barriers in their collegiate and professional careers. However, it is uncertain if encountered barriers themselves are solely to blame for eventual career dissatisfaction and stagnation. Beatty and Joffe (2006, p.185) state that illness in early career stages is a "mixed blessing" because young people with chronic illness can understand their limitations and set realistic goals, however they may discount a desired career path because they believe they will eventually be disappointed when they cannot achieve their ideal goal. This can lead to a dissatisfying compromise that can impact the trajectory of their careers (Beatty & Joffe, 2006). Duffy and colleagues (2011) state that career barriers are the potential factors that can limit an individual's career growth, while work volition is the sense of agency to make career decisions despite the constraints of barriers. Work volition has been shown to be an important link in career satisfaction for many groups with limited educational and career options (Duffy, Bott, Torrey, & Webster, 2013). However, it is unclear if work volition

plays a part in the career development and outcomes of college students with chronic medical illnesses.

The purpose of this study was to understand the relations of illness perceptions and symptoms, work volition, and the short-term career and educational outcomes of academic major satisfaction, leadership aspirations, educational persistence intentions, and the presence or absence of a discrepancy between real and ideal career aspirations in college students. Understanding the relations of these variables could be helpful for student affairs professionals and career counselors who will no doubt encounter many students with chronic mental and physical illnesses or medical symptoms. Additionally, when college student personnel understand these variables, they will be able to advise students who are facing the uncertainty of living and working with a chronic illness. Adequate support and understanding in the collegiate setting could not only prevent some of the later undesirable career outcomes but could also enhance realistic yet satisfying and meaningful career trajectories.

CHAPTER II

LITERATURE REVIEW

This chapter will examine the prevalence of chronic health issues in college students and the barriers they may face both in higher education and in their eventual careers. I will discuss how the day-to-day experience of current symptoms and perceptions of illness may theoretically impact their work volition, or the sense of agency they have over making a satisfying career choice. Work volition may mediate the relationship between their perception of their health status and short-term career outcomes such as academic major satisfaction, leadership aspirations, educational persistence, and a discrepancy between their real and ideal career aspirations.

Prevalence of Chronic Health Conditions Among Students

Despite the perception that chronic medical illnesses are problems for older adults, young people are also likely to experience chronic medical conditions, especially with advances in medical care. Five hundred thousand young people with child-onset chronic illness turn 18 each year and many become college students (Maslow et al., 2012). The American Council on Education estimated that 10,000 students with chronic conditions such as cystic fibrosis, cancer, lupus, and multiple sclerosis matriculate as college freshman each year (Henderson, 1999). This is about 15% of students with self-reported disabilities (Henderson, 1999). However, given that many people with chronic physical and mental illnesses do not self identify as disabled, the number of students with

chronic illness is likely significantly underreported (Edelman, Schuyler, & White, 1998; Royster & Marshall, 2008). Mental illnesses also affect an estimated 26% of American adults aged 18 and older, and it is estimated that 86% of students with a mental health diagnosis will drop out of college before completing a degree (Kessler, Chiu, Demler, & Walters, 2005; Kessler, Foster, Saunders, & Stang, 1995).

Maslow and colleagues (2011) systematically examined data from adolescents diagnosed with cancer, diabetes, epilepsy, or heart disease who were followed into adulthood in a nationally representative study of 7-12 grade students in the United States. They found that 2% of students in the study reported one of these childhood onset diagnoses. These students had slightly lower rates of high school graduation than those without those illnesses (87% vs. 92%), but they reported strikingly different rates of college graduation (18% vs. 32%; Maslow et al., 2011).

For the purposes of this study, chronic illnesses were considered to be a physical or mental health condition for which a person needs to see a doctor two or more times a year (Earnshaw, 2012), which is a less stringent criterion than having a documented medical disability. Even without a documented disability, however, students may still experience frequent symptoms that will affect parts of their day-to-day functioning and that could be considerations in their plans for the future.

Barriers in Higher Education

Differences in college graduation rates between students with and without chronic illnesses are likely due in part to barriers in the collegiate environment. Herts and colleagues (2014) conducted a study of college freshmen with chronic mental and physical illnesses in which they examined loneliness, health related quality of life

(HRQoL; a measure of the degree to which current day-to-day functioning is impacted by health symptoms), use of health services on campus, and experience with chronic illness at college (“How many students at the college do you know with a chronic illness or disability?”). The study had a 10% overall response rate (total 163 participants) in which 45 students reported a chronic mental or physical condition. Students who indicated a chronic condition reported lower HRQoL and greater loneliness (Herts et al., 2013). Many also indicated that they were isolated from other students with or without chronic conditions, and that they were not currently connected with health and disability services (Herts et al., 2013). These students face the challenge of transitioning to college while also learning to manage their condition in a new environment with less social support.

Although students may benefit from utilizing disability services, many students with chronic health conditions do not consider themselves to have a disability in the traditional sense, and their limitations may not be well understood by campus personnel (Royster & Marshall, 2008). According to Royster and Marshall (2008), students with chronic illness face challenges such as unpredictable relapses and flare-ups, inability to qualify for financial aid or other services, invisibility of their condition, and possible disbelief or discrimination from others. Additionally, the nature of their conditions may produce considerable variability in their day-to-day lives, which leads to general uncertainty of future well-being (Royster & Marshall, 2008). Beatty and Joffe (2006) explain that in this way chronic illness represents a unique dimension of diversity, which is often not accommodated well in educational and work settings. These researchers believe that chronic illness is characterized by unpredictability over time, day-to-day variability, permanence, and invisibility. Royster and Marshall (2008) believe that

adequate support from colleges is the key to students thriving in college, however, traditional collegiate services often do not adequately address the unique dimensions of chronic illness.

Internal and External Career Barriers

These aspects of chronic illness have been shown to affect adults already in the workforce, and students may anticipate these eventual career barriers. Beatty and Joffe (2012, p. 94) state that many individuals with chronic illness “fall in the ‘space between’ without policy and structural supports.” They conducted a qualitative study of individuals with MS and epilepsy to determine what career barriers impacted their work lives, and they found that most of the barriers were general illness course/symptom uncertainty and other people’s reactions and stereotypes. Many individuals with these chronic illnesses noted that they generally couldn’t predict when their illness would become problematic in their work lives, and they would sometimes have difficulty performing their job tasks when their symptoms would flare up. Another source of stress was misunderstanding and stereotypic attitudes from others in the individual’s work environment. These reactions ranged from pity to questions about work ethic. Participants also noted that they had to deal with others’ perceptions that they were incompetent, which sometimes became a self-fulfilling prophecy when they were denied opportunities (Beatty & Joffe, 2012).

Beatty and Joffe (2012) also noted four career trajectories of their participants: plateauing, redirecting, retreating, and self-employment. Plateauing, which was the most common path, occurred when individuals stayed in their career for considerable time and ultimately stagnated due to unlikelihood of advancement. The participants tended to endorse this decision because of internal and external barriers such as anticipation of

discrimination, fear of losing health insurance, and low self-efficacy. Some of the participants in this study noted that they were underemployed, but didn't feel as though they could break past career barriers.

The second career trajectory, redirecting, occurred when individuals changed their career goals based on problems they expected in the future. This can occur both with people in training for a given career or after a career had been attempted. Next, some individuals endorsed retreating, which occurs when an individual decreases their workload and or switches to a lower level job due to the challenge of managing their condition while in a higher-level job. They may have found it difficult to maintain the pace of the position due to their symptoms. Finally, there is self-employment, which was endorsed by two participants. They found that self-employment provided the autonomy and flexibility they needed to accomplish their goals while also allowing for the variability of their symptoms. Regardless of the path chosen by the individuals in this study, it is important to recognize that in higher education and in the workforce there are both external and internal barriers to achieving a realistic and satisfying career choice for those with chronic illness. Low self-efficacy, lowered career expectations, and lack of coping resources may be as pervasive barriers as are lack of accommodation, stereotypes, and isolation.

Perceived Severity of Illness

Given the heterogeneous nature of chronic illness, students reporting a chronic condition may have to cope in different ways (Edelman, Schuyler, & White, 1998). Edelman and colleagues (1998) state that chronic illnesses can impact individuals in very different ways and that two individuals with different illnesses can have very different

limitations on their lives. For example, someone with asthma may need to use an inhaler before physical activity, which may be a relatively minor adjustment, while someone with kidney disease may need to undergo dialysis consistently, which requires much more accommodation (Edelman et al., 1998). In addition, these authors state that some illnesses are progressive, and although they might not require substantial accommodation now, they may later. For example, an early diagnosis of MS may require minimal adjustment, but it can later become completely debilitating. Additionally, someone with a major depression may have severe symptoms now, but later could go into full remission, while another individual with major depression could experience more frequent episodes.

Because of this, there may be multiple ways to understand illness impact. First, understanding current limitations such as health-related quality of life (HRQoL) could be beneficial in understanding day-to-day limitations in normal life activities. One common way of assessing HRQoL is to ask participants about the number of days in the past 30 days that their physical or mental health was not good. This measure of “unhealthy days” can be an indicator of functional limitations that a person has to endure regardless of if they have a diagnosed physical or mental health condition.

However, current day-to-day limitations may only be part of the severity of an illness, and cognitive and emotional representations of illness, or illness perceptions, may also be greatly important. Illness perceptions was originally derived from the work of Leventhal and colleagues who proposed a theoretical model of coping that was based on dimensions of illness including identity, cause, timeline, and consequences (Leventhal, Nerenz, & Steele, 1984; Levanthal & Diefenbach, 1991). Identity refers to the patient’s conceptualization of their illness label and symptomatology while cause refers to the

patient's idea of what triggered their illness (i.e. genetics, lifestyle factors, etc.). Timeline is the patient's idea of the progression, duration, and course of illness. The consequence dimension refers to the patient's ideas of how the illness will impact their daily functioning, and the cure dimension refers to the patient's beliefs about the controllability and curability of their illness. Because of the dimensions of illness beliefs, even patients with the same condition could have unique coping resources due to differences in illness cognitions. Because of this, patient perception of illness is highly important to a patient being able to cope with the challenges that a chronic illness represents.

Therefore, subjective appraisal of illness, such as illness perceptions, could be a more nuanced way of determining the impact of illness than an objective report of daily limitations alone (i.e., unhealthy days). The way individuals perceive their illness in each dimension, both now and in the future, could affect their ability to anticipate and cope effectively with the stressors they will face. Additionally, illness perceptions could play a salient part in understanding how individuals set goals in light of perceived limitations. In this way, illness perceptions could be linked with short and long term career decision-making and satisfaction. In this study, both unhealthy days and illness perceptions were assessed.

Psychology of Working Framework

Much of the vocational psychology literature is devoted to individuals with many choices in regards to their academic and career development, but there has been a recent and passionate call for psychologists to expand the purview of vocational psychology to include individuals who face a variety of barriers and limited choice in education and

work (Blustein, 2006). Blustein asserts that race, gender, sexual orientation, class, and disability status cause individuals to function differently in the working world due to the barriers in their environment (Blustein, 2001; 2006). The Psychology of Working framework is based upon working as a means of survival and power, working as a means of social connection, and working as a means of self-determination (Blustein, 2006).

Blustein asserts that a fundamental part of working for most people is simply for survival. People must work to meet basic economic needs, and this often takes precedence regardless if the work is found to be meaningful or engaging. Individuals are afforded power and status when they are able to maintain their work positions.

According to Blustein (2006) work also functions as a means of social connection both in the maintenance of social relationships and societal structure. Even solitary jobs create connections between individuals and can provide a sense of belonging to something greater. Finally, Blustein states that many vocational theories assume that individuals are able to pursue intrinsically motivating careers that are aligned with their interests, but this is often not the case for many workers who have limited choice in their given careers.

The Psychology of Working framework uses self-determination theory to consider the spectrum of career-related motivation, and to optimize career satisfaction even for those with limited work volition.

Work Volition

Work volition is defined as an individual's sense of agency or freedom to make a career choice one sees as desirable despite constraints (Duffy, Diemer, Perry, Laurenzi, & Torrey, 2011). Jadidian and Duffy (2012) found that White participants endorsed higher work volition, which is consistent with the idea that minority ethnic groups face more

career barriers such as discrimination. Additionally, work volition was found to mediate the relationship between social class and work meaning (the subjective experience that one's work has significance), which is consistent with the idea that those in lower social classes have greater constraints on their career decision-making (Allan, Autin, & Duffy, 2014). In a study of U.S. Veterans, greater levels of education and employment and lower levels of PTSD symptomology were also associated with higher levels of work volition (Duffy et al., 2015). Most importantly, work volition was found to be inversely correlated with perceived career barriers (Duffy, Diemer, & Jadidian, 2012). Finally, work volition has been shown to correlate with academic satisfaction and career decision-making self-efficacy in undergraduate students (Jadidian & Duffy, 2012). Duffy and colleagues (2015) also showed that work volition mediates the relationship between career adaptability (feeling adaptable in one's work position) and academic satisfaction.

As stated earlier, individuals with chronic illness often experience both internal and external constraints in their career development such as underemployment, lack of accommodation, and financial burden (Beatty & Joffe, 2012). These individuals also may face general uncertainty about future well-being, which may affect anticipation about future barriers (Beatty & Joffe, 2012). It follows that with internal barriers, such as low self-efficacy and anticipation of stigma, and external barriers, such as discrimination and lack of accommodation, individuals with chronic illness would endorse lower levels of work volition. The assumption that chronic illness symptomatology and illness perceptions would be associated with lower perceived work volition has not been empirically verified, and doing so represented one purpose of this study. I also reasoned that if chronic illness symptoms and perceptions are, in fact, associated with lower work

volition, it also may follow that both short- and long-term career outcomes may be affected.

Personality and the Work Environment

Many vocational theories have discussed the importance of congruence between personality and work environment. Holland (1997) developed a theory that individuals seek out careers that are a match their talents and skills while also allowing them to express their opinions and mindsets. Holland (1997) also believed that individuals seek out work that is agreeable to them, and where they can take on roles that are fulfilling and meaningful. Holland classified six basic personality types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC). All of the types have activities, abilities, values, and self-beliefs that are ideal for each personality. People typically have a dominant type, but it is also important to consider subtypes, which can provide a more nuanced view of potential careers. Additionally each work environment could be classified as one of the RIASEC types, which is optimal for matching client types to potential work places (Holland, 1997). The overarching idea in Holland's theory is that people will seek out work environments that are an optimal fit with their personality, and when they do, they will be more satisfied and efficacious in their careers.

Tracey and Robbins (2006) conducted a study of 80,574 students in 87 colleges. They found that interest-major congruence was predictive of persistence for individuals with low overall interest level. This means that congruence is highly important for individuals who have fewer interests when compared with individuals with more varied interests. Additionally, Donohue (2006) studied working adults who intended to change careers as well as adults who intended to remain in their careers. He found that those who

intended to change careers were less congruent with their current work environment, and those who intended to remain in their jobs were more congruent with their current environment. He also found that those who were intending to make a career change were often switching to a career that was more congruent with their RIASEC types (Donohue, 2006).

Similarly, The Minnesota Theory of Work Adjustment is also considered a theory based upon person-environment psychology (Swanson & Schneider, 2006). Swanson and Schneider (2006) explain that this theory is based upon an individual's adjustment to their work environment but can also be used to determine an optimal career environment. This theory has two main models: predictive and process. The predictive model determines factors that explain a person's satisfaction with his or her work environment. According to this theory, individuals who are more satisfied in their work environments will remain in their careers longer, and satisfaction is predicted to be derived from a match between the person's work-related values (e.g., autonomy, safety, etc.) and the reinforcers offered by the job. The process model seeks to understand how individuals attain a fit with their environment in addition to factors that maintain this fit (Swanson & Schneider, 2006). An ideal fit would be a symbiotic relationship with the employee being satisfied and being satisfactory to the work environment (i.e., having the skills and work style required by the position).

Both Holland's Theory of Vocational Theory and Adjustment (1997) and the Minnesota Theory of Work Adjustment are pertinent to the career development of students with chronic illnesses because similar to students without chronic illness, they are likely trying to find an optimal fit between their personalities, abilities, values, and a

potential major or work environment. However as stated earlier, these students may perceive more potential barriers that would impact their ability to maintain congruence between their interests, abilities, values and their work environments. For example, a student with multiple sclerosis may desire to become a medical doctor to help other people with chronic diseases, but may perceive medical school as an arduous path with no real security. This student may have constraints such as current symptomatology and need for adequate health insurance coverage that may cause her to question her desired path. Lowered work volition could lead her to discount her real interests, and this could lead to person- environment incongruence. As posited in Holland's (1997) theory and the Theory of Work Adjustment, the theoretical outcomes of such incongruence include major dissatisfaction and possible lowered persistence in higher education.

Career and Educational Outcomes

Short-term career and educational outcomes are becoming increasingly important in higher education assessment, and may be related to work volition. Work volition has previously been correlated with some important academic and career-related outcomes. First, work volition was linked to academic major satisfaction in undergraduate students (Jadidian & Duffy, 2012). Duffy, Douglas, and Autin (2015) also found that work volition was a direct predictor of academic satisfaction. Additionally, Jadidian and Duffy (2012) found that work volition was strongly correlated with career decision-making self-efficacy. Finally, work volition was also linked with internal locus of control, which may be significant for individuals who face uncertainty such as those with chronic health conditions (Duffy et al., 2015).

Although no prior research has been done to verify this possibility, work volition could also be linked to other pertinent outcomes such as a discrepancy between a person's realistic and ideal career aspirations. If a student has limited volition in making a career choice, he or she may choose to pursue something different or lower his or her career expectations in order to avoid disappointment or negative outcomes (Beatty & Joffe, 2006). Additionally, students often pursue higher education to attain the training necessary for their ideal career choice. If students don't feel that that choice is possible, they may have less motivation to complete their degree program (Allen & Robbins, 2008). Finally, students may have lowered leadership aspirations if they feel that they may be denied opportunities due to their chronic illness (Beatty & Joffe, 2006).

Purpose of the Study and Hypotheses

The purpose of this study was to explore work volition as a possible mediator of illness symptomatology and short-term career-related outcomes. Specifically, the focus of this study was on the short-term career outcomes of major satisfaction, leadership aspirations, educational persistence intentions, and real/ideal career match.

Understanding how the short-term career outcomes are related to illness symptoms and work volition can help college and career personnel help students make informed, realistic, and satisfying choices before entering into a potentially stymieing workforce.

Hypothesis 1: First, it was hypothesized that both HRQoL (number of unhealthy days in the last 30 days) and illness perception scores (reflecting cognitive and emotional appraisals of any illness a person has) would be negatively related to work volition. A greater number of unhealthy days and greater perceived severity of any illnesses were

expected to be associated with work volition because they limit the degree to which people believe they are free and able to pursue a wide range of career possibilities.

Hypothesis 1a: However, it was hypothesized that illness perceptions would have a stronger association with work volition than unhealthy days. This is because unhealthy days measures the number of unhealthy days a person has had recently and focuses on functional limitations, whereas illness perceptions are multifaceted and include one's cognitive and emotional representations of illness. The latter measure of health is subjective and involves anticipation about the course of one's illness in the future, so it seemed likely that it may have a stronger link to general agency in making and acting on career decisions despite constraints.

Hypothesis 1b: It was theorized that individuals making a career decision not only look at their current functional limitations, but also to dimensions of identity, control, timeline, and consequence. Therefore, an individual's appraisal of these dimensions (i.e., illness perceptions) would have incremental validity over the unhealthy days (i.e., daily symptomatology) and would provide information above and beyond their current functional limitations. In other words, although illness perceptions were expected to have a stronger association with work volition than unhealthy days, it was expected that both would contribute uniquely to the explained variance in work volition.

Hypothesis 2: It was also hypothesized that work volition would be positively related to career outcomes such as major satisfaction, and leadership aspirations, educational persistence intentions, and it would be inversely related to the presence of a discrepancy between one's ideal and real career aspirations. The current study would be a replication of work volition's relation to major satisfaction (Duffy, Douglas, & Autin,

2015; Jadidian & Duffy, 2012) with a new sample of students. The other outcome variables have not yet been empirically linked to work volition, but they seemed likely to be related. Work volition was deemed likely to be related to intention to persist because students who feel less agency in making a career choice may have less motivation to persist in college due to lack of interest-major fit (Allen & Robbins, 2008). Work volition was expected to be related to leadership aspirations because individuals with chronic illness who feel less agency to make career decisions may not pursue career advancement (Beatty & Joffe, 2012). Finally, work volition may predict the discrepancy between an individual's ideal and real career choice because individuals with low work volition may feel a need to compromise on their ideal career due to the barriers they may face.

Hypothesis 3: Work volition mediates the relationship between the predictor variables of unhealthy days (current day-to-day symptoms) and illness perceptions (cognitive and emotional appraisals) with the outcome variables of (a) major satisfaction, (b) leadership aspirations, (c) educational persistence intentions (d) the presence of a discrepancy between one's real and ideal career aspirations. Work volition is likely to be the link between unhealthy days and these short term outcomes because individuals with greater illness related limitations are likely to have lower perceived freedom to choose among work options, which could be related to satisfaction, persistence, and aspirations. Work volition is also likely to be the link between illness perceptions and these short-term career outcomes because illness perceptions are cognitive appraisals, which could affect agency.

Additional exploratory research question: The above hypotheses are based on the assumption that health symptoms will cause a decrease in work volition. It's possible that

general individual differences in work volition are also present and work volition could serve as a moderator. Therefore this study explored a possible interaction between health symptoms and work volition in the prediction of short-term career outcomes.

CHAPTER III

METHOD

Participants

The sample consisted of 366 college students from a large, Midwestern, public university ranging in age from 18 to 62 ($M = 20.19$, $SD = 3.42$). In terms of gender, most participants identified as female ($n = 279$; 76%), with smaller proportions identifying as male ($n = 72$; 20%) or reporting no gender information ($n = 15$; 4%). In terms of race/ethnicity, participants mainly self-identified as White/ European American/Caucasian ($n = 236$; 65%), with remaining participants identifying as African/African American ($n = 48$; 13%), Hispanic/Latina/o American ($n = 50$; 14%), Asian/Asian American ($n = 12$; 3%), Pacific Islander ($n = 2$; 0.5%), Arab American/Middle Eastern ($n = 5$; 1%), and Biracial/Multiracial ($n = 6$; 2%); four participants identified “Other” as their race/ethnicity. In terms of class rank, participants identified as freshman ($n = 105$; 29%), sophomore ($n = 123$; 34%), junior ($n = 105$; 29%), senior ($n=32$; 9%), and graduate ($n = 1$; .3%). Participants reported working between 0 and 40 hours per week ($M = 8.0$; $SD = 9.46$). Seventy-three (20%) participants reported having a health condition that required them to see a doctor at least 2 times per year. Among these participants, common health conditions reported included both physical conditions such as diabetes, heart disease, autoimmune disorders, fibromyalgia, asthma, hypothyroidism, migraines, kidney disease, and epilepsy, as well as mental health

conditions such as depression, anxiety, post-traumatic stress disorder, obsessive-compulsive disorder, and bipolar disorder.

Measures

Demographic Items. Participants were asked to identify their age, gender, race/ethnicity, college major, class rank, and hours worked each week.

Chronic Illness. For descriptive purposes, students were asked to report if they have a chronic illness. Chronic illness was defined as having a physical or mental health condition for which the participant needs to see a doctor two or more times a year (Earnshaw, 2012). If the participant endorsed a chronic illness, he or she was asked to identify the most salient condition in an open-ended format.

Illness Perceptions. Illness perceptions were measured with The Brief Illness Perception Questionnaire (Brief-IPQ) (Broadbent et al., 2006). This measure is designed to assess a participant's subjective perception of her/his illness using 9 items, where each item measures a different domain of the original, longer IPQ-R subscales (Moss-Morris et al., 2002). Five of the items are based on cognitive appraisals of consequences, timeline, personal control, treatment control, and identity. They include items such as, "How much does your illness affect your life?" and "How much do you think your treatment can help your illness?" Two items represent emotional reactions to one's illness and include, "How concerned are you about your illness?" and "How much does your illness affect you emotionally?" One item assesses illness comprehensibility and is, "How well do you feel you understand your illness?" Participants respond to these eight items using a 0-10 response scale that has different anchors (e.g., 0 = *no effect at all* to 10 = *severely affects my life* and 0 = *no symptoms at all* to 10 = *many severe symptoms*). There

is also an open-ended response item that asks participants to list in rank order the most important factors that caused their illness, but this item was not included in the present study.

A total score for the instrument was computed by reverse scoring items 3, 4, and 7 and then adding items 1, 2, 5, 6, and 8. This overall score represents the degree to which the illness is perceived as threatening or benign, and a higher score indicates a more threatening view of the illness (Broadbent, unpublished). Broadbent and colleagues (2006) reported good test-retest reliability in a sample of renal outpatients at 3 weeks (.48-.70) and 6 weeks (.42-.75). In addition, they report that the Brief IPQ items are appropriately correlated with the original IPQ-R subscales in sample of renal, diabetes, and asthma samples. In further validity testing, treatment control correlated with diabetes self-efficacy (.61, $p < .001$) and asthma self-efficacy (.47, $p < .001$) while personal control correlated with asthma self-efficacy (.39, $p < .001$) (Broadbent et al., 2006). Because this measure is geared toward individuals with a chronic illness, only individuals who endorsed a physical or mental health condition were asked to complete this survey. The estimated internal consistency for the present study was $\alpha = .81$

Unhealthy Days. Symptom severity was measured by the Center for Disease Control and Prevention Healthy Days Measure (CDC-HRQOL-4) (Center for Disease Control and Prevention, 2000). The Healthy Days Core Module (CDC HRQOL-4) is made up of 4 items that assess an individual's overall health and number of unhealthy days in the past 30 days. This study used the two unhealthy days items which assess physical impairment ("Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health

not good?") and mental health impairment ("Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"). Unhealthy days were calculated by adding scores from both of these items with a cap of 30 total unhealthy days. Both individuals with and without a chronic health condition completed this questionnaire.

Work Volition. Work volition was measured with the Work Volition Scale-Student Version (Duffy, Diemer, & Jadidian, 2012). This measure is designed to assess college students' sense of agency over making future career choices. The measure consists of 16 items to which students respond using a Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The responses to the items were combined to produce volition and constraints subscale scores as well as a total score. The volition subscale consists of questions to assess general work volition including, "I will be able to change jobs if I want to," and "I feel total control over my future job choices." The constraints subscale assesses perceived limitations in career choice and mobility and includes items such as, "What I want has little impact on my future job choice," and "In order to provide for my family, I will have to take jobs that I do not enjoy." The two subscale scores are often combined to produce a single total score. Duffy and colleagues reported the internal consistency of the scores from this instrument to be .92 (total scores), with Cronbach's alpha estimates of .78, and .89 for the volition and constraints subscale scores respectively. The validity of the measure's scores is supported by the finding that they are strongly correlated with core self-evaluations (.60) and moderately correlated with career

decision-making self-efficacy (.49). The estimated internal consistency for the total scores in the current sample was $\alpha = .87$.

Major Satisfaction. The Academic Major Satisfaction Scale (AMSS) (Nauta, 2007) was used to assess students' satisfaction with their current academic majors. The six-item unidimensional scale is rated on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*) and includes items about major satisfaction ("I feel good about the major that I've selected") and dissatisfaction ("I often wish I hadn't gotten into this major"). Nauta (2007) reported that the Cronbach's alpha for these six items was .90. In addition, the AMSS was positively correlated with academic performance and career decision-making self-efficacy, while it was negatively correlated with career choice anxiety and generalized indecisiveness. The estimated internal consistency for the present study was $\alpha = .93$.

Leadership Aspirations. The Career Aspiration Scale Revised (CAS-7) (Gregor & O'Brien, 2015) was used to measure participants' desire to achieve leadership positions in their given fields after graduation. This instrument has three 8 item subscales including leadership aspirations ("I hope to become a leader in my career field"), achievement aspirations ("I want my work to have a lasting impact on my field"), and educational aspirations ("I plan to reach the highest level of education for my field"). Participant rate items on a four point Likert scale (0 = *not true at all of me* to 4 = *very true of me*). Gregor and O'Brien (2015) reported that the Cronbach's alpha for these items were .90. They also reported evidence of validity as the scale related to educational aspirations and recognition aspirations.

Educational Persistence Intentions. An additional item was used to assess participants' intentions to persist in their degree program (“How likely are you to complete the degree program for which you’re currently enrolled?”). Participants responded on a 5-point Likert scale (1 = *very unlikely* to 5 = *very likely*). This item was written specifically for the current study, so no reliability or validity information exists, but the item does have a high degree of face validity.

Realistic and Ideal Career Aspiration Discrepancy. Career aspirations was measured by two open-ended responses, which ask participants to report an “ideal” career choice (“Ideally, which job or career would you most like to have as an adult?”) and a “realistic” career choice (“Realistically which job or career do you think you are most likely to have?”) (Watson, Quatman, & Elder, 2002). Answers were then coded based on whether the response to the two questions was the same (scored 1) or discrepant (scored 2). A discrepant score suggests that a participant does not believe he or she will attain his or her ideal career.

Procedure

Students were recruited in two ways. Students enrolled in psychology classes were able to access the survey via an online sign-up system, and they participated in order to receive credit or extra credit in eligible psychology classes. An email invitation was also sent through the Disability Concerns listserv at the university in an attempt to oversample students with chronic health conditions. Students recruited through Disability Concerns were entered to win a raffle for five \$20 gift cards. Disability Concerns clients were also informed that they could complete the survey for course credit instead of being

entered into the gift card raffle if they chose. Reminder e-mails were sent to the Disability Concerns clients approximately two weeks after the initial recruitment e-mails were sent.

CHAPTER IV
RESULTS

Means, standard deviations and bivariate correlations were calculated for all of the measures and are shown in Table 1.

Table 1

Means, Standard Deviations, and Correlations Among the Measures

Measure	1	2	3	4	5	6	7
1. Illness Perceptions	1	.48**	-.39**	-.15	-.19	-.05	.17
2. Unhealthy Days		1	-.22**	-.11*	-.03	-.04	.14**
3. Work Volition			1	.36**	.41**	.17**	-.31**
4. Major Satisfaction				1	.31**	.54**	-.26**
5. Leadership Aspirations					1	.23**	-.13*
6. Educational Persistence						1	-.11*
7. Career Discrepancy							1
<i>M</i>	45.20	12.74	80.45	4.09	70.50	4.45	1.37
<i>SD</i>	12.74	9.83	15.05	.93	16.05	1.03	.48
<i>N</i>	73	366	366	366	366	366	366

Note. * $p < .05$, ** $p < .01$. Career discrepancy was coded 1 if the respondent's realistic career choice matched their ideal career choice and 2 if the respondent's realistic choice was different from their ideal career choice.

Hypothesis 1, which stated that both illness perceptions and the number of unhealthy days experienced in the last 30 days would be negatively related to work volition, was supported. Illness perceptions ($r = -.39, p < .001$) and unhealthy days ($r = -.22, p < .001$) were both negatively related to work volition. However, hypothesis 1a, which stated that illness perceptions may have a stronger link to work volition than unhealthy days, was not supported because a z test ($z = .60, p = .55$) showed no significant difference in the strength of the correlations between illness perceptions and work volition ($r = -.39, p < .001$) and unhealthy days and work volition ($r = -.32, p < .01$) among the 73 students who completed both measures. Note that only participants with a health condition requiring them to see a doctor at least twice a year could be included in the latter analysis, as those without a health condition did not complete the illness perceptions measure. Because the illness perceptions measure was limited to 73 participants, there was a lack of power to detect medium- and small-sized correlations (which would have required 85 and 783 participants, respectively). In order to detect medium size differences in the correlations of illness perceptions and work volition and unhealthy days and work volition, 177 participants would have been needed (Cohen, 1992).

Hypothesis 1b, which stated that illness perception scores would be predictive of work volition above and beyond unhealthy days, was also not supported because illness perceptions were not related to any of the outcome variables in the bivariate correlations (See Table 1). If illness perceptions had been related to any of the outcomes (major satisfaction, educational persistence intentions, leadership aspirations, or real/ideal

discrepancy), then hierarchal regression analyses would have been used to explain for the variance after unhealthy days.

Hypothesis 2, which stated that work volition would be related to all four career outcomes, was supported as work volition was positively related to major satisfaction scores ($r = .36, p < .001$), educational persistence intentions ($r = .23, p < .001$), leadership aspirations ($r = .41, p < .001$), and real/ideal career match ($r = -.31, p < .001$).

Hypothesis 3 stated that work volition mediates the relationship between the predictor variables of unhealthy days and illness perceptions with the outcome variables of major satisfaction, leadership aspirations, educational persistence intentions, and real/ideal career match. Because including the illness perceptions measure would have limited the sample included in the analysis to 73 people (and, in turn, would have limited the power to detect significant relationships), a decision was made to only use the unhealthy days measure for this analysis in order to utilize the full sample. Path analyses were conducted to test each of the mediation hypotheses (see Figures 1 through 4), and the significance of the indirect effects was determined using 5,000 bootstrap samples to generate 95% confidence intervals (Hayes, 2013).

Figure 1 shows the results of the path analysis with major satisfaction as the outcome variable. The standardized coefficients presented in Figure 1 are consistent with the theorized model. Unhealthy days were negatively associated with work volition, and work volition was positively associated with major satisfaction. While controlling for work volition, unhealthy days did not significantly predict major satisfaction, suggesting that work volition accounts for the relationship between unhealthy days and major satisfaction. The bootstrap analyses revealed that the unstandardized indirect effect

(-.007; 95% C.I. = -.012, -.004) was significant. Therefore, the data were consistent with the mediation hypothesis when major satisfaction was the outcome variable.

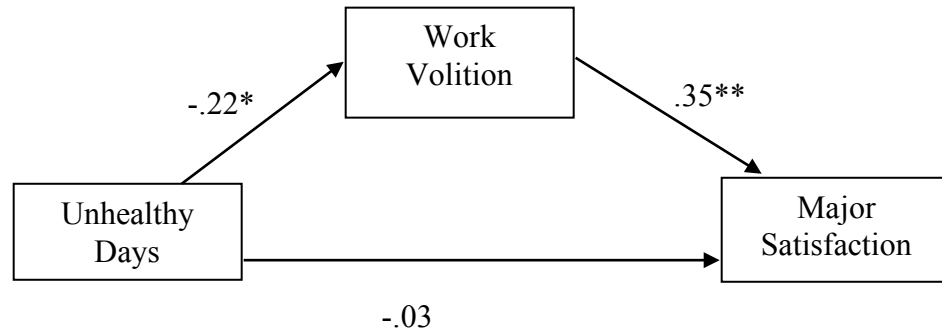


Figure 1. Path Analysis of The Mediating Effect Of Work Volition In The Relationship Unhealthy Days And Major Satisfaction

The second path analysis was conducted with leadership aspirations as the outcome variable (Figure 2). The standardized coefficients presented in Figure 2 are also consistent with the expected results. Unhealthy days were negatively associated with work volition, and work volition was positively associated with leadership aspirations. After controlling for work volition, unhealthy days did not significantly predict leadership aspirations. The bootstrap analyses revealed that the indirect effect ($-.154$; 95% C.I. = $-.25, -.08$) was significant. Thus, the mediation hypothesis was also supported with leadership aspirations as the outcome variable.

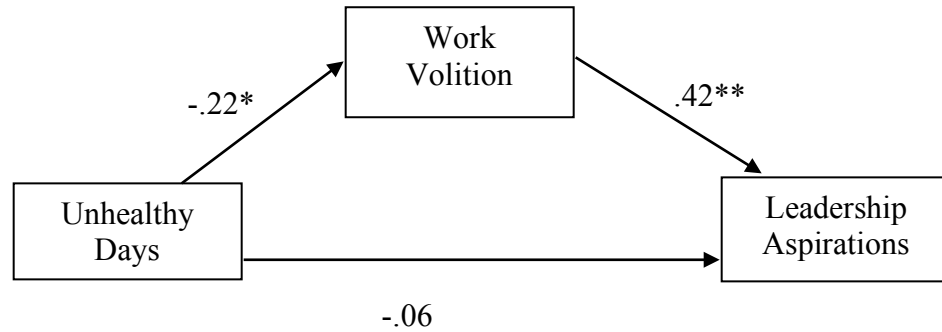


Figure 2. Path Analysis of the Mediating Effect of Work Volition on the Relationship Between Unhealthy Days and Leadership Aspirations

Figure 3 shows the results of the path analysis with educational persistence intentions as the outcome variable, and the pattern of results was identical to the first two path analyses. Unhealthy days were negatively associated with work volition, and work volition was positively associated with intentions to persist. While controlling for work volition, unhealthy days did not significantly predict educational persistence intentions. The bootstrap analyses revealed that the indirect effect (-.004; 95% C.I. = -.008, -.002) was significant.

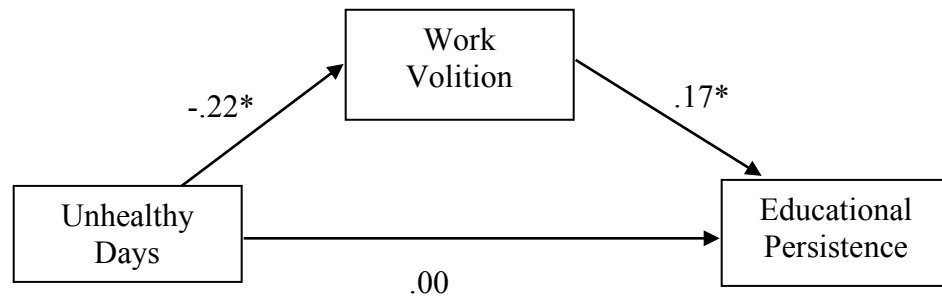


Figure 3. Path Analysis of the Mediating Effect of Work Volition on the Relationship Between Unhealthy Days and Educational Persistence Intentions

Finally, figure 4 shows the results of the path analysis with real vs. ideal career discrepancy as the outcome variable. The standardized coefficients presented in Figure 4 are also consistent with the theorized model. Unhealthy Days were negatively associated with work volition, and work volition was negatively associated with having a discrepancy between one's real and ideal career aspirations. While controlling for work volition, unhealthy days did not significantly predict discrepancy scores. The bootstrap analyses revealed that the indirect effect (.02; 95% C.I. = .01, .03) was significant.

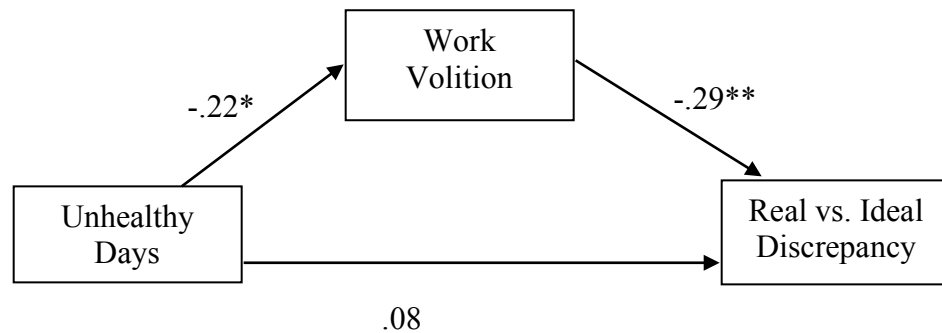


Figure 4. Path Analysis of the Mediating Effect of Work Volition on the Relationship Between Unhealthy Days and Real/Ideal Career Discrepancy

In summary, the hypothesis that work volition would mediate the associations between participant health and short-term career-related outcomes was supported with respect to all four educational/career variables that were assessed in this study.

To test the exploratory research question of whether work volition is a moderator of the relationship between the health measures and career outcome variables, hierarchical linear regression analyses were conducted. As with the path analyses a decision was made to only use the unhealthy days measure for this analysis in order to have adequate statistical power for the analyses (again, the inclusion of the illness perceptions measure would have limited the sample to 73 because it was only completed by those with a health condition requiring them to see a doctor twice a year or more). In the hierarchical regression analyses, unhealthy days and work volition were entered first, and the interaction term between the two was added second. This was repeated once for each of the four career outcome variables. Results of these analyses are shown in Tables 2 through 5. Note that in multiple regression analyses the effect size is indicated by the

value of R^2 . R^2 values between .010 and .058 are considered to represent a small effect, those between .059 and .137 are considered to represent a medium effect, and those .138 or higher are considered to represent a large effect (Cohen, 1988).

When major satisfaction was the criterion, the block of predictors was related to the outcome variable, $R^2 = .13$, $F(2, 363) = 26.70$, $p < .001$. The addition of the interaction term in the second block, $\Delta R^2 = .00$, $F(1, 362) = 0.55$, $p = .46$, was not significant. Thus, work volition did not appear to serve as a moderator of the relationship between the unhealthy days scores and major satisfaction (See Table 2)

Table 2

Results of a Hierarchical Linear Regression Analysis Testing the Moderating Effect of Work Volition on the Relationship between Unhealthy Days and Major Satisfaction

Predictor	<i>B</i>	<i>SE B</i>	β
<i>Model 1</i>			
Unhealthy Days	.00	.01	-.03
Work Volition	.02	.00	.35***
<i>Model 2</i>			
Unhealthy Days	.01	.02	.15
Work Volition	.02	.01	.40***
Unhealthy Days x Work Volition	.00	.00	-.18

* $p < .05$. ** $p < .01$. *** $p < .001$

When leadership aspirations were the criterion, a similar pattern emerged. The block of predictors was related to the outcome variable, $R^2 = .17$, $F(2, 363) = 37.35$, $p < .001$. The addition of the interaction term in the second block, $\Delta R^2 = .00$, $F(1, 362) = 0.08$, $p = .78$, was not significant. Thus, work volition did not appear to serve as a moderator of the relationship between the unhealthy days scores and leadership aspirations (See Table 3).

Table 3

Results of a Hierarchical Linear Regression Analysis Testing the Moderating Effect of Work Volition on the Relationship Between Unhealthy Days and Leadership Aspirations

Predictor	<i>B</i>	<i>SE B</i>	β
<i>Model 1</i>			
Unhealthy Days	.10	.08	.06
Work Volition	.45	.05	.42***
<i>Model 2</i>			
Unhealthy Days	-.01	.40	-.01
Work Volition	.43	.08	.41***
Unhealthy Days x Work Volition	.00	.01	.07

* $p < .05$. ** $p < .01$. *** $p < .001$

When educational persistence intentions were the criterion, the pattern was again similar. The block of predictors was related to the outcome variable, $R^2 = .03$, $F(2, 363) = 5.40$, $p = .005$. The addition of the interaction term in the second block, $\Delta R^2 = .00$, $F(1,$

362) = 1.33, $p = .25$, was not significant. Thus, work volition did not appear to serve as a moderator of the relationship between the unhealthy days scores and intentions to persist (See Table 4).

Table 4

Results of a Hierarchical Linear Regression Analysis Testing the Moderating Effect of Work Volition on the Relationship between Unhealthy Days and Educational Persistence Intentions

Predictor	<i>B</i>	<i>SE B</i>	β
<i>Model 1</i>			
Unhealthy Days	.00	.01	.00
Work Volition	.01	.00	.17***
<i>Model 2</i>			
Unhealthy Days	.03	.03	.30
Work Volition	.02	.01	.25***
Unhealthy Days x Work Volition	.00	.00	-.30

* $p < .05$. ** $p < .01$. *** $p < .001$

Finally, when real versus ideal career discrepancy was the criterion, the block of predictors was related to the outcome variable, $R^2 = .10$, $F(2, 363) = 20.69$, $p < .001$. The addition of the interaction term in the second block, $\Delta R^2 = .01$, $F(1, 362) = 0.63$, $p = .43$, was not significant. Thus, work volition also did not appear to serve as a moderator of the relationship between the unhealthy days scores and career discrepancies (See Table 5).

Table 5

Results of a Hierarchical Linear Regression Analysis Testing the Moderating Effect of Work Volition on the Relationship between Unhealthy Days and Real/Ideal Career Discrepancy

Predictor	<i>B</i>	<i>SE B</i>	β
<i>Model 1</i>			
Unhealthy Days	.01	.00	.08
Work Volition	-.01	.00	.29***
<i>Model 2</i>			
Unhealthy Days	.01	.01	.08
Work Volition	-.01	.00	.00**
Unhealthy Days x Work Volition	.00	.00	-.43

* $p < .05$. ** $p < .01$. *** $p < .001$

The results from the exploratory analysis suggest that work volition is probably best conceptualized as a mediator of the association between health and career-related outcomes.

CHAPTER V

DISCUSSION

The purpose of this study was to examine how health-related factors (i.e., illness perceptions and unhealthy days) might be related to work volition and other short-term career-related outcomes including major satisfaction, leadership aspirations, educational persistence intentions, and real/ideal career discrepancy. Several studies have shown that both college students and working adults with chronic health challenges face a number of barriers in higher education and the workforce; however there is a dearth of information about how health perceptions and limitations affect work volition (Beatty & Joffe, 2006; Beatty, 2012; Edelman et al, 2012; Henderson, 1999; Hert et al., 2014; Maslow et al., 2011, Maslow et al., 2012). Understanding work volition is important because it has been shown to be a predictive of job satisfaction, and could serve as an intervention point for a host of career related outcomes (Jadidian & Duffy, 2012). The goal of this study was to understand work volition's role as a potential intervention focus in terms of health related limitations and symptomatology for students with and without chronic illness.

The results from the first hypothesis, which stated that both illness perceptions and unhealthy days would be related to work volition, indicate that health may play an important role in work volition. Both of these health domains showed highly significant relations with work volition, which indicates that both recent symptomatology and broader perceptions of one's health status may predict career related agency. This finding

is consistent with previous findings that show that circumstantial factors such as social class, lack of resources, and discrimination can impede work volition (Blustein, 2006; Duffy et al., 2012). This finding is also consistent with the Psychology of Working framework, which suggests that individuals who face career-related constraints will experience a reduction in agency to make a career choice (Blustein, 2006). Despite having a limited sample size of students with chronic illness ($n = 73$), it is significant that both of these measures were related to work volition, as no prior research has examined the relations between health related measures and work volition. Because career counselors often work with individuals with both physical and mental health constraints, it's very important to consider how these constraints may impact career related outcomes. Understanding the relations between health and work volition is quite valuable for career counselors who assist clients in gaining more satisfactory outcomes.

Because of the limited sample size of students with chronic illness, I was unable to make conclusions about hypothesis 1a and 1b because only students in the smaller sample completed the illness perception measure ($n = 73$ vs. $n = 81$). For this reason, I plan to continue to collect data to gain more students who qualify as having a chronic illness so that I can determine if illness perceptions has a more significant relation to work volition. Understanding the role of illness perceptions is potentially valuable to counselors and others who are often helping individuals cope with their illness related representations. Even though I cannot necessarily make conclusions based on students with chronic illness because of lack of power, it is promising to see a highly significant correlation exists between illness perceptions and work volition even in this sample.

The second hypothesis was also supported, as work volition was significantly correlated with all of the short-term career outcomes. This is consistent with the literature that shows work volition as a predictor of work meaning and academic and career satisfaction (Allan et al., 2014, Duffy et al., 2015; Jadidian & Duffy, 2012). The inclusion of academic major satisfaction was a replication of previous studies; however, three of the outcomes (leadership aspirations, educational persistence intentions, and real/ideal career discrepancy) have never been assessed in relation to work volition. The highly significant relations show support that work volition may be an important indicator of career and educational outcomes and should be considered by those who are assisting students with health-related challenges.

Hypothesis 3 was perhaps the most robust in this investigation because of the consistent relation of work volition as a mediator between unhealthy days and career-related outcomes. Although the sample size may not have been large enough to assess illness perceptions with adequate power, the mediational model aligned with expected results when considering number of unhealthy days. This indicates that health-related functional limitations (i.e., unhealthy days) are associated with decreased educational and career outcomes primarily because of their association with lowered work volition. Therefore, work volition appears to play an important role in the career development of students with health conditions. Because this association had not previously been investigated, one of the current study's important contributions is documenting the mediational relationship involving work volition.

Although not included as a hypothesis, it is important to consider the non significant association between both illness perceptions and unhealthy days and the short

term career outcomes. Illness perceptions showed non significant associations with all four of the short term career outcomes while unhealthy days showed non significant associations with leadership aspirations and educational persistence intentions. Although there may be other factors responsible in addition to work volition, work volition seems to play an important part. According to the Psychology of Working framework, people are directly affected by a number of constraints in daily life that affect their sense of agency to make career related decisions (Blustein, 2006). However, it could be argued that each person may have several constraints, but not every constraint will affect a person the same way (e.g. discrimination may play a bigger role for a person than lack of education). This means that anything that taxes a person's resources can impact their agency, and work related agency, or work volition, will be much more important than the barrier itself. It can be argued that work volition is directly affected by health-related constraints because health related concerns directly affect a person's ability to cope with various demands both in their work and personal lives. When a person anticipates barriers, especially related to health-related functioning, they may preclude a number of options leading to reduced job satisfaction, lowered aspirations, and career compromise. Arguably, when health challenges increase and work volition decreases, there can be repercussions in a person's career. When considering the associations between both of the health related measures and the career related outcomes, it's possible that individuals can be impacted by health limitations or appraisals, but not actually become vocationally impacted until their work volition is impacted.

Practical Implications

As greater numbers of students are reporting both mental and physical health symptoms, it's important to think of functional impairment on a spectrum so that adequate supports and programming can be offered (Herts et al., 2014; Royster & Marshall, 2008; Schindler & Kientz, 2013). It is promising that health is related to work volition because it can serve as a first step for career counseling assessment. Because both health-related domains were related to work volition, career counselors should have a foundational understanding that a student with chronic health concerns may face a lowered sense of agency in making a career choice due to their illness related constraints. These students may seek career counseling; however they also may compromise their aspirations or discount viable career options because of health status without exploring potential resources, accommodations, or supports that could be implemented. Conversely, career counselors or other higher education professionals may not be aware of the unique challenges of this population and may discount potential options as well. Career counselors can help these students assess options and determine if accommodations, education, and support can be offered.

Because work volition was highly related to all our career outcomes, it is an important point to consider in career counseling. Historically, career counseling theories have been designated to individuals who have a high level of choice in their career decision-making (Blustein, 2006). My study indicates that students with chronic health concerns, or simply students who face unhealthy days due to stress, are at risk for lowered career outcomes because they may have less agency in making career choices. It is promising that work volition has a role as a mediator because it is can be an excellent

intervention point. Because work volition was related to all the career outcomes and the health measures were not, it is primarily important to focus on work volition in all students rather than just students with chronic health concerns. Jadidian and Duffy (2012) explain that those with work volition may fare better in terms of vocational outcomes due to an increased experience of work related control. Although there aren't any documented interventions that target work volition specifically, enhancing a sense of work related control may be especially pertinent for students with health conditions who endorse a lower sense of work volition. This study provides support for the idea that career counselors should focus on work volition regardless of what barriers a student may face.

Career counselors can bolster students' work volition and assess if work volition is responsible for lowered aspirations or real/ideal career discrepancy. Holland's theory (1997) and the Theory of Work Adjustment are still relevant because students who face these challenges still will have greater outcomes when their majors and careers are congruent with their personalities and values, they just may not know that it is possible for them. Counselors can take a detailed history to determine how illness perceptions are impacting a clients work volition and if functional limitations are impacting basic ability to attend to higher education. Beatty and Joffe (2006) suggest that understanding health related limitations can be both positive and negative as students should set realistic expectations in the face of limitations. However they also shouldn't completely compromise without discussing and exploring options that are interesting to them. Career counselors should remain realistic for whatever limitations a student has; however they also should acknowledge strengths, abilities, and agency that a student does possess.

Limitations and Future Research Directions

There are some limitations to this study due to the nature of the sample. The sample was limited due to a smaller number of students with chronic health conditions ($n = 73$; 20%) than anticipated. Because of this, there would have been a lack of power for the regression analyses if the illness perception measure had been included, which limited the ability to make conclusions about students with chronic health conditions when separated from the larger sample. Although we can see clear patterns in these data in regards to the unhealthy days measure, it will be necessary to have a larger sample of students with significant health conditions in order to gain more insight into how work volition operates with perceptions of their illness to affect short-term career-related outcomes. According to Cohen (1992), I would have had enough in the sample ($N=73$) to detect large correlations at the .05 level, but I would have needed 85 and 783 to detect medium and small correlations, respectively. I plan to continue collecting data in order to gain a more robust sample that could present opportunities for publication. These data would most likely provide valuable information for the scientific community.

Second, although this study provided interesting results especially in regards to the mediation, we do not necessarily know if intentions about career and educational decisions correspond to actual career choices. Although we can see relations in these data, we do not necessarily know the role that health or chronic disease plays in short- or long-term career decision-making. Future research should explore health's impact on career decision-making in a longitudinal format considering barriers and nuances in career compromise. Also, future research may be needed to extrapolate differences between physical and mental illness. As mentioned previously, I plan to continue

collecting data to assess if the illness perception measure had limited power due to sample size.

In addition, a limitation of this research is that the health related measures (illness perceptions and unhealthy days) are limited in their information about health. Future research could explore more in depth information on the health of both students with and without chronic health conditions. One measure that could be implemented in future research is the Health Conditions Index (HCI) which is a comprehensive yes/no checklist of physical symptoms including headaches and difficulties with sleep (Broadman, Erdman, Lorge, Wolff, 1949).

Third, the career discrepancy measure was a simple dichotomous variable, and it could be improved to consider the nuance of career discrepancy. Little is known about the nature of career discrepancy as no measures had been developed prior to this year (Creed & Hood, 2015). Because career-related discrepancy and the related construct of career compromise has been cited as an important aspect of working with unpredictability of chronic illness, future research should explore this further (Beatty, 2012). A future study could explore the recent Career Goal Discrepancy scale in order to assess the nature of career discrepancy for college students with chronic health concerns (Creed & Hood, 2015). This scale is especially appropriate because it explores discrepancy in relation to achievement, effort, standards, and abilities (Creed & Hood, 2015). These researchers have tested the scale in young adults, which makes this measure especially promising for college students with chronic mental and physical health concerns.

Similar to past researchers exploring work volition, this study may have limited generalizability because the total sample was recruited from one university and may not

be representative across higher education institutions (Duffy et al., 2013; Jadidian & Duffy, 2012). Future studies could also explore these dimensions in a larger sample that is inclusive of two- year, four-year, and post-baccalaureate educational settings. Although our sample is fairly diverse, it's also important to consider the diversity related implications on work volition. Because the sample was largely female, future research should explore gender diversity more closely in order to assess if gender related variables are salient.

Conclusions

This study explored the relation of work volition and career outcomes in students who face health related challenges. Although I had limited ability to detect the relation in students with chronic health conditions, work volition did play an important part in the mediational model when considering unhealthy days and short-term career outcomes. Because of this, career counselors and related professionals should explore health-related constraints with their clients and assess work volition in relation to persistence, aspirations, and career choice. Because mental and physical health disorders are quite prevalent for college students, work volition can be an intervention point in career counseling. It also should be considered when developing plans for college students in order to maintain as much of a match between real and ideal as possible.

REFERENCES

- Allan, B. a., Autin, K. L., & Duffy, R. D. (2013). Examining social class and work meaning within the psychology of working framework. *Journal of Career Assessment, 22*, 543–561. doi: 10.1177/1069072713514811
- Allen, J., & Robbins, S. B. (2008). Prediction of college major persistence based on vocational interests, academic preparation, and first-year academic performance. *Research in Higher Education, 49*, 62–79. doi: 10.1007/s11162-007-9064-5
- Beatty, J. E. (2012). Career barriers experienced by people with chronic illness: A U.S. study. *Employee Responsibilities and Rights Journal, 24*, 91–110. doi: 10.1007/s10672-011-9177-z
- Beatty, J. E., & Joffe, R. (2006). An overlooked dimension of diversity: The career effects of chronic illness. *Organizational Dynamics, 35*, 182–195. doi: 10.1016/j.orgdyn.2006.03.006
- Blum, R. W. (1995). Transition to adult health care: Setting the stage. *Journal of Adolescent Health, 17*, 3-5.
- Blustein, D. (2006). *The psychology of working: A new perspective for career development, counseling, and public policy*. New Jersey: Routledge.

- Blustein, D. L., Kenna, a. C., Gill, N., & DeVoy, J. E. (2008). The psychology of working: A new framework for counseling practice and public policy. *The Career Development Quarterly*, 56, 294–309. doi: 10.1002/j.2161-0045.2008.tb00095.x
- Blustein, D. L. (2001). Extending the reach of vocational psychology: Toward an inclusive and integrative psychology of working. *Journal of Vocational Behavior*, 59(2), 171–182. doi: 10.1006/jvbe.2001.1823
- Broadbent, E., Petrie, K. J., Main, J., & Weinman, J. (2006). The brief illness perception questionnaire. *Journal of Psychosomatic Research*, 60, 631–637. doi: 10.1016/j.jpsychores.2005.10.020
- Brodman, K. A., Erdman, Jr., J., Lorge, I., & Wolff, H. G. (1949). The Cornell medical index. *Journal of the American Medical Association*, 140, 530–534.
- Cohen, J. (1992). A power primer. *Psychological Primer*, 112, 155-159.
- Creed, P. a., & Hood, M. (2014). The Development and initial validation of a scale to assess career goal discrepancies. *Journal of Career Assessment*, 23(2), 1–10. doi: 10.1177/1069072714535175
- Donohue, R. (2006). Person-environment congruence in relation to career change and career persistence. *Journal of Vocational Behavior*, 68, 504–515. doi: 10.1016/j.jvb.2005.11.002

- Duffy, R. D., Bott, E. M., Allan, B. A., & Autin, K. L. (2013). Exploring the role of work volition within social cognitive career theory. *Journal of Career Assessment*, 1–14. doi: 10.1177/1069072713498576
- Duffy, R. D., Bott, E. M., Torrey, C. L., & Webster, G. W. (2012). Work volition as a critical moderator in the prediction of job satisfaction. *Journal of Career Assessment*, 21, 20–31. doi: 10.1177/1069072712453831
- Duffy, R. D., Jadidian, a., Douglass, R. P., & Allan, B. a. (2015). Work volition among U.S. veterans: Locus of control as a mediator. *The Counseling Psychologist*, 43, 853–878. doi: 10.1177/0011000015576800
- Duffy, R. D., Douglass, R. P., & Autin, K. L. (2015). Career adaptability and academic satisfaction: Examining work volition and self efficacy as mediators. *Journal of Vocational Behavior*, 90, 46–54. doi: 10.1016/j.jvb.2015.07.007
- Duffy, R. D., Diemer, M. a., Perry, J. C., Laurenzi, C., & Torrey, C. L. (2012). The construction and initial validation of the work volition scale. *Journal of Vocational Behavior*, 80, 400–411. doi: 10.1016/j.jvb.2011.04.002
- Duffy, R.D., Diemer, M.A., Jadidian, A. (2012). The development and initial validation of the work volition scale-student version. *The Counseling Psychologist*, 40, 291-319.

- Edelman, A., Schuyler, V. E., & White, P. H. (1998). Maximizing success for young adults with chronic health-related illnesses: Transition planning for education after high school. *American Council on Education*, 2-12.
- Gledhill, J, Rangel, L, Garralda, E., Surviving chronic physical illness: psychosocial outcome in adult life. *Archives of Disease in Childhood*. 2000; 83:104-110.
- Gregor, M. A., & O'Brien, K. M. (2015). The changing face of psychology: Leadership aspirations of female doctoral students. *The Counseling Psychologist*, 43, 1090–1113. doi: 10.1177/0011000015608949
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press
- Henderson, C. (1999). College freshmen with disabilities, 1999: A biennial statistical profile. Statistical Year 1998.
- Herts, K. L., Wallis, E., & Maslow, G. (2014). College freshmen with chronic illness: A comparison with healthy first-year students. *Journal of College Student Development*, 55, 475–480. doi: 10.1353/csd.2014.0052
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments*. Psychological Assessment Resources.

- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55. doi: 10.1080/10705519909540118
- Jadidian, A., & Duffy, R. D. (2012). Work volition, career decision self-efficacy, and academic satisfaction: An examination of mediators and moderators. *Journal of Career Assessment, 20*, 154–165. doi: 10.1177/1069072711420851
- Kessler, R., Foster, C., Saunders, W., Stang, P. (1995). Social consequences of psychiatric disorders, I: Educational attainment. *American Journal of Psychiatry, 152*, 1026–1032.
- Kessler R. C., Chiu W. T., Demler, O., Walters E. E. (2005) Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry, 62*, 617–627.
- Levanthal, H. & Diefenbach, M. (1991) The active side of illness cognition In J. A. Skelton and R. T. Croyle (Eds) *Mental Representation in Health and Illness*. New York: Springer Verlag.
- Maslow, G., Haydon, A. A., Mcree, A. L., & Halpern, C. T. (2012). Protective connections and educational attainment among young adults with childhood-onset chronic illness. *Journal of School Health, 82*, 364–370. doi: 10.1111/j.1746-1561.2012.00710.x

- Maslow, G. R., Haydon, A., McRee, A. L., Ford, C. A., & Halpern, C. T. (2011). Growing up with a chronic illness: Social success, educational/vocational distress. *Journal of Adolescent Health, 49*, 206-212.
- Moss-Morris, R., Weinman, J., Petrie, K., Horne, R., Cameron, L., & Buick, D. (2002). The revised illness perception questionnaire (IPQ-R), *17*, 1–16. doi: 10.1080/08870440290001494
- Munir, F., Leka, S., & Griffiths, A. (2005). Dealing with self-management of chronic illness at work: Predictors for self-disclosure. *Social Science and Medicine, 60*, 1397–1407. doi: 10.1016/j.socscimed.2004.07.012
- Munir, F., Yarker, J., Haslam, C., Long, H., Leka, S., Griffiths, A., & Cox, S. (2007). Work factors related to psychological and health-related distress among employees with chronic illnesses. *Journal of Occupational Rehabilitation, 17*, 259–277. doi: 10.1007/s10926-007-9074-3
- Munir, F., Yarker, J., & Haslam, C. (2008). Sickness absence management: encouraging attendance or “risk-taking” presenteeism in employees with chronic illness? *Disability and Rehabilitation, 30*, 1461–1472. doi: 10.1080/09638280701637380
- Nauta, M. M. (2007). Assessing college Students’ satisfaction with their academic majors. *Journal of Career Assessment, 15*, 446–462. doi: 10.1177/1069072707305762

- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717-731. doi: 10.3758/BF03206553
- Royster, L., & Marshall, O. (2008). The chronic illness initiative: Supporting college students with chronic illness needs at DePaul University. *Journal of Postsecondary Education and Disability*, 20, 120-125.
- Schindler, V. P., & Kientz, M. (2013). Supports and barriers to higher education and employment for individuals diagnosed with mental illness. *Journal of Vocational Rehabilitation*, 39, 29-41. doi: 10.3233/JVR-130640
- Stewart-Brown, S., Evans, J., Patterson, J., Petersen, S., Doll, H., Balding, J., & Regis, D. (2000). The health of students in institutes of higher education: An important and neglected public health problem? *Journal of Public Health Medicine*, 22, 492-499. doi: 10.1093/pubmed/22.4.492
- Tracey, T. J. G., & Robbins, S. B. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior*, 69, 64-89. doi: 10.1016/j.jvb.2005.11.003
- Weinman, J., Petrie, K., Moss-Morris, R., & Horne, R. (1996). The illness perception questionnaire: A new method for assessing the cognitive representation of illness, 11. doi: 10.1080/08870449608400270