Self-Determination Theory as a Model for Vocational Rehabilitation Engagement for Transition-Aged Young Adult Consumers

By

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A dissertation submitted in partial fulfillment of the requirements of the degree of

Doctor of Philosophy

(Rehabilitation Psychology)

at the

UNIVERSITY OF WISCONSIN-MADISON

2017

Date of final oral examination: 07/17/2017

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DEDICATION

I dedicate this to my family. Without the unwavering and unconditional support from my parents, I would not be where I am today, or became the man that I am.

ACKNOWLEGEMENTS

This work would not have been possible if not for the thoughtful support and guidance of the faculty at UW – Madison. My advisor, Dr. Tansey was always available and supportive, and acted as mentor, supporter, advisor, and sometimes cheerleader throughout my journey in my doctoral studies. I also had the privilege to take classes and work to varying degrees with my other committee members, Dr. Chan, Dr. Smedema, Dr. Phillips, and Dr. Bolt, whose passion, knowledge, and support facilitated my learning and personal growth. The collaborative learning environment within the rehabilitation department was something that enhanced and challenged my abilities, and is a testament to the vision and mission of those at UW – Madison, a legacy supported by all faculty. This experience was the most challenging endeavor of my life, and it has highlighted who I am as a person, as well as who I want to be, and what I want my mark to be on the world.

In addition, my doctoral peers have been an unrelenting support, normalized the challenges and academic rigor, assisted, and of course been a shoulder to lean on (sometimes literally). I look forward to a bright and productive future writing, researching, and collaborating with many of you. I would especially like to thank Derek Ruiz and Kerry Thompson for bringing stability and friendship during some of the hardest times.

Lastly, I would like to thank the faculty at San Diego State University that believed in me, instilled the rehabilitation spirit, and laid the groundwork for my doctoral studies. Dr. Sax, Dr. McFarlane, Dr. Degeneffe, Dr. Hampton, Dr. Tucker, Dr. Compton, and Dr. Olney, thank you all so much. The quality of the department both guided and empowered me to pursue bigger and better things in the field. Also, thanks to Dr. Glunt, who has played a huge role in how I see the world as an academic and researcher. Your supervision, attentiveness to questions,

cultivating my curiosity, and shared experiences in research and organizational design gave me invaluable experience and tools to “connect the dots.”

ABSTRACT

The purpose of this study was to examine the predictive ability of a self-determination theory framework as an engagement model for transition-aged young adults (TAYA) with disabilities accessing public vocational rehabilitation services. Participants completed an online survey with demographic questions, self-determination constructs, and vocational rehabilitation (VR) engagement. Data analysis utilized correlations, multiple regression analysis, and mediator and moderator analyses. The findings of this study provided support for self-determination theory model in predicting positive engagement in VR. The hierarchical regression analysis accounted for 48% of the variance in VR engagement. Autonomy mediated the relationship between functional disability and VR engagement. Results of the study provide empirical evidence supporting the predictive validity of a self-determination model for transition-aged young adults' levels of engagement in state-federal VR services. Future research could validate the model based on other outcome measures relevant to TAYA postsecondary outcomes (e.g. work, levels of independent living, life satisfaction, quality of life) and investigate clinical interventions aimed at improving VR engagement based on the preliminary findings of the present study.

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CHAPTER ONE
Introduction

Work is a major life activity that is a source of self-esteem for millions of Americans; in fact, many adults consider employment a central component of their lives (Levinson & Palmer, 2005). Employment is essential to sustained economic independence and associations have been found with higher levels of self-esteem and other positive outcomes (Lehman, Greener, & Simpson, 2002; Polak & Warner, 1996). Although transition-aged young adults (TAYA) with disabilities demonstrate high life aspirations on par with those without disabilities (Burchardt, 2004), they face poorer expected outcomes as they confront additional marginalizing barriers that compound the functional implications of disability. These factors that can act as roadblocks for TAYA include: living in a rural community (Blumling, Thomas, & Stephens, 2013; Povee, Roberts, Bourke, & Leonard, 2012; Rabren, Dunn, & Chambers, 2002), being in foster care or exiting the foster system (Manteuffel, Stephens, Sondheimer, & Fisher, 2008), receiving Temporary Assistance for Needy Families or supplemental security income (Nadel, Wamhoff, & Wiseman, 2003; Office of Disability Employment Policy, 2015), being a cultural or ethnic minority and facing poverty (Abidi & Sharma, 2014; Brand, Alston, & Harley, 2012), exposure to violence in the community (Wright & Fitzpatrick, 2006), and/or having significant or multiple disabilities (Fitzgibbon, Cook, & Falcon, 2000).

There are an estimated 60 million ethnically and culturally diverse TAYA in the United States, yet estimates of workforce participation for TAYA are significantly lower (Blum & Qureshi, 2011), with teens and young adults with disabilities 1.2 to 1.5 times less likely to obtain employment (Fogg, Harrington, & McMahon, 2010). One study found that African American youth with disabilities were less likely to obtain employment two years after high school graduation compared to their white counterparts (Wagner, Newman, Cameto, Garza, & Levine,

2005). Similarly, low socioeconomic status (SES) and the experience of poverty are associated with poorer adult outcomes in access to post-secondary education, independent living, and vocational achievement (Lustig & Strauser, 2004, 2007). Societal barriers can also include stigma and lack of viable service options, limited social support (Chronister, Chou, Frain, & Cardoso, 2008), or negative parental expectations (Wagner, Newman, Cameto, Levine, & Marder, 2007; Zhan, 2006), and poverty which impacts future employment (Abidi & Sharma, 2014; Brand et al., 2012).

Approximately one in eight children has a limitation in an essential activity such as moving, self-care, communicating, or learning, while almost one in five has special healthcare needs (Msall, Bobis, & Field, 2006). Starting in childhood, these functional limitations can exert significant influence on TAYA. This was partly driven by findings that TAYA face challenges when navigating from adolescence to adult life-roles (Davis & Vander Stoep, 1997; Manteuffel et al., 2008). The various barriers faced by TAYA have been a topic of considerable discussion in special education, rehabilitation counseling, and public policy (Hill, Lightfoot, & Kimball, 2010; Manteuffel et al., 2008; Office of Disability Employment Policy, 2015).

Despite many opportunities for education and employment in the United States, opportunities are not equally accessible to all youth (Blustein et al., 2002; Metz & Guichard, 2009). A notable legislative effort seeking to support TAYA are the numerous updates to the Workforce Innovation Act enacted by the Workforce Innovation and Opportunity Act (WIOA). The WIOA has now mandated VR agencies to disburse a minimum of 15% of their funds on pre-employment transition services. This change essentially earmarks federal funds going to VR for transition-related activities, as an attempt to meet the ongoing needs of TAYA. These pre-employment transition services can include counseling for job exploration or post-secondary

education, work-related learning experiences in integrated environments, workplace readiness training, and instruction in self-advocacy (Workforce Innovation and Opportunity Act, 2014). These changes represent an important opportunity for developing and understanding the ways in which TAYA engage with the VR system, while conversely developing evidence-based practices that could impact WIOA as a national guideline developed to better serve youth.

Transition from Education to Employment

Research has identified education as a particularly important element in increasing employment or other positive adult outcomes for TAYA with disabilities (Madaus, Lalor, Gelbar, & Kowitt, 2014; Wagner et al., 2005). Limitations in education, particularly postsecondary education, can affect their ability to secure competitive employment, make future career advancements, or to realize a high quality of life (Dutta, Scguri-Geist, & Kundu, 2009). TAYA are also less likely to seek out and enroll in postsecondary programs than their nondisabled counterparts (U.S. Department of Education National Center for Education Statistics, 2010), and lifetime earnings of a high school graduate with a disability are approximately one million dollars less than a person without a disability (U.S. Department of Labor, 2012). Young people who drop out of secondary education have an average life expectancy nine years shorter compared to peers who graduate high-school (Levin, 2005).

Another crucial barrier faced by TAYA is the development of appropriate everyday social skills. Many young people with disabilities may face barriers that limit participation in social situations (Murray & Doren, 2012). The source of poor social skills were attributed to both environmental (e.g. lack of access, limited practice) and disability-related characteristics. The development of social skills was associated with positive post-secondary outcomes such as pursuit of additional education and greater likelihood of pursuing and maintaining employment

(Carter, Trainor, Ditchman, & Owens, 2011; Carter, Trainor, Ditchman, Swedeen, & Owens, 2011).

In addition to limitations in social skills, TAYA with intellectual and developmental disabilities face limited post-school opportunities, despite intrinsic or extrinsic motivations to enter the workforce (O'Brien & Daggett, 2006; Schall, Cortijo-Doval, Targett, & Wehman, 2006). Like other groups of people with disabilities, access to postsecondary education for those with intellectual or cognitive disabilities is a critical means to obtain competitive employment. Research has highlighted a positive association between employment outcomes of TAYA and adults with disabilities who attend postsecondary programs compared to those who did not (Moore & Schelling, 2015).

There is also evidence that school-based work experience programs may have little or no positive relationship with post-school employment for TAYA, with some researchers erroneously inferring that school-based work experience would be equally efficacious as real work experiences. Research has demonstrated that real-world work experience while still in school more likely leads to positive outcomes (Luecking & Gramlich, 2003). In many instances, school-based experiences tend to pay sub-minimum wage and are limited in relating to real-world work experiences. In addition, federal support of programs utilizing sub-minimum wage jobs in transition services or planning has been further minimized by recent changes mandated through WIOA legislation (2014). This finding highlights the importance of VR services for TAYA, particularly in assisting consumers finding real-world competitive employment in an integrated setting, which can include everything from high school temporary work experiences to careers coming out of postsecondary educational training. Despite the importance of work experiences in community settings, VR has struggled to engage and motivate youth.

The present study seeks to determine how motivation, self-determination, and youth personal, environmental, and disability related factors are related to engagement in VR services.

Role of Vocational Rehabilitation

The state-federal vocational rehabilitation (VR) program has a major role in assisting consumers in achieving positive psychosocial and vocational outcomes (Ditchman et al., 2014; Wehman, Chan, Ditchman, & Kang, 2014), including TAYA with disabilities. The state-federal VR programs are mandated to assist eligible consumers with services to support or enhance employment and independent living goals (Dean, Pepper, Schmidt, & Stern, 2013; Martin, West-Evans, & Connelly, 2010).

Of all consumers found eligible, about half who receive VR services obtain gainful employment in an integrated setting (Dutta, Gervey, Chan, Chou, & Ditchman, 2008). Despite these favorable employment findings achieved by consumers of VR programs, there exist several fundamental challenges to sustained engagement in work and overall societal participation faced by youth with disabilities.

Challenges Reaching Positive Outcomes in VR

Consumer success within state-federal VR services is impacted by several factors. For instance, the approach and services of VR agencies, consumer motivation, counselor/consumer working alliance and the life context faced by the VR consumer can all affect employment success before exiting the VR system (Donnell, Lustig, & Strauser, 2004; Kukla & Bond, 2009; Leahy, Chan, & Lui, 2014; Lustig, Strauser, Rice, & Rucker, 2002; Solomon, Draine, & Delaney, 1995; Strauser & Berven, 2006). Vocational rehabilitation professionals are mandated to provide consumers of VR services with effective interventions. The effectiveness of vocational and psychosocial services has the potential for enhancement when evidence-based

practices are integrated with consumers' perspectives regarding their abilities and career interests (Chan, Tarvydas, Blalock, Strauser, & Atkins, 2009; Leahy, Thielsen, Millington, Austin, & Fleming, 2009).

Rehabilitation providers can also be a barrier to improving consumer access to competitive employment, especially when they lack specialized training in competitive employment strategies and other factors that could readily assist TAYA (Brooks-Lane, Hutcheson, & Revell, 2005). For youth with mental illness, there is no system or agency primarily responsible for assisting in the transition from adolescent roles to those of adulthood. Although youth and young adults who experience mental illness may receive services, such as special education, child welfare, or juvenile justice (Mallett, 2009), these services do not foster empowerment or self-determination. In early adulthood, these youth age out of the youth services and are often ignored or neglected in the transition to adulthood (Davis & Vander Stoep, 1997), and they may not enter VR services, or may be waitlisted for programs that are operating under an order of selection.

Another factor that challenges TAYA in VR services is a general underutilization of the services by eligible consumers. Many TAYA do not receive specialty services despite the availability in their respective area. Underutilization could be due to lack of knowledge of transition or VR programs or services, a dilemma that may be exacerbated in low SES neighborhoods, or by stigma associated disability status. Furthermore, negative word of mouth in cultural communities or dissatisfaction based on real or perceived service impairments could also prevent youth from receiving services (U.S. Department of Health and Human Services, 1999).

Regarding social supports, many TAYA may also lack the personal connections and friendships necessary to manage health needs, and thus may have poorer health outcomes. Research has also suggested that TAYA are more likely to be living separately from their family unit or guardian and thus need additional support that is rarely provided (Davis & Vander Stoep, 1996).

Not all research has highlighted the negative troubling aspects of transition. Data from National Longitudinal Transition Study-2 (NLTS-2; 2009) has shown a 21% improvement in post-secondary education attendance for students with disabilities who completed high school (Newman et al., 2011). Research has also demonstrated that motivation is a crucial factor relating to positive employment outcomes (Thomas, Thoreson, Parker, & Butler, 1998).

Supporting consumer engagement in VR services is critical to successful transition and rehabilitation. The present study represented a heterogeneous sample of young people engaged in VR services, while also investigating the roles of contextual factors experienced by TAYA in VR, by investigating both personal and environmental factors that may impact VR engagement.

Personal and Environmental Factors

Receiving benefits from VR is a primary factor that has the power to support, or undermine, positive outcomes for TAYA. However, other factors including individual disposition and the environment can also exert substantial influence. Borrowing from the International Classification of Functioning Disability and Health (ICF) model, primary disability is not simply conceptualized by the loss or functional implication of disability. Disability is understood as the interaction of health conditions impairments in the function and structure of the body, alongside the interaction of individual characteristics (e.g. personality, disposition) and the social/environmental context of daily life such as social support or socioeconomic status

(World Health Organization [WHO], 2001). Literature regarding TAYA has focused on contextual factors including the presence of co-occurring serious mental illness or mental health concerns, poverty and low SES, levels, and quality of social support, as well as parental expectations relating to postsecondary outcomes (Chronister et al., 2008; Deci, Koestner, & Ryan, 1999; Kahn, 2014; Parker, Bindl, & Strauss, 2010; Sadri & Robertson, 1993; Strauser & Berven, 2006). The personal and environmental factors fundamentally impacting the level of functional disability is a way of understanding the intersectional challenges faced by TAYA who constitute multiple minority identities, wherein the barriers are multiplied, not simply additive (McCall, 2005).

Mental health. As previously mentioned, TAYA with severe mental illness face a multitude of challenges when transitioning from the secondary educational systems to adult roles (Carson, Sitlington, & Frank, 1995; Davis & Vander Stoep, 1997). These findings are highlighted by statistics showing that over 60 percent of TAYA with serious mental health disabilities do not complete high school. These youths often have poor adult outcomes such as unemployment, not pursuing adult educational opportunities, and not developing other skills necessary for independent living (Davis & Vander Stoep, 1997; Hagner, Cheney, & Malloy, 1999).

Transition-age youth with serious mental illness experience higher rates of substance abuse than any other age groups living with mental illness (U.S. Department of Health and Human Services, 1999). Scholars have estimated that over three million TAYA have been diagnosed with a serious mental illness (Vander Stoep et al., 2000). Among adult TAYA, age 18 to 25, the estimated rates of illicit drug use had increased through years 2002 to 2008 (Substance Abuse and Mental Health Services Administration, 2014). In addition, approximately 12% of all

youth experience a mental health problem significant enough to require at least short-term special services or treatment during adolescence (Podmostko, 2007). Of these, around 20 percent of TAYA who have received treatment for mental health or behavioral problems experienced suicidal ideation, or have attempted suicide. Of these young people, less than 40 percent receive any kind of formal treatment or intervention. In addition, suicide is the third leading cause of death among 15 to 24 year olds (Centers for Disease Control and Prevention, 2011), for which youth with mental health or behavioral disabilities are disproportionately affected.

Poverty. The experience of poverty occurring alongside disability has been highly researched in global literature (Atkins & Guisti, 2004; Braithwaite & Mont, 2008; Mor, 2011; Pokempner & Roberts, 2001; Yeo & Moore., 2003). Scholars largely agree on an approach "overlapping" each barrier in understanding the intersection of poverty and disability, an assertion that is largely accepted among disability and poverty activists, as well as policymakers (Mor, 2011). This framework for understanding disability and poverty elucidates both the disproportionate levels of poverty experienced by people with disabilities, as well as the fact that disability status is disproportionately high for those who live in poverty. Other research has used poverty as an indicator to other variables that increase the risk of experiencing disability, the intersection of which has been suggested to influence the expression of disability in the United States (Pokempner & Roberts, 2001).

In the United States, the percentage of individuals with disabilities living at or below the federal poverty level is disproportionately high, compared to peers without disabilities (Lustig & Strauser, 2007). In addition, people with disabilities experience an increased likelihood of living at or below the poverty level worldwide (Braithwaite & Mont, 2008). The U.S. Census Bureau

estimates that individuals with disabilities are about 50 percent more likely to live in poverty than those without disabilities (2010). This fundamental connection of poverty to disability has been highlighted by the United Nations Convention on the Rights of Persons with Disabilities, which highlights the ways in which disability and poverty can change psychosocial understandings of disability alone (Ribet, 2014; Seelman & Sweeney, 1995).

In addition, poverty significantly increases risks for suboptimal health, developmental and behavioral outcomes for children, especially in children not yet attending school. There is a general trend in the literature demonstrating that rates of child disability are increasing starkly amidst those who are economically disadvantaged, or of low SES (Martin, 2007b; Msall et al., 2006; Tamborini, Cupito, & Shoffner, 2011).

Parent and family expectations. The role of the family is paramount to the short- and long-term employment outcomes for TAYA with disabilities, and this relationship is further impaired when the family experiences poverty (Test, Mazzotti, et al., 2009). Transition-aged youth with disabilities who are lower SES may also experience lower familial and community expectations for pursuing postsecondary education (Madaus, Grigal, & Hughes, 2014). Similarly, SES has been demonstrated to be a significant predictor of parental future education and vocational expectations for their children (Zhan, 2006). Both youth and adults of lower SES are less likely to participate in community events and thus may experience isolation. These combined factors can make service utilization (e.g. VR, transition services) more challenging (Heinrichs, Bertram, Kuschel, & Hahlweg, 2005).

Low parental expectations can be especially problematic for youth with cognitive or intellectual disabilities and students with significant multiple disabilities. Racial and ethnic minorities may also face additional limitations in parental expectations. African-American and

Hispanic students with disabilities remain underrepresented compared to the general population of students with disabilities who are Caucasian. The intersection of race, disability, and lower SES can result in substantial barriers to accessing higher transition and education supports (Madaus, Lalor, et al., 2014). By elucidating the role of environmental factors (i.e. race/ethnicity and SES) the present study has the potential to identify factors impacting the motivation and engagement in VR services.

Social support. Empirical evidence on the role of social support has highlighted the importance of these supports in mitigating or preventing chronic illness of disability, and is overall positively associated with health and wellbeing (Barrera, 1986; Chronister et al., 2008; Schwarzer & Leppin, 1992). Within the field of rehabilitation, there is growing evidence that social support is positively associated with positive outcomes, including: adjustment to disability (Evers, Kraaimaat, Geenen, Jacobs, & Bijlsma, 2002), positive health outcomes and compliance (Kaplan, Hartwell, Wilson, & Wallace, 1987), self-esteem and optimism (Symister & Friend, 2003), as well as general wellbeing (Rintala, Young, Hart, Clearman, & Fuhrer, 1992) in various types of disabilities. A 2008 meta-analysis looking at social support within the field of rehabilitation found that social support had a strong association with psychological and life satisfaction outcomes (Chronister et al., 2008). Regarding TAYA, there is little empirical evidence regarding perceived social support and overall academic outcomes. Much of the evidence has targeted other aspects of the social environment, such as parental expectations as discussed previously. The present study would seek to capture the role of social support in a robust model predicting engagement in VR. Findings can be of clinical relevance for VR counselors and other transition partners in understanding and developing more robust social

supports.

Consumer Engagement Predicting Positive Outcomes

Vocational Rehabilitation programs also face significant challenges in the outreach and engagement of vulnerable populations such as low-income TAYA. These challenges include: (a) competing priorities regarding possible outcomes; (b) additional life stressors associated with poverty; (c) lack of resources necessary to using services (transportation, housing, lack of literacy); (d) mistrust of programs or government services; (e) or misunderstanding benefits of services or not immediately realizing the benefits of participating (Anastasi, Capili, Kim, & Chung, 2005; Anderson & Hatton, 2000; Schnirer & Stack-Cutler, 2012). For many young adults with disabilities, access to VR and other government or nonprofit services can be an essential part in the achievement of positive outcomes including, but not limited to competitive employment. Cultural and ethnic minorities also face significant barriers at the intersection of poverty and minority status. For instance, African American youth face difficulties with accessing transition supports that can be traced directly back to inequalities in transition programming (Banks, 2014).

The aforementioned limitations can limit the ability of VR services to fully engage TAYA in services. Understanding how poverty and SES impact TAYA engagement, and how motivation to work within the federal-state VR system alongside other transition partners and programs represents an important contribution of the present research. Within rehabilitation and related literature, employment is a common theme, often utilized as an ideal outcome measure by both public VR and researchers. Although quality of life and other objective and subjective measures (i.e. well-being) have been increasingly studied as positive outcomes, employment remains at the forefront as an exemplar outcome measurement. There is mounting evidence that

active engagement relates to positive health outcomes and mitigation of costs (Hibbard & Greene, 2013a; Hibbard, Stockard, Mahoney, & Tusler, 2004). Other research highlights that client/consumer satisfaction is increasingly posited as a powerful determinant of positive outcomes in various rehabilitation and educational settings (Wehmeyer & Abery, 2013; Wild, Cunningham, & Ryan, 2006). Active engagement in counseling has also been studied as one of the most important determinants of positive outcomes (Beck, 1994; Wampold et al., 1997; Orlinsky, Grawe, & Parks, 1994).

Self-Determination

Within VR settings, supporting the self-determination of consumers has traditionally proven challenging, perhaps due in part to the power differentials in the counselor-consumer relationship (Emener, 1991; Greenleaf & Bryant, 2012; Hagner & Marrone, 1995; Hahn, 1991). To this end, customer satisfaction has become increasingly supported as a means of understanding success within VR systems (Capella & Turner, 2004; Hein, Lustig, & Uruk, 2005; Kosciulek, 2003; Patterson & Marks, 1992). Research has identified self-determination as a best practice in school settings as well as in youth transition to adulthood (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Fowler, Konrad, Walker, Test, & Wood, 2007; Wehmeyer et al., 2012).

Self-determination is operationalized as an umbrella concept that includes both behavioral (e.g. increasing skills, goal attainment) and affective dimensions (e.g. emotions, self-reflections). With TAYA, self-determination is most commonly conceptualized in the context of educational or other postsecondary outcomes (Mull, Sitlington, & Alper, 2001; Shriner & Destefano, 2003; Travers et al., 2014; Van Reusen & Bos, 1994; Wehmeyer, Field, & Thoma, 2014). Wehmeyer's (1999) functional model of self-determination identified components of

self-determination to support research and direct interventions. The functional components included: (a) choice/decision making; (b) problem solving; (c) goal setting and attainment; (d) self-advocacy; (e) self-efficacy; (f) self-awareness/understanding; or (g) self-observation or evaluation (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Fowler et al., 2007; Wehmeyer, 1999).

Using a self-determination framework, the VR transition service system can be understood as a way of systematically supporting or discouraging meaningful and intrinsically motivated consumer behaviors. These factors can be supported alongside other social factors, such as parent or teacher practices (Ryan & Stiller, 1991). Similarly, self-determination interventions have been identified as a crucial area of research for many TAYA with disabilities, including learning disabilities (Field, 1996; Roffman, Herzog, & Wershba-Gershon, 1994), as well as intellectual or developmental disabilities (Field & Hoffman, 1999; Nota, Ferrari, Soresi, & Wehmeyer, 2007a.

Ryan, Patrick, Deci, and Williams (2008) suggested that health and well-being were strongly influenced by health behaviors controllable by the individual. Self-determination theory recognizes these behavioral mediators of health outcomes, suggesting that practitioners attend more carefully to the individual's experience and motivation. Research into work and productivity by Parker et al. (2010) identified three motivational states through which other variables may mediate or moderate, including (a) having a compelling reason to engage (i.e. having a future goal); (b) believing they can engage (work-related self-efficacy) and (c) feeling energized or encouraged by motivated behaviors (Parker et al., 2010). For TAYA, understanding the role of motivation is critical to understanding engagement in VR services.

Self-determination theory can act as a theoretical foundation connecting the contextual factors with overall levels of motivation, engagement in VR services.

Self-determination has also been found to be associated with measures of quality of life and satisfaction with life (Lachapelle, Wehmeyer, & Walsh, 2004; Lachapelle, Wehmeyer, Haelewyck, Courbois, & et al., 2005; McDougall, Evans, & Baldwin, 2010; Nota et al., 2007a; Nota & Soresi, 2004). Research suggests that individuals with emotional/behavioral disabilities, autism, learning disabilities, and intellectual disabilities demonstrate less self-determination than their peers (Ackerman, 2006; Carter, Lane, Pierson, & Glaeser, 2006; Carter, Trainor, Owens, Sweden, & Sun, 2010; Powers, Ward, Ferris, Nelis, & et al., 2002; Seo, Wehmeyer, Palmer, & Little, 2015; Travers, Tincani, Whitby, & Boutot, 2014). It has been suggested that self-determination may, by attending to the presence or lack of supports for psychological needs, foster an understanding of the conditions in which alienation versus engagement occur (Ryan & Deci, 2000a). In short, self-determination is "relevant to parents and educators concerned with cognitive and personality development because it speaks to the conditions that promote the assimilation of both information and behavioral regulations" (Ryan & Deci, 2000b, p. 76).

By enhancing the understanding of self-determination related principles of autonomy, psychological relatedness, and competence, rehabilitation systems can promote engagement in VR and better work outcomes for TAYA. Of critical importance to assisting TAYA in achieving positive postsecondary outcomes is the use of government and other supportive services. Of particular benefit would be supporting TAYA participation in vocational rehabilitation services (Urbanoski & Wild, 2012). Self-determination has been found to be associated with postsecondary outcomes, such as employment related outcomes (Lehmann, Bassett, Sands, Spencer, & Gliner, 1999; McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer, 2003)

as well as higher degrees of independent living (Bambara & Ager, 1992; Grenwelge, 2010; Serna & Lau-Smith, 1995; Shogren, Wehmeyer, Palmer, Rifenbark, & Little, 2015; Shogren et al., 2007).

Conclusion

Recent WIOA legislative changes mandate that VR agencies to put increasing financial resources towards youth. This additional focus on youth requires organizational and programmatic changes. In serving TAYA, VR programs may need to conceptualize new ways to outreach and engage youth within the existing VR systems. This strategy needs to include traditionally underserved populations, including; racial and ethnic minorities, low SES families, recent refugees or immigrants, sexual minorities, and individuals with diverse types of disabilities. The National Council on Disability (NCD) has formally requested that the Rehabilitation Services Administration, National Institute on Disability Independent Living and Rehabilitation Research (NIDILRR), Office of Special Education and Employment (OSEP) as well as state VR agencies pursue formal research agendas that seek to identify characteristics and service needs of TAYA who are traditionally not served or underserved within the VR system (2008). There is a present urgency in the legislative climate. While WIOA mandates are being developed into policies by state VR systems, new evidence-based practices for serving youth are paramount (Honeycutt, Thompkins, Bardos, & Stern, 2015).

The present study would represent a contribution by identifying factors that motivate and engage youth in VR services to meet employment-related goals as part of a broader transition plan. Previous findings consistently highlight the important role of employment in achieving adult-life outcomes for TAYA (Brooks-Lane et al., 2005; Fogg et al., 2010; Inge, Wehman, Strobel, Powell, & Todd, 1998; Leahy et al., 2014; Luecking & Gramlich, 2003; Moore &

Schelling, 2015; Wagner et al., 2005; Wehman, Sima, et al., 2015). Understanding the role of different types, and severity of, disability to youth self-determination in the VR system can highlight areas in which continued VR supports are merited.

Research Hypothesis and Theoretical Model

The state-federal VR system can also better serve TAYA by understanding how levels of self-determination are impacted by contextual factors, including SES, community background, perceived support, and parental expectations, and how this interaction impacts the work-related goals. This complex interaction has the capacity to highlight ways in which TAYA with disabilities from historically underserved communities, as well as those traditionally served by VR, are motivated, and engaged within VR services. The perception of receiving social support and the strength and size of social networks of TAYA may also be important factors impacting self- determination of TAYA. The research questions for the present study can be found below, and the theoretical self-determination model for engagement in VR can be found in Figure 1.1.

1. Does the SDT model of youth VR engagement describe the relationship between self-determination and engagement in VR for transition-aged adults with disabilities?

   H_a: Personal and environmental factors, disability related factors, and self-determination factors are associated with vocational rehabilitation engagement in a sample of transition-aged adults with disabilities.

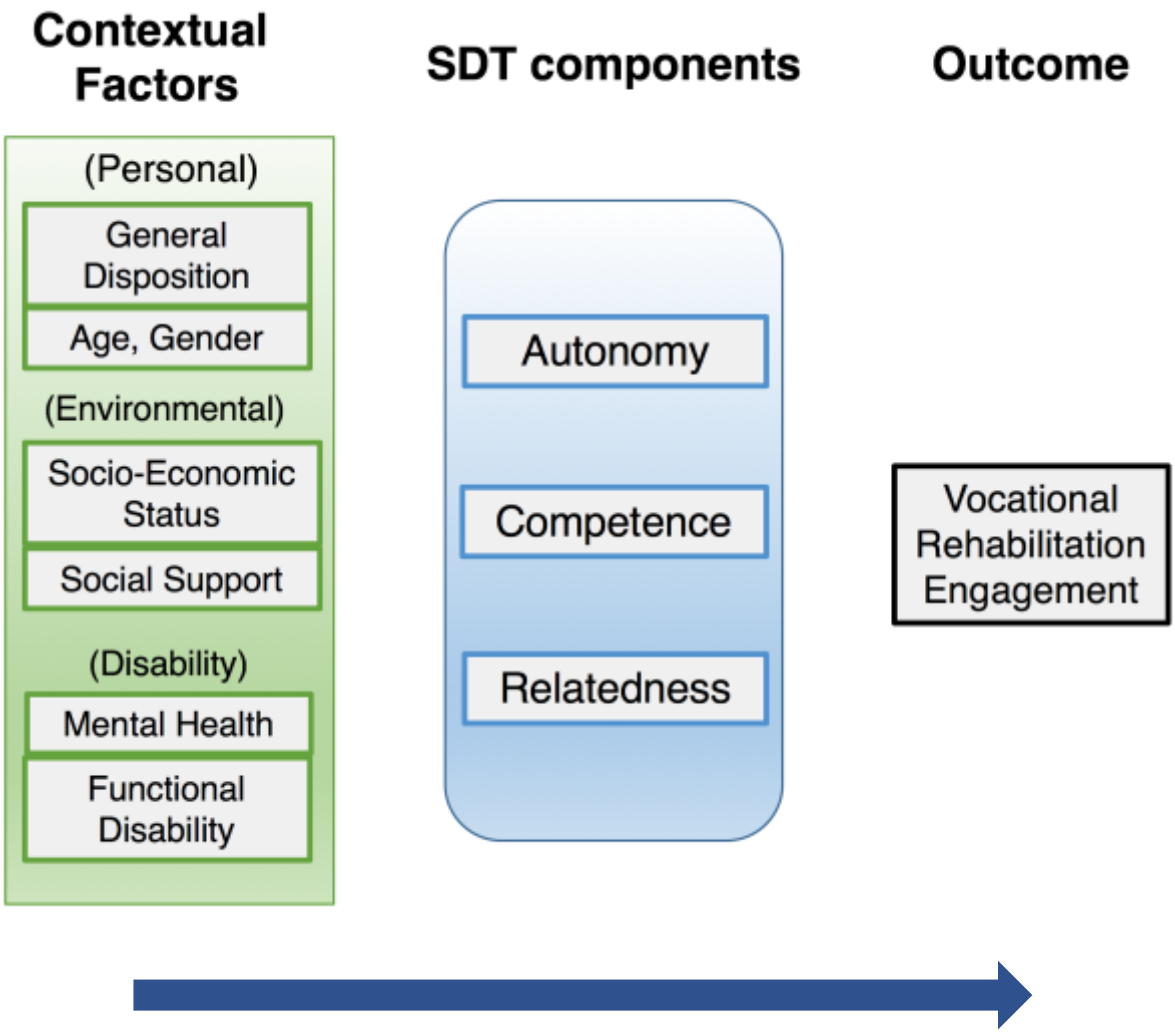
2. What is the mediational relationship between social support and functional disability in predicting engagement in VR?

   H_a: Social support will mediate the relationship between functional aspects of disability and engagement in VR.

3. What is the relationship between the self-determination construct of autonomy as it relates to functional disability and vocational rehabilitation engagement.

   H_a: Autonomy will mediate the relationship between functional disability and engagement in VR.

Figure 1.1 Self-Determination Model of Vocational Rehabilitation Engagement



CHAPTER TWO
Literature Review

Historical Background

The profession of rehabilitation counseling was legislated into existence to fill a societal need for assisting people with disabilities with employment needs (Harmon, 1976; Jenkins, Patterson, & Szymanski, 1998; Rusalem & Malikin, 1976; Verville, 1979). From its beginning as a federally legislated and largely federally funded program (Herschenson et al., 1981), the scope of rehabilitation counseling has expanded past vocational-oriented services, with rehabilitation counselors employed in a multitude of public, and to a lesser extent, private settings (Peterson & Aguiar, 2004). The professionalization of rehabilitation counseling was facilitated through leadership seeking to enhance the lives of people with disabilities through Vocational Rehabilitation (VR) in two ways. First, by delivering high quality services through the state-federal VR services, and second, by the defining, expanding, and ensuring competencies of future professionals, which would lead to the profession of rehabilitation counseling (Arokiasamy, 1993; Rusalem & Malikin, 1976). This move alongside the creation of professional associations were instrumental in cementing the masters-level field of counseling in American society.

Given the genesis of rehabilitation counseling to address an unmet societal need, it has evolved in accordance with societal needs, and in doing so has a role in influencing public perceptions of people with disabilities (Jenkins et al., 1998). Rehabilitation counseling has been defined as a process in which people with disabilities "move from dependence in their community towards positions of independence in a community of their choice" (Emener, Patrick, & Hollingsworth, 1984, p. 6). Thus, the societal impact of rehabilitation counseling is traditionally in supporting people with disabilities in obtaining meaningful employment and

improving the lives of people with disabilities in society. These values highlight the importance of consumer empowerment through the provision of rehabilitation services. Empowerment within rehabilitation has been a topic of considerable discussion in rehabilitation literature, which attempted to conceptualize ways to empower by looking at motivation (Gaines, 1975; Lane & Barry, 1970), counselor variables (Muthard & Salamone, 1969; Szymanski & Parker, 1989), as well as philosophical changes to service provisions, namely managing the power imbalance in approaching people with disabilities who receive services as clients (Adams, 1976b; Thomas, 1993).

State-Federal VR services in the United States include several guiding principles, including: (a) people with disabilities must have a voice in their own destiny, (b) rehabilitation is the ultimate goal for people with disabilities, (c) employment opportunities must be expanded for people with disabilities, both in obtaining employment and the quality of employment, (d) both the environment and the person with a disability must be rehabilitated concurrently, (e) rehabilitation plans (i.e. Individualized Plans for Employment [IPE]) must be unique to each person with a disability, and (f) rehabilitation professionals should spend more time engaging stakeholders outside the field of rehabilitation, such as government agencies, businesses, education, city planning, housing, architecture, transportation, and other sectors (Adams, 1976a).

These principles have largely guided the professionalization of the vocational rehabilitation field, and highlight the importance of people with disabilities being primary agents in reaching employment outcomes. Rehabilitation literature has supported the importance of these values, including: individualized IPEs (Beveridge & Fabian, 2007; Pack & Szirony, 2009), the importance of disability stakeholder/community involvement in legislation (Armstrong, 2002; Escorpizo, Reneman, et al., 2011; Powers et al., 2002), as well as rehabilitation consumer

involvement in research and rehabilitation services (Arkansas Rehabilitation Research and Training Center, 1974; Daniels, 1976; Drebing, Van Ormer, Schutt, Krebs, & et al., 2004; Evans, 1974; Miller, 1971; Powers et al., 2002), as well as the empowerment of VR consumers (Hahn, 1991; Holmes, 1993; Kosciulek, 2004; Tengland, 2008; Vash, 1991). Engaging and empowering people with disabilities through existing services has been widely researched, with investigation including motivation, the consumerism movement, and later self-determination.

Historical Empowerment in VR and Social Services

Dialogue surrounding empowerment in rehabilitation was prolific in the 1970s following the passage of the Rehabilitation Act of 1973 and subsequent civil rights and advocacy of the disability community (Holmes, 1993; Remmes, 1974). Some argued that the need for the Rehab Act was a testament to the magnitude of need faced by Americans with disabilities that had not been met by VR services (Daniels, 1976). While choice can be defined as the ability to determine how one lives, empowerment represents the ability to act upon choice (Parent, 1993). Emener (1991) also identified empowerment as a critical guiding value that should inform rehabilitation practice in the future, and suggested that VR services can be accomplished using an empowerment approach, wherein service providers in rehabilitation must be willing to advocate for, and support empowered consumers while pursuing empowerment in their own lives. This empowerment literature suggested ways in which rehabilitation services could be administered or reorganized to better serve those receiving services. Each of the concepts constituting empowerment proposes an avenue that rehabilitation professionals can utilize to support empowerment within existing organizational policies and procedures.

Through the 1990s the economy expanded rapidly, yet there was stagnation in the employment of people with disabilities, lending to a societal impetus to support and expand the

rights of people with disabilities (Holmes, 1993). The Rehab Act amendments of 1992 emphasized the importance of empowering people with disabilities in selecting their own career goals and developing their own written rehabilitation programs, what would become the Individual Plan for Employment Plan (IPE). Further amendments in 1998 increased collaboration between those receiving services and rehabilitation counselors by mandating the informed choice decision making model in rehabilitation services (Capella & Andrew, 2004; Capella & Turner, 2004). This mandated a shared dialogue between the counselor and consumer of VR services alongside the cooperative development of the IPE (Capella & Turner, 2004).

Supporting self-determination for consumers in which there is a power differential can seemingly present a paradox. Consumer engagement or disengagement in VR is an enduring challenge to the effective and parsimonious utilization of services (Fraser, Vandergoot, Thomas, & Wagner, 2004). In effect, services are proliferated based on cost effectiveness alongside those that lead to positive outcomes for the consumer, namely employment. To understand motivation within VR services there are many factors to consider, such as counselor-consumer shared desire to reach the outcome of VR services (i.e. employment) and the willingness to overcome barriers that are secondary to the counseling paradigm, but related to ultimate outcomes (Capella & Andrew, 2004). One way to understand the extent to which VR services can affect positive consumer outcomes is to understand how VR can empower and motivate consumers. Empowered consumers are more likely to reach positive outcomes in employment (Kosciulek, 2004; Kosciulek, 2007; van Hal, Meershoek, Nijhuis, & Horstman, 2012), and to derive motivation from internally held goals, thus enhancing their buy-in to VR services.

High levels of empowerment are also related to high levels of quality of life (Algozzine et al., 2001; Szymanski, 1994; van Hal et al., 2012). An empowered consumer can express

choice and control in life, increasing satisfaction by exercising choice and control (Parent, 1993). These areas are critical components of instilling intrinsic motivation, and this consistent with a self-determination theory framework.An additional approach to supporting empowerment in rehabilitation has been to embrace a model that deemphasizes functional limitations, instead embracing a minority model view of disability (Hahn, 1991). A functional limitation model leads to a view of disability as a source of stigma and negative attitudes, with a focus on reduced activities or limitation experienced by the person with a disability. The minority model highlights the sociopolitical context faced by people with disabilities, emphasizing the experience of adjustment to disability as a similar process to that of other minority groups that encounter discrimination (e.g. race, gender, sexual orientation). In a minority model, equality in social and employment opportunities depends on the legal and constitutional rights of the person, and Hahn (1991) suggests that empowerment could come from various sources, including: the rehabilitation system, professionals, the family, and within the consumer, both simultaneously and continually. The minority model is relevant to rehabilitation services in three major ways: (1) aversive attitudes create barriers encountered by persons with disabilities, (2) all aspects of the environment are shaped or molded by public policy, and (3) public policy reflects widespread social attitudes and obstacles for people with disabilities that are not accidental, but a reflection of societal sentiments of a non-disabled majority (Hahn, 1991, p. 17).

Additional models have included using a feminist cosmology to understand ways to support empowerment. Feminist scholars posit that the organization of formal knowledge is created from the standpoint of the privileged. In this view, those receiving rehabilitation services can be objects without selves. As seen through the dominant lens, by those with the power to oppress, empowerment is an abstract end goal, wherein an individual either has it, or does not

(Sprague & Hayes, 2000; Wendell, 1993). However, under a feminist critique, empowerment is reconceived as a mutual experience, one that is experienced through shared power. This view of empowerment must challenge dominant, privileged views of independence and productivity and focuses on how interpersonal connection may facilitate another's developing self within a communal context (Sprague & Hayes, 2000).

These views have conceived of ways of reinforcing and supporting empowerment within VR settings. A major contribution to supporting empowerment within VR has been the discussion in literature regarding the power differential that exists between the rehabilitation professional and the consumer. This discussion has largely focused on the role of those receiving rehabilitation services identified as a client.

Consumerism. The consumerism movement was born as an alternative to the status quo of "clientism" within human services agencies. The concept of consumerism was borrowed from private industry where customer satisfaction is paramount to continue delivering quality services (Patterson & Marks, 1992). Most definitions portray the helping professional in a paternalistic role, taking care of the client, who is passive and dependent upon assistance (Webster, 1988). At its most extreme interpretation, some researchers argued that the future direction of consumerism could be accomplished by sharing the bureaucratic and systemic responsibilities, allowing consumers to have the power to blacklist programs, facilities, or professionals regarded as inefficient (Evans, 1974).

The clientism approach presumed a problematic power dynamic, with the counselor as the expert and the client a subordinate that merely utilizes services and are in need of help (Thomas, 1993). In the clientist approach there exists a fundamental power disparity between counselor and client, with the counselor in charge of prescribing services based on professional

judgment (Stubbins, 1984). In this scenario services may be undesired or inappropriate, and diminish “buy-in” on the part of the consumer—further disempowering and diminishing self-determination. The shift from clientism to consumerism was complex, but scholars point out that there was no parallel phrase for "the customer is always right" in human services, and moreover, public agencies and services were more likely to question the credibility of clients' perceptions (Patterson & Leach, 1987). Boynton and Fair summarize the consumerism view; stating “rehabilitation providers have traditionally been product-driven. That is to say, they have created programs and services using the expertise of professionals regardless of the needs and wishes of the consumers” (1986, p. 174).

The change from clientism to consumerism was met with skepticism from some scholars in rehabilitation, arguing it has a purely negative connotation as one who spends, wastes, or destroys (Inlander, 1991; Patterson & Marks, 1992; Rhoades, McFarland, & Knight, 1995; Thomas, 1993), although some of this discourse seemed to be a reaction to the negative connotation of the word consumer, and not the philosophical distinction proposed. Other scholars argued that rehabilitation is part of the service industry in the United States**,** and rehabilitation services need to be held accountable for consumer satisfaction (Patterson & Marks, 1992). Consumerism was further supported by the cultural and racial diversity of consumers accessing rehabilitation systems, the merging of needs of people with disabilities with the aging population, the increase in women’s consumer power, as well as differing health needs, such as chronic physical conditions, depression, and women’s health/reproductive challenges (Sales, 2007). In addition, technological advancements allowed greater access to information, thus accelerating the trend toward rehabilitation consumerism and enhancing the opportunities for people with disabilities.

These changes through the 1990s also demonstrated a significant legislative push for consumer empowerment through ensuring satisfaction and choice in services (Sales, 2007). For instance, the Ticket to Work and Work Incentives Improvement Act of 1999 also created a marketplace of vendors for social security beneficiaries providing employment service, which philosophically supported choice and satisfaction with services.

The participation of consumers was not conceptualized as a tool to bring about major social change, but as a strategy for forming a partnership between the rehabilitation agencies and the communities they serve (Miller, 1971). Community organizers have been suggested to enhance the communication between service agencies and those they serve, and the community more broadly. This dynamic process has been suggested as a method to address stigma and negative stereotypes of people with disabilities by minimizing the role of consumer dependency on agencies and by working together on shared problems (Miller, 1971).

The fundamental philosophies supporting consumerism are consistent with the aforementioned guiding principles of rehabilitation, and include: everyone belongs in the community regardless of disability type and severity, consumers should run their rehabilitation services, should be integrated into typical neighborhoods as well as community and workplace, be able to pursue social relationships with non-disabled peers, and lastly that community integration is multifaceted and includes participation, social/living skills and advocacy (Rhoades et al., 1995). The scope of the consumerism movement in rehabilitation and public service agencies is analogous to brand satisfaction with profit-generating private organizations, in that it is not merely improvements in narrowly defined service provisions such as vocational evaluation satisfaction or levels of satisfaction with job placement coordinators, but a paradigm shift

seeking to deliver a fundamentally better experience (Patterson & Leach, 1987; Patterson & Marks, 1992).

Consumer motivation within state-federal rehabilitation services has been broadly researched (Cook et al., 2005; Härkäpää, Järvikoski, & Gould, 2014; Kasser, Davey, & Ryan, 1992; Valle et al., 2014; Wagner & McMahon, 2004). This research was largely focused on the counselor perceptions of client motivations, which included a history of labeling consumers as unmotivated (Safilios-Rothschild, 1970). This research into motivation within rehabilitation counseling research took a perspective of the rehabilitation counselor as the primary source of information and success, based on sound professional guidance. This perspective understood negative consumer outcomes as resulting from unmotivated consumers resulting in a fundamental barrier to positive rehabilitation outcomes (Gaines, 1975; Lane & Barry, 1970; Thoreson, Smits, Butler, & Wright, 1968).

In life, if autonomy, freedom, and independence are crucial for reaching positive life outcomes, then empowerment is the vehicle through which rehabilitation services can assist consumers in reaching these goals. In meeting these aspirational goals, rehabilitation professionals must maximize every opportunity to facilitate each consumer's empowerment. Consumers can grow toward independence as they begin to experientially discover their unique version of freedom (Emener, 1991).

In meeting the goals of autonomy and independence, federal legislation has supported the values of choice and personal control through the passage of the Americans with Disabilities Act (ADA) and in subsequent Rehabilitation Act amendments. These legislative moves mandate equal opportunity for individuals with disabilities in the realms of: employment, public accommodations, transportation, services of state and local government, telecommunications and

in VR services. These legislative changes mandated improved support for both empowerment and self-determination of consumers. These were influenced by, and were also supportive of, continuing positive societal change in attitudes towards people with disabilities, and agency recognition of the increasing value of recognizing the importance of consumer satisfaction, self-determination, and empowerment.

Self-Determination

Self-determination is a macro theory of human motivation, initially organized by the early work in education looking at learning, motivation, and autonomy in students (Ryan & Stiller, 1991) as well as internal motivation and the role of external reward's role in diminishing intrinsic motivation in various laboratory tasks (Deci, 1971; Deci, 1975).

At the heart of self-determination is three implicit psychological constructs, autonomy, competence, and feelings of psychological relatedness, which cumulatively lead to intrinsically motivated, high quality motivation that maximizes and enhances human growth and developmental potential. Autonomy can be defined as the urge to be a causal agent in one's own destiny, which can be enhanced with perceived choice (Deci, 1971; Zuckerman, Porac, Lathin, Smith, & Deci, 1978). Competence is defined as the psychological journey to control outcomes and experience mastery, and has been shown to increase following positive praise during tasks, which also increases intrinsic motivation (Deci, 1971; Valerand & Reid, 1984). Lastly, relatedness is the psychological need to interact and relate to, and be connected with others (Baumeister & Leary, 1995), which may be enhanced by higher levels of participation in society.

Self-determination is a theory of motivation, which has historically been a challenging construct to measure. Although motivation may be measured directly, some scholars have argued that it is best understood through sustained persistence, arousal, and direction (Terborg &

Miller, 1978). Historically, psychological research into motivation was derived from behaviorism, in which intrinsic motivation was first defined as a behavior that is engaged in absent to any reinforcements (Skinner, 1953).

Self-determination as a theory of motivation is the culmination of several areas of psychological research identifying several findings that seemed to underlie human motivation and positive psychological wellbeing (Ryan, 1995). Self-determination is unique in that it is proposed to be a macro theory of motivation, as an innate human process in which people tend towards self-growth, and that self-growth and optimal functioning are best achieved when motivations are implicitly meaningful and intrinsic (Deci & Ryan, 1985).

Higher levels of self-determination has been associated with a multitude of psychological constructs and outcomes, including: higher quality performance in vocational settings, (Deci & Ryan, 2014; Gagne´ & Deci, 2005; Wehman et al., 2015), higher levels of generalized psychological wellbeing (Lachapelle et al., 2004; Lachapelle et al., 2005; McDougall et al., 2010; Ryan & Deci, 2000b), higher quality of life (Lachapelle et al., 2005; Nota, et al., 2007; Shogren, Lopez, Wehmeyer, Little, & Pressgrove, 2006), and more positive post-secondary educational and adult-life outcomes for transition-aged youth with disabilities (Shogren et al., 2015; Wehman et al., 2015; Wehmeyer & Palmer, 2003).

In addition, self-determination has been widely studied within special education settings as both a process and outcome variable (Algozzine et al., 2001; Bae, 2007; Benson, 2012; Griffin, 2011; Malian & Nevin, 2002; Shogren, Palmer, Wehmeyer, Williams-Diehm, & Little, 2012; Suk-Hyang Lee, Wehmeyer, & Shogren, 2015; Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013). Research has identified also self-determination as a best practice in

school settings as well as in youth transition to adulthood (Field et al., 1998; Fowler et al., 2007; Wehmeyer et al., 2012).

Self-determination in work settings. An example of an individual that is behaving based on their personal agency within a self-determination framework has been defined as one who has "high aspirations, perseveres in the face of obstacles, sees more and varied options for action, learns from failures, and overall, [and] has a greater sense of well-being" (Little, Hawley, Henrich, & Marsland, 2002, p. 390)

Other scholarly areas, such as industrial and organizational psychology, have discussed factors within employees (i.e. personal factors) such as personality, as well as the work environment as it related to levels of self-determination (Deci & Ryan, 2014; Gagné & Deci, 2005; Grant & Shin, 2012). This avenue of research is an important contribution to the field, but has not been applied to workers with disabilities, particularly ways in which stigma can negatively impact levels of participation in education, work, independent living, and other life activities for those who have disabilities, and particularly for how these may impact TAYA.

Self-determination in rehabilitation. In rehabilitation, supporting the self-determination of VR consumers would be to proliferate services in ways that do not limit autonomy, and lead to enduring improvements in societal participation which include most prominently work and independent living. Research into motivation in helping professions has underscored the importance of client/consumer/patient motivation. Although broadly studied in rehabilitation and other fields, a strong operational definition of motivation has historically been elusive, with some suggesting that academic investigation should be halted due to the multiple meanings and definitions of motivation (King & Barrowclough, 1989).

This would mean that the intrinsic motivation of valued goals must be fostered and supported within the consumer, and that coercive services leading to extrinsically motivated behaviors should be avoided. The experience of extrinsic motivation has been defined in work/organizational settings as an activity that seeks to obtain a consequence that is detached, or separated from the activity, which would include all behaviors that are instrumental (Deci, Olafsen, & Ryan, 2016). Examples include working towards specific deadlines, receiving tangible rewards for an activity (Deci, 1975), social circumstances perceived as coercing (Deci & Ryan, 2002), and even surveillance (Amabile, DeJong, & Lepper, 1976). The impact of external pressures on motivation has been researched in a plethora of settings outside of the work/vocational world, including: controlling weight, medication compliance/adherence, and quitting smoking (Westmaas, Wild, & Ferrence, 2002; Wild, Newton-Taylor, & Alletto, 1998). Alternatively, research has identified that when people perceive autonomy and support, intrinsic motivation is enhanced (Wild et al., 2006).

Within VR settings, supporting the self-determination of consumers has proved to be a complex challenge, due in part to the power differentials in the counselor-consumer relationship as previously mentioned (Emener, 1991; Greenleaf & Bryant, 2012; Hagner & Marrone, 1995; Hahn, 1991). Studies have shown that some consumers perceive that agencies and departments tasked with serving people with disabilities may act as a hindrance regarding meeting their potential (Murphy & Rogan, 1995; Shapiro, 1994) and may be more interested in ensuring the propagation of the agency than the benefit of the individual consumer (Condeluci, 1995).

Previous literature in rehabilitation identified four basic assumptions of empowerment in rehabilitation: (1) a consistently held belief that each consumer has worth and dignity, (2) Rehabilitation Counselors ensure the consumer receives the same opportunity of every consumer

that can maximize their unique potential, (3) people strive to grow and change in positive directions, and (4) consumers should have freedom to make their own decisions regarding how they manage their lives (Dowd & Emener, 1978; Martin, 2007a). Empowerment in VR would also require that the consumer would perceive choice, opportunity, and independence to act upon one's choices (Wild et al., 2006).

Nested within the empowerment framework, the nature of one's self-control and self-determination are indicators of the degree of potential empowerment. In this vein of research, it has been found that counselors perceived client motivational problems as a significant barrier to successful rehabilitation outcomes (Thoreson et al., 1968). Furthermore, consumers of VR were likely to be labeled as unmotivated by the counselor when consumer and rehabilitation counselor goals were not aligned (Gaines, 1975). Motivation studies such as these could be conceptualized as studies of working alliance, as VR consumers of described as unmotivated by counselors were more likely to have goals and aspirations that were not aligned with those of the counselor, but not necessarily unmotivated towards their rehabilitation. The concept of empowerment incorporates choice, independence, self-control, and self-determination (Szymanski, 1994), all of which are areas of central concern for success in rehabilitation (Bolton & Brookings, 1996). The findings of earlier studies influenced future directions in rehabilitation, such as the assertion that the VR process should not be coerce or otherwise seek to limit the free choice and autonomy of the consumer (Lane & Barry, 1970; Wagner & McMahon, 2004). These findings were an initial attempt to support the autonomy and more broadly, empowerment in VR services, with attention on the role of the counselor. Importantly, this movement is consistent with fundamental aspects of self-determination.

To this end, consumer satisfaction has become increasingly supported as a means of understanding, and facilitating, success within VR systems (Capella & Turner, 2004; Hein et al., 2005; Kosciulek, 2003; Patterson & Marks, 1992) alongside supporting other facets of consumer empowerment. Supporting self-determination is a cornerstone of the rehabilitation philosophy, and has been defined as a "way of thinking, initiative, and rights to regulate and direct own life, [the]… ability to define and attain goal-directed, self-regulated, autonomous behavior" (Okon & Webb, 2014, p. 196).

Self-determination was also found to be associated with other positive outcomes, such as measures of quality of life and satisfaction with life (Lachapelle et al., 2004; Lachapelle et al., 2005; McDougall et al., 2010; Nota et al., 2007a; Nota & Soresi, 2004). Research suggests that individuals with emotional/behavioral disabilities, autism, learning disabilities, and intellectual disabilities demonstrate less self-determination than their peers (Ackerman, 2006; Carter et al., 2006; Carter et al., 2010; Powers et al., 2002; Seo et al., 2015; Travers et al., 2014).

It has been suggested that self-determination may, by attending to the presence or lack of supports for psychological needs, foster an understanding of the conditions in which alienation versus engagement occur (Ryan & Deci, 2000b). In short, self-determination is "relevant to parents and educators concerned with cognitive and personality development because it speaks to the conditions that promote the assimilation of both information and behavioral regulations" (Ryan & Deci, 2000b, p. 76). In this study, higher levels of self-determination constructs are understood as a proxy for higher levels of consumer empowerment.

Self-determination theory. Self-determination theory (SDT) postulates that feelings of competence, autonomy, and relatedness to others are essential psychological needs have evolved in human beings (Ryan, 1995; Ryan & Deci, 2000b). As a psychological construct, self-

determination theory developed to understand implicit and universal needs that guide intrinsic human motivation (Deci, 1975; Ryan & Deci, 2000a), in opposition to earlier psychological conceptualizations of motivation as a measurement of the strengths of particular needs (Murray, 1938). The needs/strengths theory of human motivation has been conceptualized as an individual difference, a result of learning through human development. The strength of needs in this framework has been identified as desires or motives which develop starting in childhood, crystalizing into strongly held desires regarding the environment. In this school of thought individuals are more likely to work towards desires that are more strongly held.

SDT posits that fundamental needs are evolved and universal to the human experience (Ryan & Deci, 2000a). The fundamental needs of autonomy, competence and psychological relatedness are innate human needs, and thus the presence or absence would be associated with positive or negative consequences. In this light, essential psychological needs are controlled by the amount to which the needs are satisfied or prevented.

Ryan et al. (2008) found that health and well-being are strongly influenced by health behaviors controllable by the individual. SDT recognizes these behavioral mediators of health outcomes, suggesting that practitioners attend more carefully to the individual's experience and motivation. Research into work and productivity by Parker et al. (2010) identified three motivational states through which other variables may have mediating or moderating effects, including: (a) having a compelling reason to engage (i.e. having a future goal), (b) believing they can engage (work-related self-efficacy and outcome expectancy), and (c) feeling energized or encouraged by motivated behaviors (Parker et al., 2010).

SDT does not describe motivation to engage in activities at the extremes of motivated intrinsically or extrinsically. Motivation is understood as part of continuum, that can include the

extremes, but also levels of motivation that have aspects of both intrinsic and extrinsic motivation.

Moreover, SDT proposes that autonomy, relatedness, and competence are innate human drives needs to foster high-quality, intrinsic motivation that supports growth and organismic development (Deci & Ryan, 2002). When social environments promote the perception of being coerced, intrinsic motivation is undermined. Conversely, when social environments promote perceptions of autonomy and ability to make choices, intrinsic motivation is enhanced (Deci & Ryan, 2002).

SDT and Transition Aged Young Adults with Disabilities. VR services are essential in assisting many high school students and young adults with disabilities in their transition to adult life-roles (Shogren et al., 2015; Suk-Hyang Lee et al., 2015; Wehmeyer, 2002; Wehmeyer, 2003). A common benchmark for achievement in attaining positive adult life-role has been conceptualized as employment, alongside others such as post-secondary education (Wolters, O'Day, Andersson, Rangel-Diaz, & Hawkins, 2000; Zhan, 2006), making social connections, and living in community settings (Araten-Bergman & Stein, 2014; Ditchman, 2010; Lubben, Gironda, Sabbath, Kong, & Johnson, 2015; Moore & Schelling, 2015; Office of Disability Employment Policy, 2015; Polak & Warner, 1996; Rintala et al., 1992; Vander Stoep et al., 2000) are seen as important secondary predictors.

For TAYA, understanding the role of motivation is critical to understanding engagement in VR services. Self-determination can act as a theoretical foundation connecting the contextual factors with overall levels of motivation, outcome expectations and ultimate engagement in VR services.

Self-determination is operationalized as an umbrella concept that includes both behavioral (e.g. increasing skills, goal attainment) and affective dimensions (e.g. emotions, self-reflections). With TAYA, self-determination has been most commonly utilized in the context of educational or other postsecondary outcomes (Mull, Sitlington, & Alper, 2001; Shriner & Destefano, 2003; Travers et al., 2014; Van Reusen & Bos, 1994; Wehmeyer, Field, & Thoma, 2014).

Using a SDT framework, VR can offer transition aged youth an environment in which self-determination is systematically supported or undermine, leading to consumer success, alongside other social factors, such as parent or teacher practices (Ryan & Stiller, 1991). Similarly, research into self-determination interventions has been identified as a crucial area of practice for many TAYA with disabilities, including learning disabilities (Field, 1996; Roffman et al., 1994), intellectual or developmental disabilities (Field & Hoffman, 1999; Nota et al., 2007a), and heterogeneous samples of students with disabilities.

By enhancing the understanding of self-determination rehabilitation professionals can support SDT principles of autonomy, relatedness, and competence to promote a better work experience for youth with disabilities, and indirectly merit positive outcomes more broadly (e.g. work, self-esteem, self-efficacy, independent living, advocacy). Of critical importance to assisting TAYA in achieving positive postsecondary outcomes is the use of government and other supportive services. Of particular benefit would be supporting TAYA participation in vocational rehabilitation services (Urbanoski & Wild, 2012). Self-determination has been found to be associated with postsecondary outcomes, such as employment related outcomes (Lehmann et al., 1999; McGlashing-Johnson et al., 2003) as well as higher degrees of independent living (Bambara & Ager, 1992; Grenwelge, 2010; Serna & Lau-Smith, 1995; Shogren et al., 2015;

Shogren et al., 2007).

Social and Societal Factors for TAYA

Societal barriers are broadly conceptualized to encompass challenges faced by TAYA within the service system (K-12 education, transition services, and federally mandated laws and legislation). In the last several decades, federal legislation and policies have mandated transition services for TAYA as they transfer from the K-12 educational system into adult roles. The 2004 reauthorization and amendments of the Individuals with Disabilities Education Act of 2004 (IDEA) expanded on the transition-related activities formerly covered under original IDEA legislation. Transition services are defined as services designed to:

> (A) … be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including post-secondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation; (B) is based on the individual child's needs, taking into account the child's strengths, preferences, and interests; and (C) includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and, when appropriate, acquisition of daily living skills and functional vocational evaluation (Individuals with Disabilities Education Improvement Act of 2004, p. 12).

The IDEA legislation has been supported by research that has highlighted the importance of education for TAYA. Postsecondary education is a primary goal for an increasing number of students with disabilities who have transition plans, with some estimates begin as high as 80%

(Cameto, Levine, & Wagner, 2004). IDEA legislation included many regulations for the transition but does not specify a responsible party to ensure the development and realization of outcomes-driven transition goals.

The National Collaborative on Workforce and Disability (NCWD) for Youth performed an extensive literature review that identified guideposts relevant to successful transition to adult roles for people with disabilities that are crucial for young people with disabilities (National Collaborative on Workforce and Disability for Youth, 2015). The guideposts from NCWD can be summarized as including the domains of: (1) access to high-quality standards-based education regardless of setting (e.g. inclusive, segregated); (2) information about career options and exposure to work-related activities (e.g. internships, paid work experience); (3) opportunities to develop social, civic, and leadership skills; (4) strong connections to caring adults; (5) access to safe places to interact with their peers; and (6) support services/accommodations that allow participants to become independent adults. The aforementioned guidelines focus on both K-12 experiences but also expand into transition topics, such as, career preparation and work-based learning experiences, youth development and leadership, and familial engagement as well as expectations and supports.

Transition-aged youth who acquire paid jobs while in school have been shown to experience better post-school employment success than peers who begin working later in their transition process (Carter, Austin, & Trainor, 2012; Test, Fowler, et al., 2009). In addition, analysis of data from the National Longitudinal Transition Study has revealed that high school competitive employment is the strongest predictor of competitive employment in adulthood (Newman, Wagner, Cameto, Knokey, & Shaver, 2010; Newman et al., 2011).

Supported employment services. The use of supported employment has increasingly become seen by researchers and secondary education professionals as a valuable tool to provide support for youth with disabilities who have never worked before or were viewed as not having the potential to succeed (Wehman, Chan, et al., 2014). Overall, supported employment in secondary education has become increasingly researched as employment outcomes are increasingly emphasized as the ultimate measurable goals of post-secondary life for TAYA (Certo et al., 2008; Test, 2008). Supported employment research has been conducted on different disability populations, including traumatic brain injury (Wehman et al., 2003), autism spectrum disorders (Wehman et al., 2012), cognitive and intellectual disabilities (Wehman, Chan, et al., 2014), and spinal cord injury to name a few (Inge et al., 1998).

Supported employment supports have also been studied alongside other robust transition-related programs such as Project SEARCH, which is a business-led one-year school to work transition program connecting youth with gainful (paid) employment in the community. The transition supports provided by Project SEARCH were determined to merit higher hourly wages and better employment outcomes than supported employment services alone in a sample of participants with autism spectrum disorders (Schall et al., 2015). Research has shown that TAYA receiving supported employment experience higher rates of employment compared to those receiving usual transition services (Wehman, Chan, et al., 2014). Although services like Project SEARCH have demonstrated effective outcomes at or above those of supported employment, the financial and human capital to support the program is much greater, and such extended services are not available in all communities.

CHAPTER THREE
Methodology

This section provides details on how this research study was conducted. This includes research design, procedures, sampling plan, characteristics of the sample and participants, and psychometric properties of the measures used in the study.

Research Design

This study utilized a non-experimental quantitative design with a convenience sample. The research design was a descriptive field study, hallmarked by generally lower internal validity due to no experimental conditions or controls, but high external validity because it was conducted outside of laboratory conditions in a real-world setting (Heppner, Wampold, & Kivlighan, 2007). The driving research questions were addressed through Pearson bivariate correlation tables for exploratory purposes followed by hierarchical regression analysis. Further analyses were conducted to identify moderator relationships, and the Hayes (2009) PROCESS model and bootstrapping procedure were used for mediational analyses. The three research questions driving the present study are:

1. Does the SDT model of youth VR engagement describe the relationship between self-determination and engagement in VR for transition-aged adults with disabilities?

   H_a: Personal and environmental factors, disability related factors, and self-determination factors are associated with vocational rehabilitation engagement in a sample of transition-aged adults with disabilities.

2. What is the mediational relationship between social support and functional disability in predicting engagement in VR?

   H_a: Social support will mediate the relationship between functional aspects of disability and engagement in VR.

3. What is the relationship between the self-determination construct of autonomy as it relates to functional disability and vocational rehabilitation engagement.

   H_a: Autonomy will mediate the relationship between functional disability and engagement in VR.

Study Procedures

Prior to UW-Madison Institutional Review Board (IRB) submission the Human Participants Research Training was completed by study Principal Investigator and student researcher. Following completion of training, the study was submitted and approved by the UW Madison IRB (Appendix A). As part of the study, letters of support were received from the California Department of Rehabilitation (Appendix B) and California Community College District Workability program (DOR coop program - Attachment C) as well as Texas Vocational Rehabilitation Services (Appendix D). Recruitment posters and flyers with pull tabs were given to California and Texas Vocational Rehabilitation partners with abbreviated links to the online survey (Attachments E, F).

Recruiters were also provided with template recruitment instructions (Attachment G), to proliferate the online survey URL. The recruitment instructions also included basic information about the study and information to distribute recruitment posters and flyers, and the shortened URL. VR agencies and partners were instructed to proliferate the recruitment materials to field offices, to relevant counselors (i.e. those with a transition caseload), or through any other means of outreach (i.e. list-serves or online communities where applicable). This includes those directly recruited through the VR system (e.g. from fliers in field offices, from specialized caseloads) as well as through cooperative agreements such as college-to-career programs for which student are concurrently VR consumers, or other transition-related organizations with cooperative

agreements with VR. Recruitment partners included a sample of: state and local Vocational Rehabilitation agencies, postsecondary education disability support programs, and nonprofit transition programs or organizations that serve young adults with disabilities.

Data was collected as a self-report instrument administered through SurveyMonkey (Attachment H), an accessible online survey platform. Participants completed their informed consent on the online survey prior to starting the questionnaire, with those who opted out redirected to a URL thanking them for their interest and ending the survey. Participation in the study was concluded once the online survey has been completed.

To determine the needed sample size, an a priori power analysis was conducted using G*Power version 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007). The sample warranted a low to medium effect size of $f^2 = .10$ (Cohen, 1988) which is consistent with previous literature investigating self-determination in VR (e.g. Tansey, et al., 2017), and statistical power =.80 (α=.05) with 10 predictors. The required sample size was calculated to be 100. This sample size is appropriate to test a regression model with low to moderately correlated predictors that are reliable measures of the given construct. G*Power was also used to determine the appropriate sample size for the mediation analyses with a medium effect size of f^2=.15 (Cohen, 1988) with statistical power =.80 (α=.05) with 2 predictors was calculated to be 68.

Participants

The sample for this study targeted young adults, aged 18-24 who are consumers of VR services directly or through cooperative agreements with other organizations of service providers. Sampling youth, and particularly youth with disabilities, can face several significant challenges. Recruitment approaches faced several significant barriers (Schnirer & Stack-Cutler,

2012), including (a) barriers accessing the population who tend to utilize services less (Yeatts, Crow, & Folts, 1992); (b) participation concerns, including personal and familial concerns about participating in research such as privacy (Heinrichs et al., 2005), lack of trust (Frayne, Mancuso, Prout, & Freund, 2001), or denial of any need for assistance (El-Khorazaty et al., 2007); (c) demographic characteristics such as lower literacy, English language learners, increased family stress and transportation limitations (Wright, John, Alaggia, & Sheel, 2006). The research sought a heterogeneous representation of disabilities, race/ethnicity, and social strata to the greatest extent possible.

Given the plethora of services directed at intellectual and developmental disabilities, sampling sought to capture a generalizable sample of young adults with heterogeneous disabilities, receiving services from various organizations.

Sample Characteristics

A total of 183 individuals began the online survey, and the final sample included 136 participants. Descriptive data for study participants are presented in Table 3.1. The age of participants ranged from 14 to 35 (M = 22.15, SD = 3.68). All surveys were completed through an online SurveyMonkey link shared by recruiters through poster/flyers or by online distribution. More participants were male (56.2%) than female (43.8%), and the majority of respondents had completed high school or were participating in postsecondary education (85.4%). Employment status was mixed, with the most common being employed and working part time (31.4%), followed by working full-time (22.6%), with the remaining being a combination of unemployed, in an unpaid internship, or volunteering (46%).

The most common primary disabilities identified were physical/mobility disabilities (28.5%), followed by a broad category of "other" types of disability (27.7%), intellectual

disability and Autism spectrum (both 13.9%), and psychiatric disabilities (10.9%). See Table 3.2 for the entire list of primary disabilities for all respondents.

The racial/ethnicity breakdown demonstrated the most prevalent race being Caucasian (64.2%), followed by African-American (21.2%) and Hispanic (8%). In addition, most participants had an IEP while in K-12 education (75.9%), and more than half received SSI (52.6%) and received a free lunch through a program in K-12 (63.5%). Almost all participants (96.4%) reported having some type of insurance, with the most common being insurance through family (31.4%) and Medicaid (24.8%) or Medicare (14.6%). Table 3.3 includes the most common VR services received by participants, with the most common being job seeking (32.3%) and college (30.1%).

Table 3.1. Demographic Information for Respondents (*N* =136)

Demographic Variables	N (%)	Mean (SD)
Age	136 (100)	22.15 (3.68)
Gender		
Female	60 (43.8)	
Male	77 (56.2)	
Race		
American Indian/Alaskan Native	3 (2.2)	
Asian/Pacific Islander	4 (2.9)	
Black or African American	29 (21.2)	
Hispanic	11 (8)	
White/Caucasian	88 (64.2)	
Educational Status		
Still in high school	17 (12.4)	
Left high school prior to receiving degree	3 (2.2)	
High school graduate	23 (16.8)	
Have GED	14 (10.2)	
Attending community college	26 (19)	
Attending 4-year university	48 (35)	
Attending specialized college program	3 (2.2)	
Employment status		
Employed, working full-time	31 (22.6)	
Employed, working part-time	43 (31.4)	
Not employed, looking for work	29 (21.2)	
Not employed, NOT looking for work	13 (9.5)	
Unpaid internship	6 (4.4)	
Doing volunteer work	14 (10.2)	
Health Insurance		
No insurance at all	5 (3.6)	
Medicare	20 (14.6)	
Medicaid	34 (24.8)	
Public insurance from other source	9 (6.6)	
Insurance through your own employer	12 (8.8)	
Insurance through family	43 (31.4)	
Private insurance purchased by you or family	4 (2.9)	
I don't know	9 (6.6)	
Public Support		
Received Free Lunch in school	87 (63.5)	
Family received food stamps	33 (24.1)	
Family received childhood SSI	72 (52.6)	
Had IEP in school	104 (75.9)	

Table 3.2. Primary Disability (*N* =131)

Type of Disability reported	*N*	%
Amputation or Limb loss	3	2.2
Anxiety Disorders	8	5.8
Arthritis and Rheumatism	4	2.9
Asthma and other Allergies	7	5.1
Attention Deficit Hyperactivity Disorder (ADHD)	5	3.6
Autism	19	13.9
Blood Disorders	1	0.7
Cerebral Palsy	8	5.8
Congenital Condition or Birth Injury	1	0.7
Depression and other Mood Disorders	2	1.5
Diabetes Mellitus	4	2.9
Digestive	3	2.2
Eating Disorders (e.g., anorexia, bulimia, compulsive)	1	0.7
Epilepsy	2	1.5
Intellectual Disability	15	10.9
Multiple Sclerosis	3	2.2
Muscular Dystrophy	11	8.0
Parkinson's Disease and other Neurological Disorders	3	2.2
Personality Disorders	2	1.5
Physical Disorders/Conditions (not listed elsewhere)	13	9.5
Polio	2	1.5
Schizophrenia and other Psychotic Disorders	2	1.5
Specific Learning Disability	8	5.8
Spinal Cord Injury (SCI)	2	1.5
Stroke	1	0.7
Traumatic Brain Injury (TBI)	1	0.7

Note: Five participants skipped the primary disability question, but completed the rest of the survey so were retained in the study.

Table 3.3. Services Received from Vocational Rehabilitation

VR Services received	***N***	**(%)**
Job Seeking	43	(32.3)
Job Placement	31	(23.3)
Vocational Training	26	(19.5)
College	40	(30.1)
Counseling	32	(24.1)
Benefits Counseling	18	(13.5)
Assistive Technology	18	(13.5)
None	20	(15)

Measures

The questionnaire used in this study consists of four parts: demographic questions, personal and environmental factors, self-determination factors, and the outcome measure of engagement in VR.

Contextual Factors

The International Classification of Functioning Disability and Health has been widely studied in public health, medical and rehabilitation literature. The present study utilized a biopsychosocial framework to capture the interaction or health, disability, and functioning, as well as contextual factors, which included both personal (individual level) and environmental (societal/cultural level) factors. These have been used in clinical practice (Bickenbach, Cieza, Rauch, & Stucki, 2012) and widely in rehabilitation literature (Chan, Gelman, Ditchman, Kim, & Chiu, 2009; Chan, Keegan, et al., 2009; Escorpizo, Finger, et al., 2011; Escorpizo, Reneman, et al., 2011; Finger et al., 2011).

Environmental measures. The impact of the environment on overall functioning was measured using a composite measure of Socioeconomic Status (SES) as well as a measure of Social Support. The environmental has been identified in the literature as an important contextual factor in understanding the impact of constructs such as poverty, social status, and perceived social support in a biopsychosocial framework (Bronfenbrenner, 1999) in diverse settings, such as with veterans (Stiers et al., 2012), with young people with disabilities (Anaby et al., 2014; Coster et al., 2012), and cross culturally (Hansen, Rasmussen, Kyed, Nielsen, & Hviid Andersen, 2012; Tongsiri & Riewpaiboon, 2013; Yun-Tung & Yi-Jiun, 2013).

Socioeconomic status. The Socioeconomic status (SES) of participants was estimated. In a sample of youth and young adults with disabilities there are several complications in

achieving appropriate estimates of SES. First, youth may not be privy to parental or household annual incomes, or may not explicitly know detailed information about their parent's jobs title or education status. The demographic information section included relevant questions to collect parental scores for education (1=less than 7th grade to 7= graduate school), occupation classification scores (i.e. 1 = laborer, 9=executive), as well as a fill-in estimating annual household income consistent with the method established by Hollingshead (1975).

A study by Ensminger et al. (2000) reviewed the literature regarding the estimation of SES for youth participants principally finding that adolescents have relatively high agreement with their mothers on basic background information, and that the domains of financial capital (parent working, free-lunch, food stamps), human capital (i.e. parental education), and social capital (i.e. family constellation measures) were the most important indicators for young adolescents. In the research, the "older" adolescents group (up to age 19) showed greater accuracy when compared maternal answers, and thus the age range of the present sample found better predictive value than other measures of SES. The SES measure utilized in the present study was a composite of several variables, depending on household size and employment status, thus a measure of internal consistency wasn't available.

Multidimensional Scale of Perceived Social Support. The Multidimensional Scale of Perceived Social Support (MSPSS) consists of 12 items that assess an individual's perception of the adequacy of the social support that they receive (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS consists of three social support subscale scores for: friends, family, and significant other. The measurement uses a seven-point Likert-type scale (1 = very strongly disagree, 7 = very strongly agree). An overall score can be determined by averaging the score on all items, with higher scores indicating greater perceived social support. The original publication

demonstrated strong internal consistency (Cronbach's alpha = .88) as well as a test–retest reliability of 0.85 (Zimet et al., 1988). Other studies used the global perceived social support score have found high internal consistency (α = .85 to .91), and test-retest reliability from two-to three-month intervals (*r* = .72 to .85) (Raichle, Hanley, Jensen, & Cardenas, 2007). A study about health-related quality of life among primary caregivers of children with autism found high internal consistency (α = .95) (Khanna et al., 2011). The use of the MSPSS has been suggested for measurement in rehabilitation research using biopsychosocial approaches (Chan, Keegan, et al., 2009). The MSPSS in the present study demonstrated high internal consistency (α = .91).

Personal measures. Several measures were utilized to measure the personal factors of each participant. Personal measures were utilized to account for individual differences within the population, including unique personality and dispositional traits, gender, and age.

Core self-evaluation scale. The core self-evaluation scale (CSES) was originally developed to understand individual dispositional factors as they relate to organizational and job satisfaction (Judge, Bono, Erez, & Locke, 2005; Judge, Locke, & Durham, 1997), and was used by the present study to measure general disposition. Core Self-Evaluation has been defined as self-referential perception as being worthy and competent (Judge et al., 1997; Judge, Locke, Durham, & Kluger, 1998), and is based on the personality dimensions of self-efficacy, self-esteem, emotional wellbeing, and perceived locus of control. It is measured by the Core Self-Evaluation Scale (CSES), which is a 12-item ("I complete life tasks successfully") measure of CSE rated on five-point Likert-type scale (1 = "Strongly Disagree," 5 = Strongly Disagree"). Higher overall scores indicate higher levels of CSE.

The CSES has been correlated with measures of job satisfaction, job performance, life satisfaction, and psychosocial aspects of disability (Judge et al., 2005; Judge et al., 1998;

Smedema & Tansey, 2014). A meta-analysis found moderate to large correlations between job satisfaction and self-esteem (r = .26), self-efficacy (*r* = .45), internal locus of control (*r* = .32), and emotional stability (*r* = .24) (Judge & Bono, 2001). The same meta-analysis found small to moderate correlations between job performance and for self-esteem (*r* = .26), self-efficacy (*r* = .23), internal locus of control (*r* = .22), and for emotional stability (*r* = .19) (Judge & Bono, 2001). Studies have found Cronbach's alpha from .81 to .87 in organizational and work settings (Judge, Erez, Bono, & Thoresen, 2003). More recently, the CSES was used in rehabilitation literature looking at wellbeing, hope, and life satisfaction or people with spinal cord injury (Smedema, 2014; Smedema, Chan, & Phillips, 2014; Smedema & Tansey, 2014). Rehabilitation research using the CSES found satisfactory Cronbach's alpha coefficients of .89 (Smedema et al., 2014), and .88 (Smedema & Tansey, 2014). The CSES in the present study demonstrated good internal consistency (α = .82).

Disability measures. Levels of disability were measured utilizing an instrument to predict functional disability as well as a brief inventory to predict levels of mental health problems (depression and anxiety). Both instruments measured level of disability, wherein higher measures were associated with higher levels of functional implications of disability, and thus higher level of disability experienced.

Functional disability. The World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) was developed by the World Health Organizations as an internationally valid measurement of general health and disability to be used in both clinical and general populations, within the framework of the ICF. The WHODAS 2.0 is an update from the World Health Organization's Disability Assessment Schedule (WHO, 1988), which was developed to assess psychiatric functioning.

The WHODAS 2.0 is available as a 36 or 12-item instrument, with a total of six domains: cognitive (understanding and communicating); mobility; self-care (hygiene, eating, living independently); getting along (interaction with others); life activities (responsibilities at work, school, or home), and participation in society. Scoring was completed by summing each category and individual item for a total score, with higher scores denoting higher levels of disability. The present investigation utilized the shortened 12-item WHODAS 2.0, which explained 81% of the variance of the full 36-item instrument (Ustun et al., 2010). The WHODAS 2.0 is highly correlated with other instruments measuring disability or health status, including the Short Form-36, Functional Independence Measure, and the London Handicap Scale (Ustun et al., 2010). The WHODAS was found to have high internal consistency (Cronbach's alpha =.86), and high test-retest reliability (ICC = .98). The WHODAS in the present study demonstrated high internal consistency (α = .92).

Recent changes in the Diagnostics and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) suggest that the WHODAS score could be substituted for the previous Global assessment of Functioning (GAF) score present on previous iterations of the DSM (American Psychiatric Association, 2013). Recent evidence has suggested that replacing the GAF with a WHODAS-2.0 score is appropriate for inpatient forensic settings (Gold, 2014), and as an indicator of improvement for dually-diagnosed individuals (Bastiaens, Galus, & Goodlin, 2014) Others suggest that a "one-size fits all" metric is not appropriate for psychiatric populations (Konecky, Meyer, Marx, Kimbrel, & Morissette, 2014). A qualitative study supported the assertion that the content coverage of the WHODAS 2.0 favors a medical construct of disability, which may be problematic for practitioners applying the WHODAS in community environments wherein social aspects of disability may be most desirable (Kulnik & Nikoletou, 2014).

Rehabilitation Research recently indicated that the WHODAS had a three-factor solution, including activities/participation, self-care, and mobility. In this sample of individuals with spinal cord injuries, activities/participation measures were the most valid measure of disability impact (Smedema, Ruiz, Mohr, 2017). The WHODAS in the present study demonstrated high internal consistency (α = .92).

***Depression and anxiety*.** The present study measured depression and anxiety through the Patient Health Questionnaire four-item (PHQ-4). The PHQ-4 is commonly used as both a screener and measure for depression and anxiety or general psychological distress in research, general population, healthcare, and psychiatric settings (Kroenke, Spitzer, Williams, & Löwe, 2009). The scale was developed by combining the Patient Health Questionnaire two-item (PHQ-2) scale (Kroenke, Spitzer, & Williams, 2003), which also constitute the first two items of the Patient Health Questionnaire eight-item (PHQ-8) scale, and the first two items of the Generalized Anxiety Disorder seven-item (GAD–7) measure (Kroenke et al., 2009). The items from the PHQ-8 and GAD-7 that constitute the PHQ-4 have demonstrated excellent validity when assessing levels of clinical patient depression and anxiety disorders (Kroenke et al., 2009; Lowe et al., 2010), and a strict two-factor structure was validated in large samples in the United States and Germany (Lowe et al., 2010). Items are measured on a four-point scale from "0 = not at all" to "3 = nearly every day" regarding how often the participant has been bothered by symptoms (e.g. "feeling nervous, anxious or on edge"). Internal consistency has been good in validation studies by Lowe et al., (α= .82; 2010) and Kroenke et al., (α = .85; 2009). The PHQ-4 in the present study demonstrated good internal consistency (α = .86).

Self-Determination Measures

Instruments using a self-determination approach must measure an ecologically valid representation of self-determination constructs for transition-aged youth within a VR program. The main constructs of autonomy, competence, and relatedness as outlined by Deci and Ryan (2000a, 2000b) formed the basis of each type of measurement. Used with the VR environment, autonomy was conceptualized as the level of internal motivation to engage in VR services, competency was conceptualized as the level of vocational self-efficacy, and relatedness was conceptualized as the degree of working alliance. Self-determination measures in the current investigation were

Autonomy. Autonomy was measured using the 14-item Vocational Rehabilitation Internal Motivation Scale (VRIMS). The VRIMS scale was developed by the Rehabilitation Research and Training Center on Evidence-Based Practice in VR (RRTC-EBP VR) and includes items assessing intrinsic motivation to work and items assessing the internal motivation to apply for vocational rehabilitation services. Each item is rated on a five-point Likert type scale ranging from strongly disagree to strongly agree. Previous studies found that the VRIMS demonstrated acceptable reliability ($\alpha = .80$) (Dutta et al., 2017). The VRIMS in the present study demonstrated questionable internal consistency ($\alpha = .66$).

Competency. Level of competency was assessed using the Vocational Self-Efficacy Scale (VSES). The scale has 24 items and two factors that assess confidence in one's ability to perform both job seeking and job performance activities. The VSES was developed based on the Life Skills Inventory developed by Chan, Rubin, Lee, and Pruett (2003) which was operationalize life skills relevant to living in the community and working. Each item is rated on a five-point Likert-type scale is ranging from strongly agree to strongly disagree. A high internal

consistency reliability estimate (Cronbach's α = .94) was reported for the VSES in a sample of individuals with severe mental illness in a clubhouse setting (Fitzgerald, 2014). The VSES was also used in a large sample study validating the Vocational Rehabilitation Engagement Scale (Dutta et al., 2017) where it had excellent psychometric properties (α = .96), consistent with the present study which demonstrated high internal consistency (α = .90).

Relatedness. Relatedness was measured by the abbreviated, 12-item version of the *Working Alliance Inventory* (WAI). The WAI was originally operationalized by (Horvath & Greenberg, 1989). The WAI has been validated by Tracey and Kokotovic (1989) to assess the goal, bond, and task dimensions of working alliance. The WAI-12 has also been modified for use by counselors in a VR setting (McMahon, Shaw, Chan, & Danczyk-Hawley, 2004), which reported a high reliability for the consumer version of the WAI (α = .93). Horvath, Del Re, Fluckiger, and Symonds (2011) reported an association between working alliance and positive outcome of therapy (*r* = .275; 95% CI [.25, -.30]). The WAI in the present study demonstrated high internal consistency (α = .90).

Outcome Measures

Vocational rehabilitation engagement. Vocational rehabilitation engagement was measured by the seven-item version of the Vocational Rehabilitation Engagement Scale (VRES-7). The VRES was developed by researchers in the Rehabilitation Research and Training Center on Evidence-Based Practice in Vocational Rehabilitation. The VRES-7 was created to include the cognitive, affective, and behavioral dimensions of engagement. Each item was rated on a five-point Likert-type rating scale (i.e. "I communicate with my rehabilitation counselor regularly") ranging from "strongly disagree" to "strongly agree." The scores on the seven-item

survey may be summed to determine overall levels of engagement in VR services. The VRES in the present study demonstrated good internal consistency (α = .88).

Satisfaction with life. Participant's satisfaction with life was measured by the Satisfaction with Life Scale (SWLS) developed by Diener, Emmons, Larsen, and Griffin (1985). The SWLS is a five-item instrument designed to measure global cognitive judgments regarding satisfaction with one's life. Item content includes participant's own judgments of the current status of their life (i.e. "In most ways my life is close to my ideal"). Responses were rated on a seven-point Likert type scale ranging from "strongly disagree" (1) to "strongly agree" (7), and merits a total score from five to 35. Internal consistency estimates have been demonstrated to be moderate to high (α = .79-.89), while test-retest reliabilities over a two-month interval was also moderate to high (α = .64-.84) (Pavot & Diener, 1993). The scale has been widely used as an outcome measure in rehabilitation, and has been validated internationally and for different ages and populations, including TAYA (Hultell & Petter Gustavsson, 2008; Tucker, Ozer, Lyubomirsky, & Boehm, 2006). The present investigation was measured The SWLS in the present study demonstrated good internal consistency (α = .87).

Table 3.4. Variable and Measure characteristics

Predictor Variables	**Measure**	**# Items**	***Range***	**α**	**skew**	**kurtosis**
Contextual Variables						
Functional Disability	WHODAS 2.0	12	1-5	.92	0.16	-1.27
Perceived Social Support	MSPSS	12	1-7	.91	-0.89	1.8
Depression/Anxiety	PHQ-4	4	0-3	.86	0.11	-1.2
Socio Economic Status	Composite	5-7	5-80	N/A	-0.3	-0.57
General Disposition	CSES	12	1-5	.82	0.32	-0.09
Self-Determination Variables						
Autonomy	VRIMS	14	1-5	.66	0.19	-0.56
Competency	VSES	19	1-5	.90	-0.06	-0.46
Relatedness	WAI-12	12	1-7	.90	-0.66	0.29
Outcome Variables	**Measure**	**# Items**	***Range***			
Work Engagement	VRES	9	1-5	.875	-0.37	1.34
Life Satisfaction	SWLS	5	1-7	.868	-0.9	1.2

Note: World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0), Multidimensional Scale of Perceived Social Support (MSPSS), Patient Health Questionnaire four item (PHQ-4), Socio-Economic Status (SES), Core Self-Evaluation Scale (CSES), Vocational Rehabilitation Internal Motivation Scale (VRIMS), Vocational Self-Efficacy Scale (VSES), Working Alliance Inventory (WAI-12), Vocational Rehabilitation Engagement Scale (VRES), Satisfaction with Life Scale (SWLS)

CHAPTER 4
Results

The purpose of the present investigation was to investigate an integrated SDT model including personal, environmental, and disability-related variables in explaining variance in VR engagement. Data analysis was conducted in Statistical Package for Social Sciences (SPSS) version 23, as well as R statistical package, using the Methods for the Behavioral, Educational and Social Sciences (MBESS) package (Kelly, 2007), the Companion to Applied Regression (CAR) package, and scripts to calculate confidence intervals for accurate estimates of effect sizes. Moderation analysis was performed following Barron and Kenny's (1986) guidelines, informed by Hayes (2009) guidance on partitioning and intervening relationships impacting the mediator/moderator analysis proposed by Barron and Kenny. The SPSS PROCESS v2.16 macro (Hayes, 2012) regression-based mediation and moderation analysis were used to estimate the total and direct effects. The PROCESS procedure utilized 1,000 bootstrap samples to identify significant indirect effect (Hayes, 2013).

This study also utilized a hierarchical regression analysis (HRA), which can be used to measure the incremental variance accounted for by each predictor set to determine the unique contribution of each predictor variable to the variance of the dependent variables. The outcome (dependent) variable in this study was the level of work engagement of participants as measured by the Vocational Rehabilitation Engagement Scale (VRES). Several measures, each representing a different construct are proposed in the study, thus items were analyzed using composite scores from all scale items.

Data Screening

Prior to analysis, the data was screened to examine overall distribution and assumptions of normality (e.g. skewness, kurtosis), as well as central tendency, and variation, presented in

Table 3.4. In addition, descriptive statistics were utilized to provide a broad summary of the data. A total of 183 individuals began the survey, and 145 completed the survey. Responses missing more than 5% of data were deleted, and the remaining 137 respondents had either completed surveys, or were missing less than 5% of responses. This method is preferred over case deletion, as it avoids decreasing the statistical power of the sample by retaining cases and maintain the largest appropriate sample size and representativeness of the overall sample. For cases that were missing less than 5%, a simple imputation method was utilized to replace missing values (Fox-Wasylyshyn & El-Masri, 2005).

Multicollinearity was assessed using variance inflation factors and tolerance values. No variance inflation factors values exceeded 10, with values ranging from 1.0 to 2.6. Tolerance values were greater than .10 for all participants, with values ranging from .38 to .99. These finding suggest that there is no multicollinearity in the dataset. In addition, outliers for all variables in the HRA were also assessed using Mahalanobis distance, and one outliers was found and deleted, reducing the sample size to 136.

Hierarchical Regression Analysis

The first research question addressed how personal factors, environmental factors, and self-determination factors associate with VR engagement in a sample of transition-aged adults with disabilities.

Simple regression models tested each set of predictors compared to the dependent variable (vocational rehabilitation engagement). Regression is widely used in rehabilitation literature, and is useful in testing the influence that individual or sets of predictors have on a dependent variable (Cohen, Cohen, West, & Aiken, 2002; Hoyt, Imel, & Chan, 2008; Hoyt, Leierer, & Millington, 2006). In addition, regression has been widely used in testing theory-

driven research within the field of rehabilitation. In uncovering the individual relationship between a single set of predictors, such as demographic variables to the dependent variable, work engagement, multiple hierarchical regressions were performed for each predictor set.

Correlational, Mediation, Moderation Analyses

The correlations among the predictor variables and criterion variables ranged from small to large, with Pearson product-moment correlation coefficients ranging from .016 to .70. The correlation matrix for all variables are presented in Table 4.1, below.

Table 4.1. Pearson two-tailed correlations for all predictor and outcome variables (N = 136).

	1	2	3	4	5	6	7	8	10
1. SES									
2.WHODAS	-.37**								
3. PHQ4	-.21*	.70**							
4. MSPSS	.18*	-.29**	-.38**						
5. CSE	.07	-.58**	-.68**	.41*					
6. VRIM	.11	-.46**	-.50**	.18*	.50**				
7. VSE	.17*	-.36**	-.35**	.36*	.44*	.50*			
8. WAI	-.06	-.13	-.12	.12	.08	.17*	.211*		
9. VRES	-.016	-.31**	-.24**	.37*	.25**	.4**	.48**	.44*	
10. LS	.1	-.14	-.31**	.43**	.49**	.06	.33**	.14	.16

Note: Two tailed correlations. *p < .05, **p < .01

Correlations above .40 were found between core self-evaluations and functional disability (WHODAS2.0; r = -.58, p < .01), social support (MSPSS; r = -.68, p < .01), as well as the self-determination constructs of autonomy (VRIM; r =.50, p < .01) and competency (VSE; r = -.44, p < .01), and life satisfaction (r = .49, p < .01). Similarly, functional disability was found to have a medium to large correlation to anxiety and depression (PHQ4; r = .70, p < .01), and low to medium negative correlation with the self-determination constructs of autonomy (r = -.46, p < .01).

Correlations below .40 were found between functional disability and competency (r = -.36, p < .01), as well as vocational rehabilitation engagement (r = -.31, p < .01), and social

support (r = -.29, p < .01). Socio-economic status (SES) was significantly negatively associated with functional disability (r = -.37, p < .01) and anxiety and depression (r = -.21, p < .05), and had small associations with social support (r = .18, p < .05) and competency (r = .17, p < .05). Competency was found to have negative associations with functional disability (r = -.36, p < .01) and depression and anxiety (r = -.35 p < .01), and positive associations with social support (r = .36, p < .01) and relatedness (r = .17, p < .01).

Research Question One

A hierarchical regression analysis (HRA) was used determine the relationships between the combined sets of predictors on participant's work engagement in a VR setting. Hierarchical regression analysis has been widely used in the social sciences, as well as in rehabilitation (Hoyt et al., 2008; Hoyt et al., 2006; Hoyt & Mallinckrodt, 2012). This method allows statistical control for variables such as age, gender, and race/ethnicity within the HRA model (Cohen et al., 2002), and allows the researcher to understand the shared variance in each predictor set related to the outcome. The use of HRA inputs sets of predictors sequentially, based on theory, to understand the increased explained variance added by each additional block of variables. The results including R^2 (ΔR^2), the unstandardized regression coefficients (B), and standardized coefficients (β) for all predictor variables at initial entry into the model and the final model are presented in Table 4.1. Both standardized and unstandardized regression coefficients are presented with 95% confidence intervals, as a suggested best practice for reporting and interpreting data (Hoyt et al., 2008). The proposed model is displayed graphically in Figure 4.1.

An *a priori* specification for the HRA was identified to enter the variables in the following order:

(1) Personal factors (gender, age, general disposition),

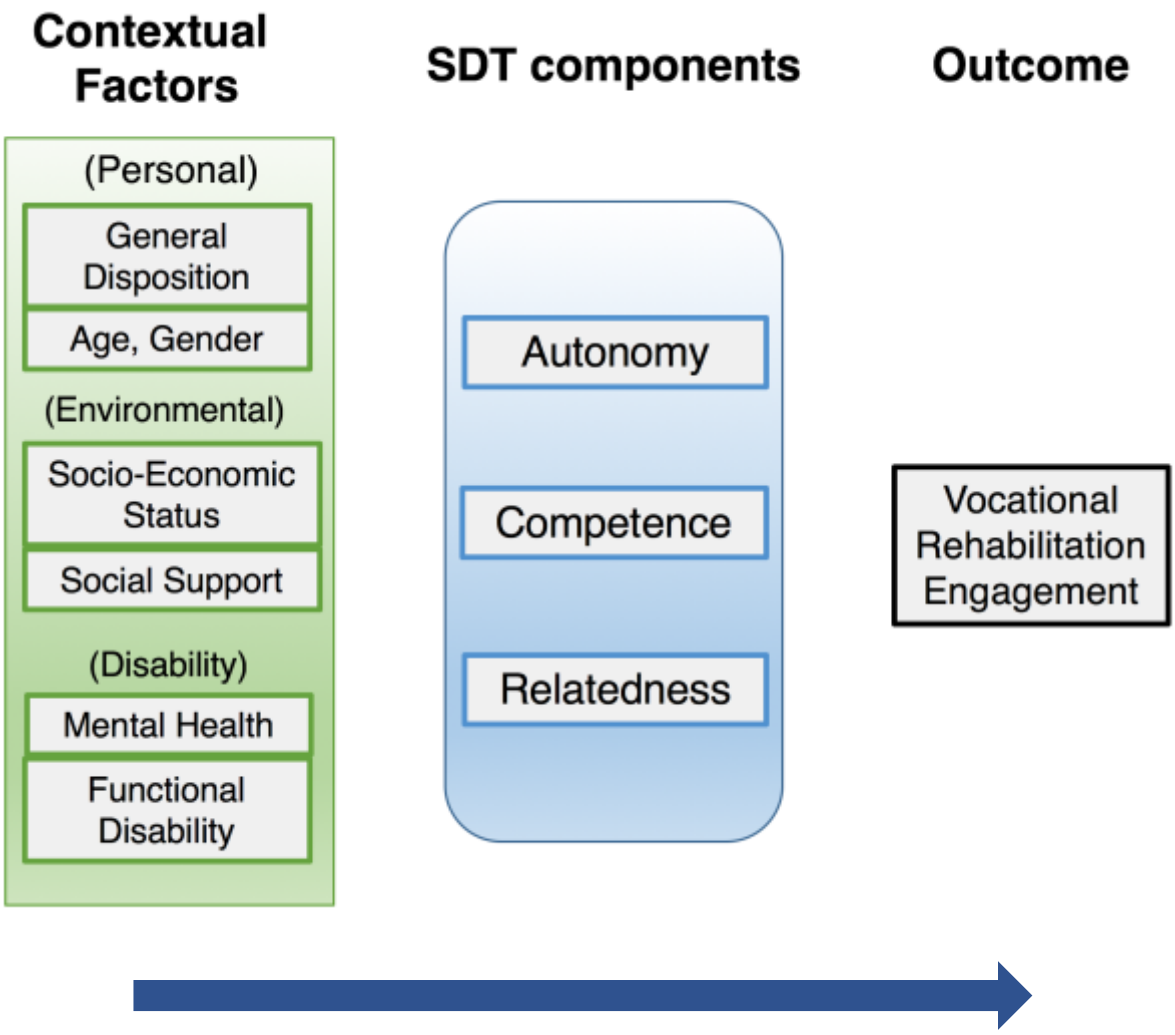
(2) Environmental factors (Socio-economic status, social support)

(3) Disability-related factors (Depression and anxiety, functional disability)

(4) Self-determination variables (measures of autonomy, relatedness, and competence)

Figure 4.1, below, is a graphical representation of the proposed self-determination model in predicting engagement in VR. HRA steps one through three are represented under the umbrella of contextual factors, and autonomy, competence, and relatedness are under self-determination.

Figure 4.1 Self-Determination Model of Vocational Rehabilitation Engagement



The first step of the HRA investigated the role of personal factors, which included age, gender, and Core Self-Evaluations (as a predictor of general disposition). Step one accounted for approximately 12% of the total variance in VR engagement R= .345, R^2=.119, F (3,132) = 5.96, $p < .01$. The standardized partial regression coefficients indicated that age was negatively associated with VR engagement, although not significant (β = -0.04, t=-0.556, *95% CI* [-0.2, 0.12]). The unstandardized partial regression coefficient for gender indicated a negative relationship with VR engagement (note: female = 1, male = 2), B = -2.87, t (-2.85), *95%* CI [-4.87, -0.88], while general disposition as measured by the Core Self-Evaluation Scale (CSES) was positively associated with VR engagement β = 0.20, t (2.463) 95% CI [0.03, 0.37].

Step two of the HRA investigated the role of environmental factors using the Multidimensional Scale of Perceived Social Support (MSPSS) and Socio-Economic Status (SES). In total, the environmental factors accounted for approximately 7.1% of the total variance in VR engagement R=.436, R^2=.19, F (2, 130) = 5.55, $p < .01$. The standardized partial regression coefficients indicated that social support was positively associated with VR engagement, β = 0.29, t (3.33) 95% CI [0.11, 0.47]. The standardized partial regression coefficient for SES indicated a non-significant negative relationship, β = -0.09, t (-1.09), 95% CI [-0.24, 0.07].

The third step of the HRA evaluated the role of disability-related factors, including functional disability as measured by the WHODAS 2.0 and depression and anxiety as measured by the PHQ-4. Disability-related factors accounted for a small amount of the total variance in VR engagement at 5.3%, R=.493, R^2=.243, F (2,128) = 4.48, $p < .05$. The standardized partial regression coefficients indicated that functional disability was negatively associated with VR engagement β = -0.34, t (-2.91) *95*% CI [-0.57, -0.11]. Depression and anxiety scores were

positively associated with VR engagement, although not significant β = .081, *t (*0.74), *95%* CI [-0.16, 0.32].

The final step of the HRA investigated the role of the self-determination components of relatedness (WAI), competency (VSES), and autonomy (VRIM). The self-determination variables accounted for 24% of the total variance in VR engagement R = .695, R^2 = .48, F (3,125) = 5.519.36, p < .01. The standardized partial regression coefficient for each of the self-determination constructs were positively associated with VR engagement and statistically significant. The standardized partial regression coefficient for the variables are as follows: relatedness β = 0.29, *t (*4.25) *95% CI* [0.15, 0.44], competency β = 0.23, *t (*2.81) *95%* CI [0.07, 0.4], and autonomy β = 0.26, *t (*2.95) *95%* CI [0.09, 0.44].

The final model accounted for 48% of the variance in VR engagement (R = .695, R^2 = .483, *SE* = 4.52, F (3, 125) = 19.361, p < .01). Based on established guidelines by Cohen (1988; Cohen et al., 2002) and the APA task force for statistical inference (Henson & Smith, 2016), this represented a small to medium effect size. In the final step of the model, social support (β = 0.12, 95% CI [0.12, 0.43]), SES (β = -0.06, 95% CI [-0.32, -0.03]), functional disability (β = -0.12, 95% CI [-0.41, -0.02]), and the self-determination constructs of relatedness (β = 0.13 95% CI [0.15, 0.44]), competency (β = 0.10, 95% CI [0.07, 0.4]), and autonomy (β = 0.24, 95% CI [0.09, 0.44]) were all significant predictors of VR engagement after controlling for all other variables in the model. Functional disability and SES were negatively associated with VR engagement, and social support, relatedness, competency, and autonomy were all positively associated. The strongest predictor in the model was autonomy.

Table 4.2 Hierarchical Regression Analysis for Predictors of Vocational Rehabilitation Engagement (*N*=136)

				At Entry Into Model				Final Model			
Variables		R^2	ΔR^2	*B*	SE *B*	β	95% CI β	*B*	SE *B*	β	95% CI β
Step 1	Personal factors		.12**								
	Age			-0.08	0.134	-0.04	(-0.2, 0.12)	0.15	0.110	0.091	(-0.04, 0.22)
	Gender			-2.87	1.01	-0.24	(-0.41, -0.08)	-1.3	0.851	-0.106	(-0.24, 0.03)
	CSE			0.16	0.07	0.2	(0.08, 0.37)	-0.13	0.078	-0.162	(-0.36, 0.03)
Step 2	Environmental factors	.19	.071**								
	MSPSS			0.13	0.04	0.29	(0.11, 0.47)	0.12	0.034	0.275**	(0.12, 0.43)
	SES			-0.03	0.026	-0.09	(-0.24, 0.07)	-0.06	0.023	-0.178*	(-0.32, -0.03)
Step 3	Disability factors	.24 *	.053*								
	PHQ4			0.16	0.22	0.08	(-0.16, 0.32)	0.218	0.183	0.124	(-0.08, 0.33)
	WHODAS			-0.18	0.06	-.34	(-0.57, -0.11)	-0.12	0.054	-0.214*	(-0.41, -0.02)
Step 4	Self-Determination	.48 *	.24 **								
	Relatedness							0.13	0.030	0.29**	(0.15, 0.44)
	Competency							0.11	0.037	0.23**	(0.07, 0.4)
	Autonomy							0.24	0.081	0.26**	(0.09, 0.44)

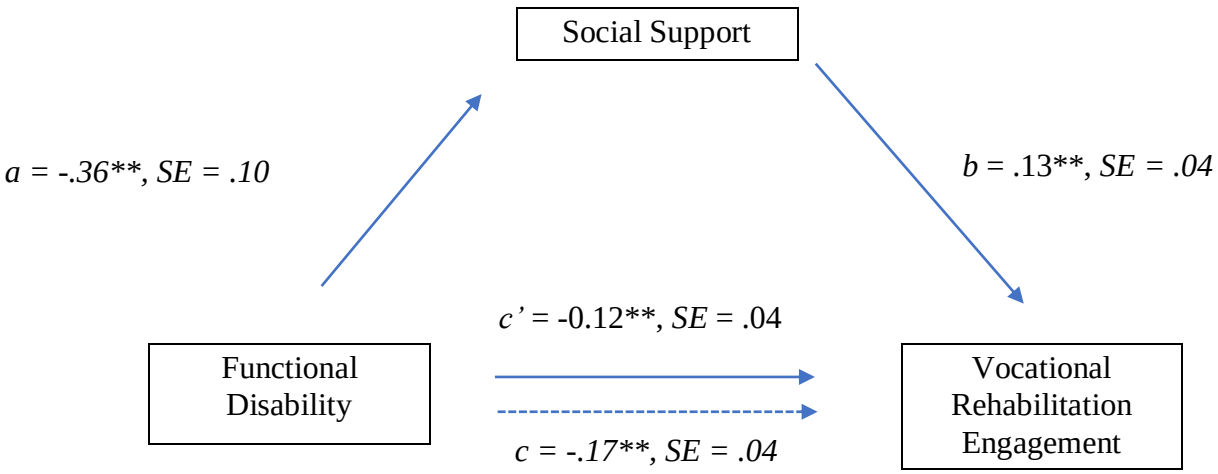
Note: * p <.05, ** p < .01

Research Question Two

The second research question addressed the relationship between functional disability status and social support, predicting that functional aspects of disability will be negatively associated with social support and vocational rehabilitation engagement.

Correlational analysis indicated that proposed mediator of social support was negatively associated with functional disability (r = -0.3, $p < .01$) and positively with VR engagement (r = 0.37, $p < .01$). Social support and functional disability were also negatively associated (r = -.31, $p < .01$). A mediation analysis was computed to evaluate social support as a mediator of the relationship between relatedness and VR engagement. See Figure 4.2 for a graphical representation of the mediation model and unstandardized ordinary least squares (OLS) regression coefficients for each path.

*Figure 4.2***.** Path coefficients for simple mediation analysis vocational rehabilitation engagement (N = 136).



Note: Dotted line denotes the effect of functional disability on vocational rehabilitation engagement when social support is not included as a mediator. *a*, *b*, *c*, and *c*' are unstandardized ordinary least squares (OLS) regression coefficients.
$^{+}p > .05$, $*p \leq .05$, $**p < .01$

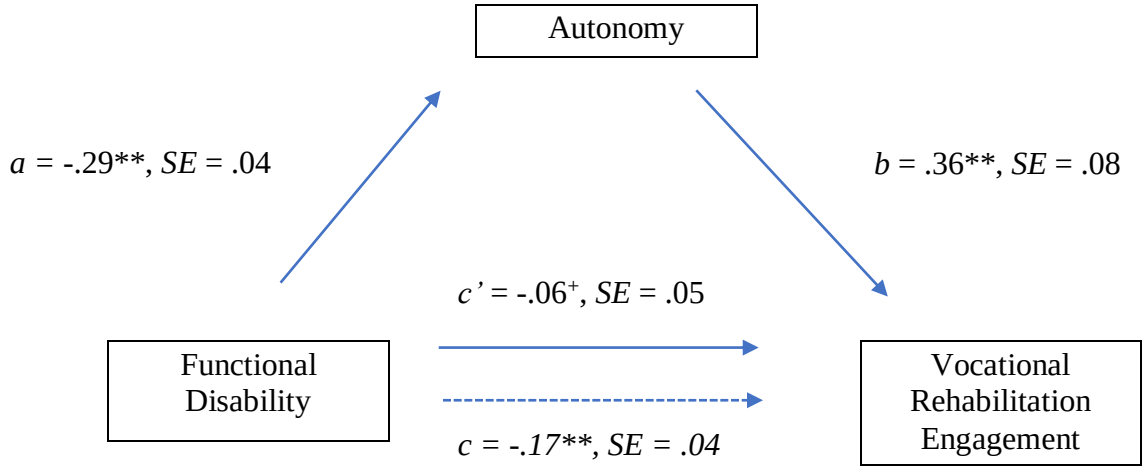
In the proposed mediation model, functional disability was associated with lower levels of VR engagement (c = -.*17*, SE = .04, t (135) = 14.55, p < .01) and lower levels of social support (a = -.*36*, SE = .10, t (135) = -3.55, p < .01). Social support was significantly associated with VR engagement (b = .13, SE = .04, t (134) = 3.66, p < .*0*1). The direct effect between functional disability and VR engagement was significant after controlling for the effects of social support as a mediator (c' = -.12, SE = .04, t (134) = -2.71, p < .01). The indirect effect, the difference of the total and direct effects, an estimate of the social support acted as a mediator for the overall model, utilized as it has been suggested to be a more robust towards specification error (Imai, Keele, & Tingley, 2010). The indirect effect was calculated using a bias-corrected bootstrap method informed by Hayes PROCESS model, and was found to be significant (b = -.047, bootstrap SE =.02, bootstrap 95% CI [-.11, -.01]. This procedure is a suggested alternative to the Stobel procedure to correct for low power and assumptions of symmetry (Hayes & Scharkow, 2013; Hoyt et al., 2008). The R^2 mediation effect size was significant (R^2 = .05, bootstrap SE = .03, bootstrap 95% CI [0.02, 0.13]. The results suggest that social support has a partial mediating role in the relationship between functional disability and VR engagement.

Research Question Three

The third research question addressed the role of the self-determination construct of autonomy as a potential mediator of the relationship between functional disability and vocational rehabilitation engagement. It was predicted that autonomy would be positively correlated to engagement in vocational rehabilitation and negatively correlated with functional disability construct of self-determination, and that autonomy will have a mediating relationship between functional disability and vocational rehabilitation engagement.

Correlational analysis indicated that autonomy and functional disability were significantly negatively associated, (r = -.46, p < .*01*), that autonomy and engagement in vocational rehabilitation were positively associated (r = .40, p < .*01*), and functional disability and engagement in vocational rehabilitation were negatively associated (r = -.31, p < .*01*). A mediation analysis was computed to evaluate autonomy as a mediator of the relationship between functional disability and VR engagement. See Figure 4.3 for a graphical representation of the mediation model and OLS regression coefficients.

Figure 4.3. Path coefficients for autonomy as a mediator for functional disability and vocational rehabilitation engagement (N = 136).

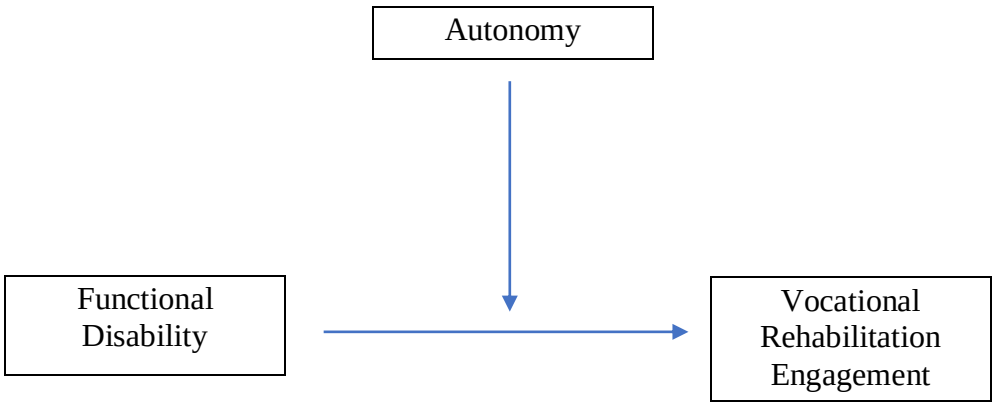


Note: Dotted line denotes the effect of functional disability on vocational rehabilitation engagement when autonomy is not included as a mediator. *a*, *b*, *c*, and *c*' are unstandardized ordinary least squares (OLS) regression coefficients.
$^{+}p > .05$, $*p \leq .05$, $**p < .01$

Functional disability was associated with lower levels of VR engagement (c = -.*17*, SE = .05, t (135) = -3.80, p < .01) as well as the proposed mediating variable of autonomy (a = -.*29*, SE = .04, t (134) = -6.37, p < .*01*). Autonomy demonstrated an association with VR engagement as well (b = .36, SE = .08, t (133) = 4.61, p < .*01*). The direct effect between functional

disability and VR engagement was not significant after controlling for the effects of autonomy as a mediator (*c'* = -.06, *SE* = .05, *t* (133) = -1.35, *p* > .05), and the indirect effect estimating the amount of mediation was significant, demonstrated significance utilizing a bias-corrected bootstrap method informed by Hayes PROCESS model (*b* = -.10, bootstrap *SE* =.03, bootstrap 95% CI [-.16, -.06]. The R^2 mediation effect size was small, but significant (R^2 = .09, bootstrap *SE* = .04, bootstrap 95% CI [.02, .18]). The results suggest that autonomy mediates the relationship between functional disability and VR engagement.

Figure 4.4. Alternate path diagram representations of the moderation model.



Note. Predictor variable = Functional disability, outcome variable = Vocational Rehabilitation Engagement, proposed moderator variable = Autonomy

Following the mediation analysis, a test of moderation was conducted as a competing hypothesis to determine if levels of autonomy meaningfully impact the relationship between VR engagement and functional disability. The moderation analysis utilized the interaction effect between functional disability and autonomy in predicting levels of VR engagement using Hayes PROCESS methods and guidelines originally developed by Aiken and West (1991), and refined by Frazier (2004) for use in counseling psychology research. To avoid multicollinearity with the

interaction term, the variables were standardized and centered and an interaction term of functional disability and autonomy was calculated (Aiken & West, 1991). The first step found that the standardized partial regression coefficients for functional disability (β = - 0.12, t (133) = -1.4, $p > .05$) was not significant, while autonomy (β = .40, t (133) = 4.61, $p < .01$) was significant. Similarly, for step two the standardized partial regression coefficients for functional disability (β = -.13, t (132) = -1.4, $p > .05$) was not significant, while autonomy (β = .40, t (132) = 4.6 $p < .01$) was significant, and the interaction of autonomy and functional disability was not significant (β = -.05, t (132) = -0.63 $p > .05$). The full regression coefficients can be found below in Table 4.3.

Table 4.3 Regression coefficients for autonomy moderation hypothesis

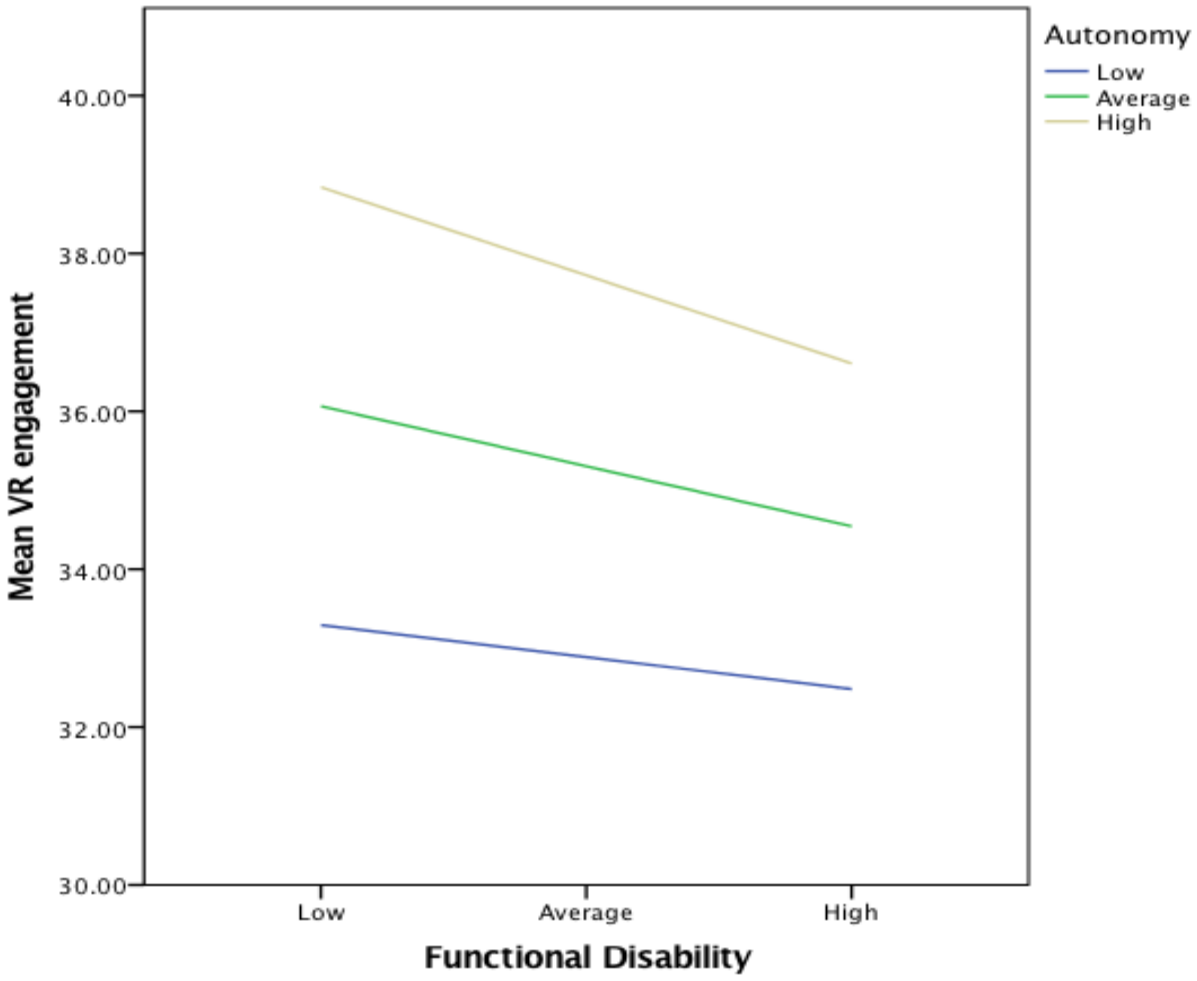
Variables	R^2	ΔR^2	B	SE B	β	p
Step 1	**.22					
Functional Disability			-0.06	.05	-0.12	.18
Autonomy			0.36	.08	0.40	.00
Step 2	.22	*.00				
Functional Disability			-0.07	.05	-0.13	.16
Autonomy			0.36	.08	.40	.00
Interaction			-.01	.007	-.05	.53

Note: ** p <.01, * p < .05

The overall moderation model was found to be significant, F (3, 132) = 13.61, $p < .01$, R^2 = .224, although the addition of the mean-centered interaction of functional disability and autonomy in the second step added negligible variance (ΔR^2=.002). When holding levels of autonomy at different ranges, no relationship was found between functional disability and VR engagement. For low levels of autonomy, the partial regression coefficient for functional

disability was b = -.036, t (132) = -.62, p > .05, and for mean levels of autonomy functional disability was b = -0.07, t (132) = -1.52, p > .05, and for high levels of autonomy b = -0.10, t (132) = -1.50, p > .05. The interaction effects can be found in figure 4.5. Overall, the findings did not support a meaningful moderation effect of autonomy on the relationship of functional disability and VR engagement.

Figure 4.5. Interaction effect of functional disability and Autonomy on VR engagement.



CHAPTER 5
Discussion

The state-federal VR agencies and their partners serve heterogeneous populations of consumers with disabilities of diverse backgrounds, including individuals with different socioeconomic statuses, dispositional traits, levels of available social support, and level of disability/functional limitations experienced. Providing services to transition aged youth and young adults with disabilities has proven to be a challenge as research has focused on disability type (Beveridge & Fabian, 2007; Dobak, 2014; Dunham, Schrader, & Dunham, 2000; Gonzalez, Rosenthal, & Kim, 2011) rather than other factors that may limit outcomes. Supporting empowerment has been a central topic of discussion in rehabilitation literature with some authors presenting arguments that closely mirror self-determination (e.g. Bolton & Brookings, 1996, Szymanski, 1994, Wagner & McMahon, 2004). Emener remarked on the importance of supporting consumer internal motivation, writing "a healthy self-concept, meaningful interpersonal relationships, and supportive social networks, combined with a high level of self-esteem and self-management" (1991, p. 10) are guiding principles to support empowerment.

The importance of empowerment, choice, and decision making within rehabilitation is deeply ingrained into the literature, as well as professional guidelines and legislation. The 1992 Rehabilitation Act Amendments specifically highlight the fundamental human right for people with disabilities to "enjoy self-determination [and] make choices," and the 2014 Workforce Investment and Opportunity Act legislation emphasized the need to "… empower individuals with disabilities to maximize opportunities for competitive integrated employment… [and] facilitate independent decision-making and informed choice, as the individual makes decisions regarding employment and career advancement" (Workforce Innovation and Opportunity Act, 2014, p. 1677).

In the past 40 years, rehabilitation has gone through significant philosophical shifts (Emener, 1991; Emener, Patrick, & Hollingsworth, 1984). It can be argued that these shifts have positively influenced the field of rehabilitation by refining the proliferation of services and responsibilities of rehabilitation counselors in staying true to its defining mission and philosophy. Many scholars argue that VR services serve the needs of the agency, a system that many regarded as paternalistic and disempowering (Emener et al., 1984; Hahn, 1991; Holmes, 1993; Patterson & Leach, 1987; Vash, 1991). This service structure traditionally reinforced a power differential that could be detrimental to consumer empowerment and thus positive rehabilitation outcomes. Encouraging active participation by both the consumer and counselor is an effective way to facilitate consumer self-determination, which may lead to meaningful engagement in VR services.

Currently, there is no theoretical framework in rehabilitation literature that captures the role of personal factors, environmental factors, and disability-related factors as they related to VR engagement, although preliminary research has investigated the role of self-determination constructs as a work motivation model (Tansey, Iwanaga, Bezyak, & Ditchman, 2017). The present study captured a diverse population of young adult consumers of VR or partnership programs with heterogeneous disabilities. Broadly, past research has taken a disability-specific approach in understanding positive outcomes and determining best practices. This study sought to investigate SDT factors that can empower representative VR consumers with heterogeneous disabilities using existing the existing VR service structure, and identify factors that lead to higher levels of engagement, which can be conceptualized as a proxy for later post-secondary education and employment outcomes.

Summary of Findings

The primary analysis (Research Question One) utilized a hierarchical regression analysis (HRA) to determine the relationships between the combined sets of predictors on participant's VR engagement as a proxy for work engagement. In the present study, of predictors were entered sequentially based on theory to understand the increased explained variance added by each step of variables. The results including R^2, the change in R^2 (ΔR^2), unstandardized regression coefficients (B), and standardized regression coefficients (β) for all predictor variables are presented in Table 4.1.

The correlations among the predictor variables ranged from small to large, with Pearson two-tail product-moment correlation coefficients ranging from .016 to .70. The correlation matrix for all variables are presented in Table 4.1.

Medium to high correlations were found between general disposition (CSE) and several factors, including functional disability, social support, and the self-determination constructs of autonomy and competency, as well as life satisfaction. This suggests that general dispositional traits are positively associated with higher levels of social support, autonomy, competence, and life satisfaction, and negatively with functional disability. The significance of these associations could be better understood through future research, but this finding implies that individual dispositional traits may be important predictors in predicting engagement in VR.

Similarly, functional disability had a medium to large association with anxiety and depression, and low to medium negative association with autonomy, which provided preliminary evidence regarding the connection of functional disability and self-determination constructs that were investigated using mediation analysis. Overall, functional disability, core self-evaluations and the competency construct were most highly correlated with other variables. All the self-

determination variables were also highly correlated with VR engagement, suggestive of a strong association with higher levels of engagement in VR, and preliminary evidence of the predictive value of a SDT model of VR engagement.

A hierarchical regression analysis formed the basis of addressing the first research question, while correlation and mediation analyses addressed research questions two and three. A moderation was utilized to investigate question three.

Primary Analysis

The first research question investigated how well a self-determination model captured variance in the outcome of VR engagement. Variables were partitioned into four sets, personal (age, gender, general disposition), environmental (socio-economic status, social support), disability-related factors (functional disability and depression/anxiety), and finally the self-determination theory components. The overall HRA predicted 48% of the total variance (R = .695, R^2 = .483, SE = 4.52, F (3, 125) = 19.361, $p < .01$) shared between the set of predictors and VR engagement, and based on Cohen's (1988) guidelines the change in R^2 constituted a large effect size. Each set of predictors explained a statistically significant amount of the variance in VR engagement.

Personal factors accounted for 12% of the variance in VR engagement, which included gender and general disposition. Males had lower levels of VR engagement compared to female counterparts. In addition, a one SD change in general disposition was shown to increase VR engagement by 0.16 SD, controlling for all other personal factor variables. Personal factors were not statistically significant when controlling for other variables in the final model.

Environmental factors contributed 7.1% of the variance in the total model, with social support accounting for a statically significant amount of variance at entry into the HRA. Higher

levels of social support predicted higher levels of engagement in VR. SES was significant in the final model, with increases in SES predicting decreases in VR engagement, possibly suggesting that higher levels of SES are disincentives or barriers to perceived engagement in VR.

Disability-related factors were entered in step three, and contributed 5.3% of unique variance to the total model. Functional disability was significant at entry into the model and in the final model, and higher levels of functional disability predicted lower levels of engagement in VR. This suggests that young adults with more severe disabilities perceive poorer engagement in VR.

The final model included the SDT constructs and accounted for 24% of the variance of the total model, and contributed the most variance to the model at almost 50% of the total variance. All three SDT constructs, relatedness, competency, and autonomy were statistically significant predictors of VR engagement after controlling for all other variables in the final model. Participants that reported higher levels of each of the self-determination constructs predicted higher levels of VR engagement, with relatedness predicting the highest increase, followed by autonomy, and competency.

This was the first study to explore a SDT framework for TAYA within vocational rehabilitation. In addition, the present research utilized a heterogeneous sample of disability, to expand on the significant literature directed at transition-aged youth (Nader-Grosbois, 2014; Okon & Webb, 2014; Shogren, et al., 2015; Simonsen & Neubert, 2013; Suk-Hyang Lee, et al., 2015; Wehmeyer, et al., 2013), and particularly developmental and intellectual disability populations. The study provided initial evidence that a self-determination model has predictive value in understanding VR engagement in a population of young adults with disabilities engaged in VR services. Self-determination predictors were the strongest set of predictors in the entire

model, and explained half of the overall variance, after controlling for the three previous steps of personal factors, environmental factors, and disability-related factors.

Given that the overall model accounts for a statistically significant amount of the variance, additional hypotheses were tested to investigate the relationships between VR engagement and environmental, disability-related, and self-determination variables.

Mediation and Moderation Analysis

Research questions two and three addressed the relationship between the following sets of factors: a) functional disability, social support, and engagement b) autonomy, functional disability, and engagement. Secondary analyses were investigated as mediation models.

The hypothesis that functional disability has a negative association with social support was supported, with the two variables having a weak negative association. Mediation analysis indicated that the overall model was significant, and there was evidence that social support demonstrated a weak, partially mediating role between functional disability and VR engagement. The weak mediating role may suggest that level of disability more directly predicts VR engagement, while the level of social support outside of the VR environment (i.e. stronger friend or family supports) does not necessarily predict higher levels of engagement, and ultimately employment, postsecondary education, or independent living goals.

The role of social support has been identified as an important predictor for people with disabilities (Carona, Moreira, Silva, Crespo, & Canavarro, 2014; Chronister, Johnson, & Berven, 2006; Hassall, Rose, & McDonald, 2005), and more broadly in transition and VR (Balcazar & Taylor-Ritzler, 2009; Chronister et al., 2008; Jung, Schaller, & Bellini, 2010). One study found that children and adolescents with cerebral palsy were more likely to perceive social support as negative when compared to non-disabled peers, but also that promoting social support can

increase health related quality of life (Carona et al., 2014). Social support was most strongly associated with general disposition and life satisfaction, followed by competency and VR engagement. This study found that higher levels of social support predicted higher levels of VR engagement in the HRA model (β = .275, 95% CI [0.12, 0.43]), after controlling for the effect of other variables, but that it was not a mediator of the relationship between relatedness and VR engagement. This may suggest that perceived levels of social support play an important role in rehabilitation engagement broadly, but that consumers that have high levels of social support outside of VR are not more likely to experience enhanced relatedness (working alliance) that lead to higher levels of VR engagement.

A second model tested the hypothesis that autonomy would be negatively associated with functional disability but positively with VR engagement. Support for the hypothesis was found using correlation analysis that indicated a medium negative association between functional disability and autonomy (r = -.46, p < .01), a medium effect between autonomy and VR engagement (r = -.40, p < .01), and a low to medium negative association between functional disability and VR engagement (r = -.31), p < .01). The mediation model supported the hypothesis that autonomy would have a mediating effect on the relationship between functional disability and VR engagement. When controlling for autonomy, the relationship between functional disability and VR engagement was not statistically significant, suggesting that the variance in VR engagement was explained better through the mediation effect of autonomy than the direct effect between functional disability and VR engagement. In addition, a test of moderation was not statistically significant, adding additional evidence that this mediating effect does not change depending on levels of functional disability.

Functional disability is a variable that VR agencies have used when operating under order of selection criteria to identify consumers with the most significant disabilities. The finding that levels of social support were not significant mediators, while autonomy mediated the functional disability and VR engagement is an important finding, suggesting that VR professionals can support and instill autonomy to mitigate the impact of increased functional implications of consumers experiencing greater levels of disability. Government reports have indicated the VR consumer's employment status, post VR earnings, and the total number and amount of services received while engaged in VR varied significantly based on disability type (US Government Accountability Office, 2005), but by supporting autonomy and ultimate success in VR, consumers may better benefit from services and perhaps be more likely to reach positive outcomes upon separating from VR.

These findings suggest that supporting autonomous choice of young adult consumers is of critical importance for rehabilitation professionals as a means of increasing engagement in VR services. The finding that autonomy leads to higher levels of VR engagement is particularly significant, as the impact of autonomy was demonstrated regardless of level of functional disability. In the VR services paradigm, consumers who experience more functional limitations can be supported by emphasizing their informed choice and decision making through VR services (Kosciulek, 2004; Kosciulek, 2007; Wilhelm & McCormick, 2013). Although consumers with higher levels of functional disability may face additional barriers (Anthony, 2010; Fitzgerald, 2014; Izzo & Lamb, 2003; Kosciulek, 2004), this research is preliminary evidence that supporting autonomy can be an important path to success in VR for the population of young adult consumers, regardless of functional limitations related to disability. Supporting autonomous choice (i.e. motivation that is intrinsic in nature) within VR services may set a

precedent for TAYA consumers to apply these principles outside of the VR system, generalizing them to education, social, or workplace pursuits, and perhaps broadly increase participation in society.

Consumer engagement in intrinsically meaningful pursuits has been argued to relate to the broader construct of participation (Mallinson & Hammel, 2010). People with disabilities experience lower levels of participation compared to nondisabled peers (Achterberg, Wind, & Frings-Dresen, 2012; Anaby et al., 2013; Mallinson & Hammel, 2010). Nurturing higher levels of intrinsic motivation has may lead to more volitional behavior, and can increase consumer participation.

Literature has indicated that intrinsic motivation is associated with increased participation, including positive outcomes in education (Bae, 2007; Benson, 2012; Carter et al., 2006; Durlak, Rose, & Bursuck, 1994; Fowler et al., 2007; Mazzotti, Kelley, & Coco, 2015; Shogren et al., 2015), in the workplace (Benz, Lindstrom, & Yovanoff, 2000; Deci et al., 2016; Deci & Ryan, 2014; Gagne´ & Deci, 2005) and other positive adult life-roles such as independent living (Mazzotti et al., 2015; Okon & Webb, 2014; Richardson, 1994), as well as overall quality of life (Lachapelle et al., 2005). The finding that autonomy may be an important predictor in supporting and expanding consumer engagement, regardless of levels of functional disability, supports the notion that promoting consumer ownership of the rehabilitation process is an important objective for the state-federal VR system.

Implications for Clinical Practice

The present study has several implications for clinical practice which build upon previous literature directed at VR, self-determination, and the population of TAYA with disabilities. High quality rehabilitation professional performance, particularly in career planning and job

development in VR, resulted in more consumers attaining successful employment outcomes, regardless of perceived consumer motivation (Mullins, Roessler, Schriner, Brown, & Bellini, 1997). In addition, positive outcomes after K-12 for TAYA with disabilities have been attributed to high levels self-determination development and career decision-making skills (Izzo & Lamb, 2003), which are areas that may be addressed through engagement in VR. Findings of this study, consistent with Tansey and others (2017), suggest that systemic policies and services that promote working alliance (i.e. relatedness), autonomy, and self-efficacy (i.e. competency) of persons with disabilities may increase their capacity to obtain positive outcomes in VR through increasing engagement. The implications of the present investigation and previous literature on the state-federal VR agency, alongside suggestions for both the VR system structure as well as the VR professional are discussed.

Systems-Level Considerations

Published reports from the Government Accountability Office (2005) have mandated that VR agencies should incorporate new scientific advances, including the need of evidence-based practices to services. These practices could proliferate to regional offices and to direct services through VR professionals (Leahy et al., 2014). Researchers have suggested that knowledge translation practices can assist consumers in navigating barriers in the VR process (Lui, Anderson, Matthews, & Nierenhausen, 2014) by highlighting and refining applicable research findings into usable services. Translating theoretical/empirical based information into clinical practice can make research more relevant and enhance the VR professional's ability to understand, obtain, and apply the knowledge in their own work, and throughout the organization (Lui et al., 2014). By incorporating findings related to evidence-based practices related to self-determination as an emerging area of research in VR, both the VR system and VR professional

may improve consumer outcomes by supporting the autonomy, competence, and relatedness for consumers, which could support consumer engagement in VR.

The role of autonomy, competence, and relatedness has found support in the field of special education as an evidence-based practice. An investigation by Martin et al. (2006) suggested that using a self-determination informed self-directed approach to completing an Individualized Education Plan (IEP) increased student engagement during IEP meetings as measured by increased time talking, initiated discussions, and taking a leading role during the meeting compared to the control condition. Research into implementing evidence-based practices highlighted several domains central to supporting meaningful behaviors changes through existing services, including (summarized and adapted from the research to relate to VR): (a) knowledge (i.e. informed choice and decision making); (b) skills (i.e. learned from VR or as part of job training); (c) beliefs about capabilities (i.e. self-efficacy, competence, self-determination, empowerment); (d) motivation and goals (i.e. autonomy); (e) environmental context and resources and social influences (i.e. role of personal and environmental factors, organizational support); (f) behavioral regulation (i.e. setting goals, developing services), and (g) the nature of the behavior (i.e. gaining new experiences, learning from past experience) (Michie et al., 2005).

Future research could establish self-determination as an evidence-based practice in VR, and elucidate how autonomy, competence, and relatedness can best predict VR engagement and lead to improved post-VR adult-life outcomes for TAYA and suggest clinical interventions to apply the constructs. Research has suggested that for TAYA and specific disability populations, such as those with intellectual disabilities, SDT principles have been identified as an evidence-based best practice (Vatland et al., 2011). Agency support of using evidence-based practices has

also been shown to influence the likelihood of VR professionals using new skills. For instance, VR professional self-efficacy and outcome expectancy were both positively associated with readiness to use evidence-based practices (Tansey, Bezyak, Chan, Leahy, & Lui, 2014).

VR organizational performance has been identified as an important predictor of positive outcomes in VR. Research suggests that organizational performance impact employment outcomes by enhancing informed consumer choice and satisfaction (Kosciulek, 2007). At the systems-level, self-determination may be supported in numerous ways. A critical first step in the evaluation of community and institutional policies could be to assess how implementation of policies can best support consumer self-determination. Previous literature has highlighted the need for consumer groups and rehabilitation agencies to integrate community resources to achieve a meaningful proliferation of services for consumers (Arkansas Rehabilitation Research and Training Center, 1974). This is a complex and multi-faceted task, and scholars have highlighted some of the challenges, stating "In this era of empowerment, accountability, and constrained budgets, state VR agencies must be proactive and reinvent themselves to provide effective and efficient services that will improve employment outcomes of persons with disabilities" (Leahy et al., 2014, p. 84).

One implication of instituting self-determination strategies at the systems-level in VR is the importance of partnering with people with disabilities to develop policies and services that will instill self-determination in consumers with heterogeneous disabilities. Tailoring services based on professional input may enhance optimal consumer success in a real-world setting, based on an understanding the needs of consumers with disabilities in the modern work world. At a fundamental level, agencies should incorporate people with disabilities at all levels of organizational structure and planning. Notions of "normality" should be abandoned to capture

the lived experience of consumers with heterogeneous disability. This means that policy and practices pertaining to geographical access to offices, needs of consumers who do not drive, are not comfortable with counting money, who learn at different paces and in a wide variety of styles, may have limited reading, who use mobility aids or assistive technology to interact with their environment, or use caregivers or attendants to address their adaptations to daily living (Sprague & Hayes, 2000). VR agencies ensuring that services meet the implicit needs of consumers with disabilities could support broad consumer autonomy and self-efficacy (i.e. competency), and avoid systems-level barriers that may entirely preclude some consumers, or some types of disabilities, from equitable access to VR services. These policies and practices cumulatively support consumer self-determination in spirit, although indirectly, by allowing consumers impartial and equal access to services as well as proliferating services are universally designed to be accessible to the broad range of disability, ensuring that disability categories are not systematically discriminated against.

These findings suggest that agencies should offer resources that are relevant and available, and utilize them in a fair and just method to support consumer self-determination. Removing barriers in service proliferation may afford consumers the best chance to access higher-paying jobs that can adequately support their livelihood and healthcare needs after transitioning to adult life roles.

The role of VR services in supporting self-determination of consumers may naturally lead to better engagement throughout the VR process, but self-determined behaviors are also critical for successful adult life outcomes, outside of VR. People with disabilities face additional disincentives to working, stigma, and environmental barriers those with disabilities do not. VR services have the potential to instill necessary competencies that can empower consumers

through the world of work, independent living, and other adult-life roles. In addition, many people with disabilities healthcare access is a critical concern, and the loss of quality healthcare could have catastrophic health and economic repercussions. The healthcare needs for many people with disabilities may best be supported through higher paying jobs, as well as reforming disability entitlement programs and incorporating work incentives (Polak & Warner, 1996), although the latter task may be more challenging.

The inclusion of services such as benefits planning seeks to inform consumers how their social security cash benefits and healthcare are impacted by various levels of earning or working conditions. Initial evidence suggested that a written benefits analysis was associated with improved earning and positive employment outcomes for VR consumers (Wilhelm & McCormick, 2013). Benefits planning is not universally available in all VR agencies in the state-federal system, but when instituted as a service, can inform consumers about their benefits, removing a major disincentive to gainful employment (e.g. the loss of monetary benefits and healthcare) while giving the consumer the knowledge to assert their autonomous choice to continue engaging in VR services and work.

Legislative change is another important area that can facilitate meaningful change and support the self-determination of consumers with disabilities through by ensuring the rights, autonomy, and equitable access to healthcare of people with disabilities. VR is unique, as it is one of the only professions that was legislated into existence to meet a societal need (American Rehabilitation editorial 1995), and has a long history of advocating for societal inclusion of people with disabilities. VR agencies should also participate in the formation and expansion of disability-related legislation that supports fundamental rights and the autonomy of people with disabilities. This legislative change depends on societal support broadly, but it has been argued

that the ultimate responsibility for speaking on behalf of those with disabilities lies with those who experience disability and those who work alongside people with disabilities (Harmon, 1976).

The push to improve the environment through legislative effort, advocacy, and societal inclusion is important, and rehabilitation professionals have a role in influencing public perceptions of people with disabilities (Jenkins et al., 1998). This allows consumers of VR to experience improved levels of participation in society by removing barriers and reduce social stigma through greater participation and visibility of people with disabilities in public. VR can concurrently support consumer growth and increase societal participation by helping consumers to improve their self-image and self-efficacy, understand societal stigma, and minimize the functional implications of their disability. In many ways supporting self-determination are the natural aspirations of rehabilitation professionals, and instilled through the mission of state-federal VR agencies and related cooperative programs. Supporting consumer empowerment through a service system also requires facilitating a supportive environment and workplace for both consumers and the professionals that work with them.

Organizational culture is another important determinant in enhancing the quality of VR services. A positive and supportive work culture can make far strides in supporting rehabilitation professionals in engaging in new ways of delivering services, which can help to ensure equitable access to important services such as benefits counseling, vocational training, or job readiness assistance, as well as for allowing for person-centered planning approaches and other forthcoming services determined by the changing needs of the workplace and consumers alike. VR agencies should also seek to develop research and program evaluation practices to

identify services and approaches that are consistent with established evidence-based practices (Valle et al., 2014).

New VR programs and existing services alike should be structured based on the input of consumers with disabilities and advocates, to ensure that the access and equity within services are adequate and sufficient to empower, or to support self-determination in consumers. These efforts may include the following:

- Support disability peer-based counseling/supports as an adjunctive service alongside professional counseling
- Advocate for, and correctly implement laws and legislation that support the consumerism movement, empowerment, and self-determination principles within existing VR services
- Include people with disabilities in all levels of governance (e.g. research, guidance, feedback, customer satisfaction)
- Monitor civil rights violations (broad awareness)
- Cooperate with Independent Living (reduce social isolation)
- Develop partnerships or collaborations with disability advocacy projects and organizations (e.g. Independent Living Centers, advocacy/legal stakeholders, grassroots organizations)

The findings of the present study suggest ways in which SDT principles may empower TAYA consumers and increase VR engagement and positive post-VR outcomes within the existing state-federal VR service system, with implications for both the systemic-level as well as direct services by VR professionals.

Professional-Level Considerations

Engagement in rehabilitation is paramount to ultimate success for young adult consumers with disabilities. Some estimates indicated that of consumers closed unsuccessfully, two thirds exited VR due to refusing services or lack of cooperation with VR counselor, or were closed because they could not be located (US Government Accountability Office, 2005). These findings may indicate that lack of counselor/consumer working alliance, conceptualized in this study as the self-determination construct of relatedness, have the potential to support successful engagement in VR. Engagement in VR is essential to positive post VR outcomes related to adult life outcomes, such as post-secondary education, gainful employment, and independent living (Härkäpää et al., 2014), and has also been associated with positive health outcomes (Hibbard & Greene, 2013b).

VR professionals have a must be mindful of the impact that their professional power has when identifying and proliferating services. For instance, the VR professional can ensure consumer input when organizing job placement services, or include the consumer in the development and writing of the Individualized Plans for Employment. VR professionals can conceptualize services as a meaningful collaboration, meeting consumers "half way," and thus ensuring that consumer engagement and participation is encouraged throughout the VR services. This two-way participation may take more time early in the rehabilitation process, but could pay dividends in workload throughout consumer involvement in VR, while also enhancing positive outcomes.

VR professionals can also utilize person-centered, or person-driven, planning to individualize services and to engage consumers in identifying intrinsically meaningful, relevant rehabilitation goals. Person-driven approaches systematically encourage autonomy, dignity, and

respect, and take a strength based approach (O'Brien & O'Brien, 2000) consistent with existing VR services. Person-driven planning has also been utilized successfully in psychiatric rehabilitation settings (Tondora, Miller, Slade, & Davidson, 2014). One study found that young people with disabilities who participated in person-centered planning services were more likely to hold at least one paid job, and services focused towards their unique strengths, important relationships, and setting meaningful goals for their transition to adulthood (Croke & Thompson, 2011), all of which are relevant to supporting the self-determination constructs of autonomy, competence, and relatedness.

Person-driven planning may be particularly relevant to TAYA with disabilities, who experience fewer opportunities to make decisions that affect their daily lives compared to peers without disabilities (Chambers et al., 2007), thus supporting decision making is a valuable experience for asserting their autonomous choice in adult roles. Supporting choice making and perceived autonomy increase high-quality intrinsic motivation, and findings from this investigation support the notion that autonomy is a powerful mediator in the engagement in VR services, and cultivating a professional relationship that fosters autonomy is an important part of ensuring engagement in VR.

Current evidence for person-driven practices for transition-aged youth with intellectual disabilities has shown that person-driven services increase goal setting, decision making, and advocacy (Combes, Hardy, & Buchan, 2004; Heller, Miller, Hsieh, & Sterns, 2000; Robertson et al., 2007), however this has not been explicitly investigated in a heterogeneous sample of young-adult consumers of VR. Future research could investigate the role to which person-driven service proliferation impact the self-determination and engagement of TAYA within a VR setting. An engaged consumer may be more likely to utilize services, but also perceive their

motivations as intrinsically meaningful which can ultimately facilitate increased societal participation and engagement in adult life roles, be it education/vocational training, internships, maximizing independence, and ultimately for many TAYA, competitive employment.

Although person-driven planning and other methodologies for provision of services has been investigated in fields related to VR (e.g. special education, transition), evidence has also highlighted the role of the counselor, particularly working alliance (i.e. relatedness) in professional services related to positive outcomes in counseling and rehabilitation (Donnell, et al., 2004; Kukla & Bond, 2009; Leahy, et al., 2014; Lustig, et al., 2002; McMahon, et al., 2004; Strauser & Berven, 2006). Within the counseling role, professional influence can seek to either support or sometimes consumers. For instance, using professional knowledge and expertise to direct a consumer towards "the best" available option, may undermine autonomy, as well as feelings of relatedness. Professional influence may undermine the consumer's perception of an intrinsically motivated, meaningful, autonomous choice. Essentially, the choice determined by the judgment of the VR professional, even if it is "the best" could be perceived as extrinsically motivated by the consumer, and pursuing that goal could be rationalized as complying with the VR process, instead of something that intrinsically meaningful and consistent with future goals. Motivation and self-determination research has broadly characterized extrinsic motivation as lower quality and associated with poorer outcomes (Deci et al., 1999; Ryan & Deci, 2000a), thus the role of VR professionals should assist consumers in expanding perceived choice and motivation.

VR professionals should also be mindful of language that can pathologize the consumer, or emphasize the origin of disability as the responsibility of the individual. Instead, VR professionals can tailor services focused on a shared (rehab professional and consumer)

understanding of the social and environmental pressures and challenges faced by the consumer that result in his or her experience of disability. This approach would emphasize consumer autonomy, allowing them to take the role of expert on their situation, which could also seek to enhance relatedness (i.e. working alliance) (Horvath, 1994; Horvath & Symonds, 1991; Lustig et al., 2002) and perceptions of competence (i.e. self-efficacy) as they navigate their environment, while enhancing engagement throughout the rehabilitation process.

Perceived competence is another critical self-determination factor for successful engagement in VR, individuals must believe they can modify their environment and overcome challenges (Hofer & Busch, 2011; Thibault Landry et al., 2016). VR professionals can foster TAYA consumers to utilize new strategies, bolster new skills or compensatory strengths, and provide additional resources both internal (e.g. self-efficacy, education) and external (i.e. assistive technology), allowing the consumer to use their skills to overcome challenges, and thus achieve their desired outcomes.

Emener (1991) suggested ways in which consumer competence could be supported or weakened, highlighting that well-intentioned VR professionals might unknowingly respond everyday consumer requests in ways which that miss an opportunity to enhance consumer growth or empowerment. For instance, a VR professional that expediently handles a consumer request for a workplace accommodation without involving the consumer would neglect an opportunity to instill a feeling of competence and autonomy. Posed with this hypothetical service request, Emener (1991) suggested that the VR professional work through the situation with the consumer, instilling in the consumer a feeling of competency by supporting their ability to make changes and address barriers, discussing approaches, informing, educating, and understanding the potential consumer motivational ambivalence or hesitancy regarding self-

advocacy. With this anecdote, it is within the professional scope of practice for VR professionals to assist consumers with workplace accommodations, however supporting the consumer in making the request would be supportive of self-determination. In completing the task and engaging with the employer, the consumer could perceive his or her actions as intrinsically motivated and emerging from their autonomous choice and growing competency in handling everyday stressors faced by people with disability in the workplace and society.

Another avenue of fostering empowerment through rehabilitation is for professionals to increase focus on advocacy and civil rights of people with disabilities (Hahn, 1991), including self-advocacy. In shifting the focus on the civil rights of all people with disabilities, the disability becomes a product of a problematic environment and not a personal difference. Rehabilitation professionals may use this knowledge to assist consumers in understanding disability and discrimination experienced through environmental mismatch. Professionals can support consumer empowerment by conceptualizing cases by understanding ways in which the community and environment are not accessible, and then using their knowledge as VR professionals, alongside counseling and services to address barriers encountered and perceived by consumers.

Under a lens of environmental/social circumstances creating disability, disability status can also be understood as an opportunity to connect with a historical legacy, or community of people with disabilities, which affords the ability to advocate and expand civil rights through involvement in collective action and advocacy. Secondarily, acquiring a disability also creates a new perspective on the world and ones' role in it, which can foster creativity leading to new understandings. Rehabilitation professionals can assist consumers with this understanding or perspective. The historical advocacy efforts of people with disabilities can be seen as parallel to

the efforts of other minorities in demanding equality and justice, and thus disability can be understood as a minority group classification.

Consumers from diverse backgrounds enter VR agencies, and it is important for VR professionals to have competencies to serve the diverse demographics of VR. Knowledge of cultural differences, in addition to the education and training regarding the medical and psychosocial aspects of disability are crucial (Loeb et al., 2009; Moodley & Graham, 2015). Professionals can also monitor civil rights violations relating to disability and multiple-minority status, as they have been identified as significant barriers to reaching positive employment outcomes (Hahn, 1991). Rehabilitation professionals have an obligation to understand the intersectional struggles of people with disabilities who share other minority statuses, particularly the multiplied struggle, stigma and oppression faced by consumers in reaching adult-life roles.

As part of this broader understanding of disability, rehabilitation professionals could stay privy to civil rights violations relevant to people with disabilities, which would serve to increase their broad awareness. VR professionals could also forge professional partnerships or personal relationships with Independent Living organizations which could address societal participation of consumers by conceptualizing their integration into adult-life roles more holistically and not just through positive VR service outcomes, while also improving informed professional referrals. Lastly, VR professionals should seek out and support ways of ensuring full community integration and participation of consumers, as these may serve as important antecedents to personal empowerment. VR services can be accomplished using an empowerment approach, wherein consumer autonomy, relatedness, and competence are supported alongside their ability to make informed choices. Some scholars have also suggested that empowerment may best

result when rehabilitation professionals advocate for, and support empowerment of consumers, while also pursuing empowerment in their own lives (Emener, 1991).

Within a minority group model, rehabilitation professionals have specialized training and knowledge in the realm of medical and psychosocial aspects of disability, research education and training could emphasize competencies related to multiple minority status (e.g. racial/ethnic minorities, lesbian, gay, bisexual, or transgender). These areas may include areas of limited cultural competency, or personal bias for some rehabilitation professionals, which could pose barriers to working alliance or relatedness in VR services. VR professionals can promote feelings of autonomy and competence, as well as enhance the working alliance by having high levels of cultural competency, and taking an approach of cultural humility, allowing the world of the consumer to be understood through their shared personal experience, when working with diverse populations. It has been suggested that ignorance and bias from professionals can be particularly harmful to racial and ethnic minority consumers, which may perceive these as oppressive forces that in turn significantly undermine feelings of competency and autonomy (Cruikshank, 2014).

When understanding how motivation can be impacted for diverse consumers within rehabilitation settings, the role of extrinsic motivation is crucial. Regarding how extrinsically motivated activities can support autonomous motivation, VR professionals can take several steps to ensure autonomy is supported, even when in a position of power. For one, VR professionals can ensure that consumers are fully informed, while instilling a sense of ownership and autonomy and giving clear feedback. Research has suggested that this pattern of service delivery would lead to an individual that is "likely to become more autonomously motivated and reliably perform better, learn better, and be better adjusted" (Deci et al., 2016, p. 2).

Motivation is a complex process, particularly when supporting implicit motivation within a framework where there is not only a power differential defined by the counseling relationship, but also services that are provided by the agency to facilitate success. In this setting, utilizing motivational interviewing can be a professional tool to engage in discussions with consumers that elicit change talk, understand motivation, and assist in understanding and setting meaningful goals for the VR consumer. Markland, Ryan, Tobin, and Rollnick (2005) reported that Motivational Interviewing techniques fostered an environment that supported autonomy, allowing the individual to identify personally meaningful sources of motivation. Participants attending substance abuse groups using motivational interviewing reported that their autonomy was supported more than the experimental control of treatment as usual (Foote et al., 1999).

Another method of supporting empowerment is through understanding the role of the client and professional in a way that instills empowerment. Vocational rehabilitation professionals can view consumers as customers, wherein quality of services and customer satisfaction are critical factors in the delivery of VR services, and service providers (i.e. VR professionals) seek feedback and listen to views of consumers to maximize services. This has been shown to support the consumer's feelings of choice and control, as well as the perceived ability to direct their lives (Okon & Webb, 2014). Simply providing choice, alongside informed consent, and seeking to deliver the highest quality consumer experience could support self-determination and enhance positive VR outcomes (i.e. employment) as well as subjective (e.g. happiness, contentment) outcomes.

Increased societal participation of consumers, although emphasizing work, is the primary goal of VR services, and ways to encourage engagement and self-determination are suggested below:

- Embrace person-driven planning (Tondora et al., 2014)
- Strive for active civic and community engagement alongside people with disabilities
- Make everyday practice of involving consumer in services (i.e. collaboratively writing the IPE, utilize person-driven planning principles, brainstorming accommodations)
- Strive to enhance "informed choice" and support effective deliberation and decision-making
- View the consumer as the expert in their own lives
- Provide consumers with transparent information pertaining to VR service options (e.g., job development service providers, vocational evaluation service providers,)
- Ask permission before providing recommendations or professional advice
- Provide consumers with information concerning the policies and procedures on service provision (e.g., comparable benefits, licensure, and accreditation of service providers)
- Increase focus on advocacy and civil rights of people with disabilities
- View clients as customers, where quality of services adapt based on feedback and positive outcomes
- Utilize active listening and open-ended questions to understand and empathize with the consumer
- Regularly offer positive praise, support, and positive reinforcement
- View clients as customers, stay true to high level of customer service

Study Limitations

The present study has several limitations that can impact generalizability to young adult VR consumers. First, the research design did not utilize a random sampling approach, and there were no experimental controls or random assignment. This methodology limited the internal

validity of the research. In addition, the study utilized a convenience sample, with the time frame being cross-sectional.

In addition, although careful consideration was taken to design a survey that is universally accessible, some respondents, because of disability (e.g. learning, cognitive), may have responded in fundamentally different ways, or quit the survey prior to completion due to fatigue. The sample also included different VR stakeholders (i.e. the state-federal VR system, cooperative programs), where participants may have idiosyncratic difference between organizations. In summation, recruitment approaches face several significant barriers (Schnirer & Stack-Cutler, 2012), including (a) barriers accessing the population who tend to utilize services less (Yeatts et al., 1992); (b) participation concerns, including personal and familial concerns about participating in research such as privacy (Heinrichs et al., 2005), lack of trust (Frayne et al., 2001), or denial of any need for assistance (El-Khorazaty et al., 2007); (c) demographic characteristics such as lower literacy, English language learners, increased family stress and transportation limitations (Wright et al., 2006).

Also, all self-report responses pose some challenges, such as vulnerability of error and bias in response patterns, as well as the impact of social desirability by trying to present oneself in a more positive light (Krumpal, 2013). The present sample had a mean age of 22 (*SD* = 3.68), which falls outside the "students with disabilities" range under the Workforce Innovation and Opportunity Act, (WIOA) which may limit the applicability of the findings to a younger adolescent transition population.

The present study attempted to procure a broad sample of young adult VR consumers of diverse race/ethnicity, SES, and disability type, but the online survey and outreach methods may have precluded some from participating. Limitations can also come from the measurement

methods utilized by researchers. While most of the instruments in the study demonstrated appropriate psychometric qualities. However, autonomy, conceptualized as the Vocational Rehabilitation Internal Motivation Scale (VRIMS), was found to have questionable reliability (α = .66), which could impact the interpretability or association with other variables. The VRIMS was not designed for young adults with disabilities, and future investigations should validate the instrument on this population, or determine a more appropriate measure. In this study, the VRIMS was identified as one of the most important predictors in the overall model, and future studies should replicate these findings with an autonomy measure demonstrating appropriate reliability. Three items of the VRIMS assess the internal motivation to apply for VR services, which could constitute criterion contamination with the outcome measure or VR engagement. However, internal motivation to apply for VR, and the resulting engagement in VR are related but arguably different, as one can experience the internal motivation to apply, but still experience differing levels of VR engagement based on personal, environmental, disability, and perceived limits to autonomy.

In addition, this study specifically targeted the self-determination behaviors of state/federal VR programs and cooperative agencies. Federal VR through the veteran's benefits administration, private rehabilitation, and other stakeholders vested in rehabilitation of young adults with disabilities were outside the targeted scope of this investigation, and future research should investigate self-determination behaviors for individuals using these organizations.

The present investigation did not include the role to which outcome expectancies, defined as the judgment of the likelihood that behaviors result in the intended consequence (Bandura, 1986) would play a part in understanding the impacts of self-determination in predicting VR engagement. These are important components of goal persistence, and may explain additional

variance of VR engagement using a SDT approach. Future research could replicate the present model, while including outcome expectancies in the regression as the final step, after the three self-determination constructs. The role to which outcome expectancies relate to autonomy, competency, and relatedness, as well as VR engagement was not determined.

Lastly, future studies could also investigate clinical interventions aimed at improving VR engagement based on the preliminary findings of the present study, for instance use of person-driven planning, adapting self-determination curriculum from special education or using counseling practices seeking to increase internal motivation (i.e. motivational interviewing) would be important areas for future research. In addition, future investigations could identify the impacts of the use of benefits planning for consumers with disabilities who have social security benefits, particularly related to perceived autonomy and competence, as well as related to dependent variables predicting positive VR and adult-life outcomes.

Conclusions

The findings of this study provide empirical evidence for the use of a self-determination theory model in predicting engagement in VR based on a broad sample of TAYA consumers. There exists significant literature on the nature and dynamics of the counseling relationship, however few other human service agencies are specially equipped to have as great an impact on their client/consumers. Within the federal VR system, counselors and other professionals have access to services or financial resources that can support consumers in reaching their goals. Supporting consumer self-determination, parsimoniously managing VR funds in an unprejudiced manner, and using disability-related knowledge in a way that is supportive of consumer-informed choice and autonomy is no trivial matter.

For VR professionals, it is important to ensure that negative societal reflections do not carry over into the counseling relationship, and that instead the counseling relationship is a platform to foster higher levels of relatedness while increasing consumer perceptions of autonomy and competence. VR Professional can maximize this possibility by having personal insight into implicit attitudes or biases based on disability, minority status, or cultural differences that could have negative or deleterious impacts on positive consumer outcomes. VR services are critical supports for many TAYA consumers in obtaining meaningful employment secondary to educational or independent living goals, and supporting self-determination is an empirically supported intervention (Certo & Luecking, 2011; Dobak, 2014; Giesen & Cavenaugh, 2012; Honeycutt, Thompkins, Bardos, & Stern, 2015).

Within the services-as-usual model, VR professionals can adopt and implement self-determination principles that foster a sense of empowerment and engagement in VR services by supporting intrinsic motivation throughout the VR process, supporting growth and learning, respecting, and fully providing unbiased information to facilitate consumer informed decision-making. VR agencies can further support these values by directing service provisions to support consumers with disabilities through partnership with community employers, pursuing legislative action and disability advocacy, ensuring the use of evidence based practices and innovative services such as person-driven planning and benefits planning, as well as cultivating an accessible and accepting environment for consumers and professionals alike. VR professionals may be able instill self-determination by instructing or teaching skills related to self-determination components, such as teaching decision-making strategies to act upon the informed-choice decision making model in VR, problem solving specifically tailored to disability/accessibility or utilizing community resources to address problems or barriers, and

instilling self-advocacy or leadership skills that can also lead to higher levels of self-efficacy and competency (Vatland et al., 2011).

One significant contribution of this study was the finding that autonomy was a primary factor associated with VR engagement. Past research has highlighted the importance or working alliance as a primary factor, conceptualized in this study as relatedness, while this study suggests that for TAYA, supporting autonomy may be a more important predictor in understanding overall engagement in VR. This finding, within context of recent WIOA legislative changes and other findings represent initial evidence that supporting and empowering TAYA within VR may have some fundamental differences than working-aged adult consumers.

The importance of preparing transition-aged young adults are highlighted by recent changes in WIOA that mandate VR programs to allocate at least 15% of their funds on pre-employment transition services. This change emphasizes the importance of prioritizing transition aged youth and young adults, and opens the door for innovative and valuable services. These pre-employment transition services can include counseling for job exploration counseling, work-related learning experiences in integrated environments (e.g. school or community), workplace readiness training to enhance social skills, adaptations to daily living, or independent living, as well as instruction in self-advocacy (Workforce Innovation and Opportunity Act, 2014). These services could also include fostering autonomy, competence, and relatedness through counseling or explicit instruction, as well as decision-making strategies or other services that can enhance outcomes in post-secondary life, and in many cases, future employment.

The changes in WIOA represent an important opportunity for developing and understanding the ways in which TAYA engage with the VR system, and an important moment

to develop self-determination as an evidence-based best practices that in supporting consumers transitioning to adult life-roles within the VR system.

Research has suggested that autonomy, activities and participation, and goal setting are vital aspects of empowerment (van Hal et al., 2012), and within the existing VR service structure, these can be supported through legislative change, such as WIOA, agency-level policy, as well as through direct services from VR professionals. Furthermore, Wehmeyer (1999) identified interventions that can be used to support self-determination, which could be applied in a VR setting, as: supporting choice/decision making, allowing/facilitating problem solving, autonomous goal setting with informed choice facilitated by the VR professional, allowing for incremental goal attainment (i.e. building in victories, positively reinforcing successes), support and education related to disability self-advocacy, supporting self-efficacy and building competence, allowing and supporting self-awareness and understanding, and encouraging self-observation and self-evaluation (Algozzine et al., 2001; Fowler et al., 2007; Wehmeyer, 1999). Within the VR service paradigm, "how to motivate the consumer" might be conceptualized as "how to create conditions that increase self-determination."

References

Abidi, J., & Sharma, D. (2014). Poverty, Disability, and Employment: Global Perspectives from the National Centre for Promotion of Employment for Disabled People. *Career Development and Transition for Exceptional Individuals, 37*, 60-68. doi:10.1177/2165143413520180

Achterberg, T. J., Wind, H., & Frings-Dresen, M. H. W. (2012). What are the most important factors for work participation in the young disabled? An expert view. *Disability & Rehabilitation, 34*(18), 1519-1525. doi:10.3109/09638288.2011.650311

Ackerman, B. (2006). Learning Self-determination: Lessons from the Literature for Work with Children and Youth with Emotional and Behavioral Disabilities. *Child & Youth Care Forum, 35*(4), 327-337. doi:http://dx.doi.org/10.1007/s10566-006-9020-0

Adams, A. S. (1976a). *Disabled should be key shapers of own programs.* Paper presented at Rehabilitation World.

Adams, A. S. (1976b). Rehabilitation Consumerism: Confrontation or communication and cooperation? *Journal of Rehabilitation, 42*, 23-25.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Algozzine, B., Browder, D., Karvonen, M., Test, D. W., & Wood, W. M. (2001). Effects of interventions to promote self-determination for individuals with disabilities. *Review of Educational Research, 71*(2), 219-277.

Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of personality and social psychology, 34*, 92-98.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

American Rehabilitation editorial comment. (1995). A history to be proud of: 75 years of vocational rehabilitation. *American Rehabilitation, 21*(3).

Anaby, D., Hand, C., Bradley, L., DiRezze, B., Forhan, M., DiGiacomo, A., & Law, M. (2013). The effect of the environment on participation of children and youth with disabilities: a scoping review. *Disability & Rehabilitation, 35*(19), 1589-1598. doi:10.3109/09638288.2012.748840

Anaby, D., Law, M., Coster, W., Bedell, G., Khetani, M., Avery, L., & Teplicky, R. (2014). The Mediating Role of the Environment in Explaining Participation of Children and Youth with and without Disabilities Across Home, School, and Community. *Archives of Physical Medicine & Rehabilitation, 95*(5), 908-917. doi:10.1016/j.apmr.2014.01.005

Anastasi, J. K., Capili, B., Kim, G. H., & Chung, A. (2005). Clinical trial recruitment and retention of a vulnerable population. *Gastroenterology Nursing, 28*(6), 463–468.

Anderson, D. G., & Hatton, D. C. (2000). Accessing vulnerable populations for research. *Western Journal of Nursing Research, 22*(2), 244–251.

Anthony, W. A. (2010). Shared decision making, self-determination and psychiatric rehabilitation. *Psychiatric Rehabilitation Journal, 34*(2), 87-88. doi:10.2975/34.2.2010.87.88

Araten-Bergman, T., & Stein, M. A. (2014). Employment, social capital, and community participation among Israelis with disabilities. *Work, 48*(3), 381-390. doi:10.3233/WOR-131779

Arkansas Rehabilitation Research and Training Center. (1974). *Consumer participation* Fayetteville, Arkansas: University of Arkansas.

Armstrong, D. (2002). The politics of self-advocacy and people with learning difficulties. *The Policy Press, 30*(3), 333-345. doi:10.1332/030557302760094702

Arokiasamy, C. V. (1993). A Theory for rehabilitation? *National Council on Rehabilitation Education, 7*, 77-98.

Atkins, D., & Guisti, C. (2004). The Confluence of Poverty and Disability. *The Realities of Poverty in Delaware 2003–2004*.

Bae, S. J. (2007). *Self-determination and academic achievement of individuals with disabilities in postsecondary education: A meta-analysis.* (Ph.D. Dissertation), University of Kansas. (3255072)

Balcazar, F. E., & Taylor-Ritzler, T. (2009). Perspectives of Vocational Rehabilitation Counselors on the Factors Related to Employment Outcomes of Racial and Ethnic Minorities with Disabilities. *Journal of Social Work in Disability & Rehabilitation, 8*(3/4), 102-116. doi:10.1080/15367100903200395

Bambara, L. M., & Ager, C. (1992). Using Self-Scheduling to Promote Self-Directed Leisure Activity in Home and Community Settings. *Research and Practice for Persons with Severe Disabilities, 17*(2), 67-76. doi:10.1177/154079699201700201

Bandura, A. (1986). *Social foundations of thought and action*. Upper Saddle River, NJ: Prentice Hall.

Banks, J. (2014). Barriers and supports to postsecondary transition: Case studies of African American students with disabilities. *Remedial and Special Education, 351*, 28-39.

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of personality and social psychology, 51*(6), 1173-1182.

Barrera, M. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology, 14*(4), 413-445.

Bastiaens, L., Galus, J., & Goodlin, M. (2014). The 12 Item WHODAS as Primary Self Report Outcome Measure in a Correctional Community Treatment Center for Dually Diagnosed Patients. *Psychiatric Quarterly, 86*(2), 219-224. doi:10.1007/s11126-014-9322-6

Baumeister, R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529. doi:10.1037/0033-2909.117.3.497

Beck, R. J. (1994). Encouragement as a vehicle to empowerment in counseling: An existential perspective. *Journal of Rehabilitation, 60*(6).

Benson, T. (2012). *Self-Determination Skills of Preschool Children with Disabilities.* ProQuest LLC.

Benz, M. R., Lindstrom, L., & Yovanoff, P. (2000). Improving graduation and employment outcomes of students with disabilities: Predictive factors and student perspectives. *Exceptional Children, 66*(4), 509-529.

Beveridge, S., & Fabian, E. (2007). Vocational Rehabilitation Outcomes: Relationship Between Individualized Plan for Employment Goals and Employment Outcomes. *Rehabilitation Counseling Bulletin, 50*(4), 238-246. doi:10.1177/00343552070500040501

Bickenbach, J., Cieza, A., Rauch, A., & Stucki, G. (2012). *ICF Core Sets Manual for Clinical Practice*. Göttingen: World Health Organization.

Blum, R. W., & Qureshi, F. (2011). Morbidity and Mortality among Adolescents and Young Adults in the United States. In Department of Population Family and Reproductive Health (Ed.). Johns Hopkins Bloomberg School of Public Health.

Blumling, A. A., Thomas, T. L., & Stephens, D. P. (2013). Researching and Respecting the Intricacies of Isolated Communities. *Online Journal of Rural Nursing & Health Care, 13*(2), 122-148.

Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology, 49*(3), 311-323. doi:10.1037//0022-0167.49.3.311

Bolton, B., & Brookings, J. (1996). Development of a multifaceted definition of empowerment. *Rehabilitation Counseling Bulletin, 39*(4), 256-264.

Boynton., P. S., & Fair, P. A. (1986). Becoming a market-driven rehabilitation program: A case study. *Rehabilitation Literature, 47*, 174-178.

Braithwaite, J., & Mont, D. (2008). Disability and Poverty: A Survey of World Bank Poverty Assessments and Implications *Human Development Network Social Protection*.

Brand, D. J., Alston, R. J., & Harley, D. A. (2012). Disability and race: a comparative analysis of physical activity patterns and health status. *Disability & Rehabilitation, 34*(10), 795-801. doi:10.3109/09638288.2011.620216

Bronfenbrenner, U. (1999). Environments in Developmental Perspective: Theoretical and Operational Models. In S. Friedman & T. Wachs (Eds.), *Measuring environment across the life span: Emerging methods and concepts* (pp. 3-28). Washington, DC, US: American Psychological Association.

Brooks-Lane, N., Hutcheson, S., & Revell, G. (2005). Supporting consumer directed employment outcomes. *Journal of Vocational Rehabilitation, 23*(2), 123-134.

Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H.-N. (1997). A Meta-Analysis of Outcome Studies Comparing Bona Fide Psychotherapies: Empirically, "All Must Have Prizes." *Psychological Bulletin, 122*(3), 203-215.

Burchardt, T. (2004). Capabilities and disability: the capabilities framework and the social model of disability. *Disability & society, 19*(7), 735-751. doi:10.1080/0968759042000284213

Cameto, R., Levine, P., & Wagner, M. (2004). Transition Planning for Students with Disabilities. Menlo Park, CA: SRI International.

Capella, M. E., & Andrew, J. D. (2004). The Relationship Between Counselor Job Satisfaction and Consumer Satisfaction in Vocational Rehabilitation. *Rehabilitation Counseling Bulletin, 47*(4), 205-214. doi:10.1177/00343552040470040201

Capella, M. E., & Turner, R. C. (2004). Development of an Instrument to Measure Consumer Satisfaction in Vocational Rehabilitation. *Rehabilitation Counseling Bulletin, 47*(2), 76-85. doi:10.1177/00343552030470020201

Carona, C., Moreira, H., Silva, N., Crespo, C., & Canavarro, M. C. (2014). Social support and adaptation outcomes in children and adolescents with cerebral palsy. *Disability & Rehabilitation, 36*(7), 584-592. doi:10.3109/09638288.2013.804596

Carson, R., Sitlington, P., & Frank, A. (1995). Young Adulthood for Individuals with Behavioral Disorders: What Does it Hold? *Behavioral Disorders, 20*, 127-135.

Carter, E. W., Austin, D., & Trainor, A. A. (2012). Predictors of Postschool Employment Outcomes for Young Adults with Severe Disabilities. *Journal of Disability Policy Studies, 23,* 50-63. doi:10.1177/1044207311414680

Carter, E. W., Lane, K. L., Pierson, M. R., & Glaeser, B. (2006). Self-Determination Skills and Opportunities of Transition-Age Youth with Emotional Disturbance and Learning Disabilities. *Exceptional Children, 72*(3), 333-346.

Carter, E. W., Trainor, A., Owens, L., Sweden, B., & Sun, Y. (2010). Self-Determination Prospects of Youth with High-Incidence Disabilities. *Journal of Emotional and Behavioral Disorders, 18*(2), 67-81. doi:http://dx.doi.org/10.1177/1063426609332605

Carter, E. W., Trainor, A. A., Ditchman, N., & Owens, L. A. (2011). A pilot study connecting youth with emotional and behavioral difficulties to summer work experiences. *Career Development for Exceptional Individuals, 34*(2), 95–106. doi:10.1177/0885728810395745

Carter, E. W., Trainor, A. A., Ditchman, N., Swedeen, B., & Owens, L. (2011). Community-based work experiences of adolescents with high-incidence disabilities. *Journal of Special Education, 45*(2), 89–103. doi:10.1177/0022466909353204

Centers for Disease Control and Prevention. (2011). *Preventing Suicide: Program Activities Guide*. Atlanta, GA Retrieved from http://www.cdc.gov/violenceprevention/pdf/PreventingSuicide-a.pdf.

Certo, N. J., Luecking, R. G., Courey, S., Brown, L., Murphy, S., & Mautz, D. (2008). Plugging the policy gap at the point of transition for individuals with severe intellectual disabilities: An argument for a seamless transition and federal entitlement to long-term support. *Research and Practice for Persons with Severe Disabilities, 33*, 85-95.

Certo, N. J., & Luecking, R. G. (2011). Transition and employment: Reflections from a 40 year perspective. *Journal of Vocational Rehabilitation, 35*(3), 157-161. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=aph&AN=66918487&site=ehost-live&scope=site

Chambers, C. R., Wehmeyer, M. L., Saito, Y., Lida, K. M., Lee, Y., & Singh, V. (2007). Self-determination: What do we know? Where do we go? *Exceptionality, 15*, 13-15.

Chan, F., Gelman, J. S., Ditchman, N., Kim, J.-H., & Chiu, C.-Y. (2009). The World Health Organization ICF Model as a Conceptual Framework of Disability. In F. Chan, E. D. S. Cardoso, & J. A. Chronister (Eds.), *Understanding Psychosocial Adjustment to Chronic Illness and Disability: A Handbook for Evidence-Based Practitioners in Rehabilitation*. New York: Springer.

Chan, F., Keegan, J., Sung, C., Drout, M., Pai, C.-H., Anderson, E., & Mclain, N. (2009). The World Health Organization ICF Model as a Framework for Assessing Vocational Rehabilitation Outcomes. *Journal of Rehabilitation Administration, 33*(2), 91-112.

Chan, F., Rubin, S. E., Lee, G., & Pruett, S. (2003). Empirically derived life skill factors for program evaluation in rehabilitation. *Journal of Applied Rehabilitation Counseling, 34*(4), 15-22.

Chan, F., Strauser, D., Gervey, R., & Lee, E. J. (2010). Introduction to demand-side factors related to employment of people with disabilities. *Journal of Occupational Rehabilitation, 20*(4), 407-411. doi:10.1007/s10926-010-9243-7

Chan, F., Strauser, D., Maher, P., Lee, E. J., Jones, R., & Johnson, E. T. (2010). Demand-side factors related to employment of people with disabilities: a survey of employers in the

Midwest region of the United States. *Journal of Occupational Rehabilitation, 20*(4), 412-419. doi:10.1007/s10926-010-9252-6

Chan, F., Tarvydas, V., Blalock, K., Strauser, D., & Atkins, B. J. (2009). Unifying and Elevating Rehabilitation Counseling Through Model-Driven, Diversity-Sensitive Evidence-Based Practice. *Rehabilitation Counseling Bulletin, 52*(2), 114-119.

Chronister, J., Chou, C. C., Frain, M., & Cardoso, E. d. S. (2008). The Relationship Between Social Support and Rehabilitation Related Outcomes: A Meta-analysis. *Journal of Rehabilitation, 74*(2), 16-32.

Chronister, J. A., Johnson, E. K., & Berven, N. L. (2006). Measuring social support in rehabilitation. *Disability and Rehabilitation: An International, Multidisciplinary Journal, 28*(2), 75-84.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* Hillsdale, NJ: Laurence Erlbaum.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2002). *Applied Multiple Regression - Correlation Analysis for the Behavioral Sciences,* (3rd Edition ed.). Mahwah, New Jersey: Lawrence Erlbaum.

Combes, H., Hardy, G., & Buchan, L. (2004). Using Q-Methodology to Involve People with Intellectual Disability in Evaluating Person-Centred Planning. *Journal of Applied Research in Intellectual Disabilities, 17*(3), 149-159. doi:10.1111/j.1468-3148.2004.00191.x

Condeluci, A. (1995). *Interdependence: The route to community* (2nd ed.). Winter Park, FL: GR Press.

Cook, J. A., Leff, H. S., Blyler, C. R., Gold, P. B., Goldberg, R. W., Mueser, K. T., . . . Burke-Miller, J. (2005). Results of a multisite randomized trial of supported employment interventions for individuals with severe mental illness. *Archives of General Psychiatry, 62*(5), 505-512. doi:10.1001/archpsyc.62.5.505

Coster, W., Law, M., Bedell, G., Khetani, M., Cousins, M., & Teplicky, R. (2012). Development of the participation and environment measure for children and youth: conceptual basis. *Disability & Rehabilitation, 34*(3/4), 238-246. doi:10.3109/09638288.2011.603017

Croke, E. E., & Thompson, A. B. (2011). Person centered planning in a transition program for Bronx youth with disabilities. *Children & Youth Services Review, 33*(6), 810-819. doi:10.1016/j.childyouth.2010.11.025

Cruikshank, B. (2014). Disciplining the poor: Neoliberal paternalism and the persistent power of race. *Contemporary Political Theory, 13*(1), e1-e3. doi:10.1057/cpt.2013.4

Daniels, S. (1976). Consumer involvement in Rehabilitation. *Rehabilitation Counseling Bulletin, 19*(4), 610-612.

Davis, M., & Vander Stoep, A. (1996). The Transition to Adulthood among Adolescents Who have Serious Emotional Disturbance. Delmar, NY: The National Resource Center on Homelessness and Mental Illness Policy Research Associates.

Davis, M., & Vander Stoep, A. (1997). The Transition to Adulthood for Youth Who Have Serious Emotional Disturbance: Developmental Transition and Young Adult Outcomes. *Journal of Mental Health Administration, 24*(4), 400-427.

Dean, D., Pepper, J., Schmidt, R., & Stern, S. (2013). The Effects of Vocational Rehabilitation for People with Physical Disabilities. *Unpublished manuscript*.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of personality and social psychology, 18Th*, 105–115.

Deci, E. L. (1975). Intrinsic Motivation: Springer Science + Business Media.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin, 125*(6), 627-668.

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2016). Self-Determination Theory in Work Organizations: The State of a Science. *Annual Review of Organizational Psychology and Organizational Behavior, 4*. doi:10.1146/annurev-orgpsych-032516-113108

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.

Deci, E. L., & Ryan, R. M. (2014). The Importance of Universal Psychological Needs for Understanding Motivation in the Workplace. In M. n. Gagné (Ed.), *The Oxford Handbook of Work Engagement, Motivation, and Self-Determination* (pp. 13-32). New York: Oxford University Press.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71-75. doi:10.1207/s15327752jpa4901_13

Ditchman, N. (2010). *Factors contributing to sense of community for individuals with brain injury.* (Ph.D. Dissertation), University of Wisconsin - Madison.

Ditchman, N., Wu, M., Chan, F., Fitzgerald, S., Lin, C., & Tu, W. (2014). Vocational rehabilitation. In D. R. Strauser (Ed.), *Career development, employment, and disability in rehabilitation* (pp. 343-360). New York: Springer.

Dobak, C. (2014). Transition Planning and Services Provided through the State Vocational Rehabilitation Services Program. In Rehabilitation Services Administration (Ed.). Washington, D.C.: Rehabilitation Services Administration.

Donnell, C. M., Lustig, D. C., & Strauser, D. R. (2004). The Working Alliance: Rehabilitation Outcomes for Persons with Severe Mental Illness. *Journal of Rehabilitation, 70*(2), 12-18.

Dowd, E. T., & Emener, W. G. (1978). Lifeboat counseling: The issues of survival decisions. *Journal of Rehabilitation, 9*(2), 34-36.

Drebing, C. E., Van Ormer, E. A., Schutt, R. K., Krebs, C., & et al. (2004). Client Goals for Participating in VHA Vocational Rehabilitation: Distribution and Relationship to Outcome. *Rehabilitation Counseling Bulletin, 47*(3), 162-172. doi:10.1177/00343552040470030501

Dunham, M. D., Schrader, M. P., & Dunham, K. S. (2000). Vocational rehabilitation outcomes of adults with co-morbid borderline IQ and specific learning disabilities. *Journal of Rehabilitation, 66*(4), 31-36.

Durlak, C. M., Rose, E., & Bursuck, W. D. (1994). Preparing High School Students with Learning Disabilities for the Transition to Postsecondary Education: Teaching the Skills of Self-Determination. *Journal of Learning Disabilities, 27*, 51-59. doi:10.1177/002221949402700108

Dutta, A., Chan, F., Kundu, M. M., Kaya, C., Brooks, J., Sánchez, J., & Tansey, T. N. (2017). Assessing Vocational Rehabilitation Engagement of People with Disabilities. *Rehabilitation Counseling Bulletin, 60*(3), 145-154. doi:10.1177/0034355215626698

Dutta, A., Gervey, R., Chan, F., Chou, C. C., & Ditchman, N. (2008). Vocational rehabilitation services and employment outcomes for people with disabilities: A United States study. *Journal of Occupational Rehabilitation, 18*(4), 326-334. doi:10.1007/s10926-008-9154-z

Dutta, A., Scguri-Geist, C., & Kundu, M. (2009). Coordinator of postsecondary transition services for students with disability. *Journal of Rehabilitation, 75*, 10-17.

El-Khorazaty, M. N., Johnson, A. A., Kiely, M., El-Mohandes, A. A., Subramanian, S., Laryea, H. A., . . . Joseph, J. G. (2007). Recruitment and retention of low-income minority women in a behavioral intervention to reduce smoking, depression, and intimate partner violence during pregnancy. *Public Health, 7*, 233-250. doi:10.1186/1471-2458-7-233

Emener, W. G. (1991). Empowerment in Rehabilitation: An Empowerment Philosophy for Rehabilitation in the 20th Century. *Journal of Rehabilitation, 57*(4), 7-12.

Emener, W. G., Patrick, A., & Hollingsworth, D. K. (1984). Selected rehabilitation counseling issues: A historical perspective. *Critical issues in rehabilitation counseling*, 5-41.

Ensminger, M. E., Forrest, C. B., Riley, A. W., Kang, M., Green, B. F., Starfield, B., & Ryan, S. A. (2000). The Validity of Measures of Socioeconomic Status of Adolescents. *Journal of Adolescent Research, 15*(3), 392-419.

Escorpizo, R., Finger, M. E., Glässel, A., Gradinger, F., Lückenkemper, M., & Cieza, A. (2011). A Systematic Review of Functioning in Vocational Rehabilitation Using the International Classification of Functioning, Disability, and Health. *Journal of Occupational Rehabilitation, 21*(2), 134-146. doi:http://dx.doi.org/10.1007/s10926-011-9290-8

Escorpizo, R., Reneman, M. F., Ekholm, J., Fritz, J., Krupa, T., Marnetoft, S.-u., . . . Chan, C. C. (2011). A Conceptual Definition of Vocational Rehabilitation Based on the ICF: Building a Shared Global Model. *Journal of Occupational Rehabilitation, 21*(2), 126-133. doi:http://dx.doi.org/10.1007/s10926-011-9292-6

Evans, J. (1974). The role of the consumer in rehabilitation. *Journal of Applied Rehabilitation Counseling, 5*(3), 184-188.

Evers, A. W., Kraaimaat, F. W., Geenen, R., Jacobs, J. W., & Bijlsma, J. W. (2002). Long-term predictors of anxiety and depressed mood in early rheumatoid arthritis: a 3 and 5-year follow-up. *The Journal of rheumatology, 29*(11), 2327-2336.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149-1160.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(175-191).

Field, S. (1996). Self-Determination Instructional Strategies for Youth with Learning Disabilities. *Journal of Learning Disabilities, 29*, 40-52. doi:10.1177/002221949602900107

Field, S., & Hoffman, A. (1999). The Importance of Family Involvement for Promoting Self-Determination in Adolescents with Autism and Other Developmental Disabilities. *Focus on Autism and Other Developmental Disabilities, 14*, 36-41. doi:10.1177/108835769901400105

Field, S., Martin, J., Miller, R., Ward, M., & Wehmeyer, M. (1998). Self-Determination for Persons with Disabilities: A Position Statement of me Division on Career Development and Transition. *Career Development and Transition for Exceptional Individuals, 21*(2), 113-128. doi:10.1177/088572889802100202

Finger, M. E., Glässel, A., Erhart, P., Gradinger, F., Klipstein, A., Rivier, G., . . . Escorpizo, R. (2011). Identification of Relevant ICF Categories in Vocational Rehabilitation: A Cross Sectional Study Evaluating the Clinical Perspective. *Journal of Occupational Rehabilitation, 21*(2), 156-166. doi:http://dx.doi.org/10.1007/s10926-011-9308-2

Fitzgerald, S. D. (2014). *Validating the self-determination theory as a work motivation model for clubhouse members with severe and persistent mental illness.* (Ph. D. Doctoral Dissertation), UW - Madison.

Fitzgibbon, G., Cook, J. A., & Falcon, L. (2000). Vocational rehabilitation approaches for youth *Transition to adulthood: A resource for assisting young people with emotional or behavioral difficulties* (pp. 75-90).

Fogg, N. P., Harrington, P. E., & McMahon, B. T. (2010). The impact of the Great Recession upon the unemployment of Americans with disabilities. *Journal of Vocational Rehabilitation, 33*, 193-202. doi:10.3233/JVR-2010-0527

Foote, J., DeLuca, A., Magura, S., Grand, A., Rosenblum, A., & Stahl, S. (1999). A group motivational treatment for chemical dependence. *Journal of Substance Abuse, 17*, 181-192. doi:10.1016/s0740-5472(99)00003-3

Fowler, C. H., Konrad, M., Walker, A. R., Test, D. W., & Wood, W. M. (2007). Self-Determination Interventions' Effects on the Academic Performance of Students with

Developmental Disabilities. *Education and Training in Developmental Disabilities, 42*(3), 270-285.

Fox-Wasylyshyn, S. M., & El-Masri, M. M. (2005). Handling missing data in self-report measures. *Research in Nursing and Health, 28*(6), 488-495. doi:10.1002/nur.20100

Fraser, R., Johnson, K., Herbert, J., Ajzen, I., Copeland, J., Brown, P., & Chan, F. (2010). Understanding employers' hiring intentions in relation to qualified workers with disabilities: Preliminary findings. *Journal of Occupational Rehabilitation, 20*(4), 420-426. doi:10.1007/s10926-009-9220-1

Fraser, R. T., Vandergoot, D., Thomas, D., & Wagner, C. C. (2004). Employment outcomes research in vocational rehabilitation: Implications for Rehabilitation Counselor (RC) training. *Journal of Vocational Rehabilitation, 20*, 135-142.

Frayne, S. M., Mancuso, M., Prout, M. N., & Freund, K. M. (2001). Attitudes of primary care physicians toward cancer-prevention trials: a focus group analysis. *Journal of the National Medical Association, 93*(11), 450-457.

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing Moderator and Mediator Effects in Counseling Psychology Research. *Journal of Counseling Psychology, 51,* 115-134. doi:10.1037/0022-0167.51.1.115

Gagne´, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*, 331-362. doi:10.1002/job.322

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*, 331-362. doi:10.1002/job.322

Gaines, P. G. (1975). *Interstice model: A concept in human motivation for rehabilitation*. Stillwater, OK: National Clearinghouse of Rehabilitation Training Materials.

Giesen, J. M., & Cavenaugh, B. S. (2012). Transition-Age Youths with Visual Impairments in Vocational Rehabilitation: A New Look at Competitive Outcomes and Services. *Journal of Visual Impairment & Blindness, 106*(8), 475-487.

Gold, L. H. (2014). DSM-5 and the assessment of functioning: The World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0). *Journal of the American Academy of Psychiatry and the Law, 42*(2), 173-181.

Gonzalez, R., Rosenthal, D. A., & Kim, J. H. (2011). Predicting vocational rehabilitation outcomes of young adults with specific learning disabilities: Transitioning from school to work. *Journal of Vocational Rehabilitation, 34*(3), 163-172. doi:10.3233/JVR-2011-0544

Grant, A. M., & Shin, J. (2012). Work motivation: Directing, energizing, and maintaining research. In R. M. Ryan (Ed.), *The Oxford handbook of motivation* (pp. 505–519). New York: Oxford University Press.

Greenleaf, A. T., & Bryant, R. M. (2012). Perpetuating Oppression: Does the Current Counseling Discourse Neutralize Social Action? *Journal for Social Action in Counseling and Psychology, 4*, 18-29.

Grenwelge, C. (2010). *The Effects of the Texas Statewide Youth Leadership Forum summer training event on the self-advocacy abilities of high school students with disabilities.* (Ph.D. Dissertation), Texas A&M.

Griffin, M. M. (2011). Promoting IEP Participation: Effects of Interventions, Considerations for CLD Students. *Career Development for Exceptional Individuals, 34*(3), 153-164.

Hagner, D., Cheney, D., & Malloy, J. (1999). Career Related Outcomes of a Model Transition Demonstration for Young Adults with Emotional Disturbance. *Rehabilitation Counseling Bulletin, 42*(3), 228-242.

Hagner, D., & Marrone, J. (1995). Empowerment Issues in Services to Individuals with Disabilities. *Journal of Disability Policy Studies, 6*(2), 17-36. doi:10.1177/104420739500600202

Hahn, H. D. (1991). Alternative Views of Empowerment: Social Services and Civil Rights. *Journal of Rehabilitation, 57*(4), 17-19.

Hansen, C. D., Rasmussen, K., Kyed, M., Nielsen, K. J., & Hviid Andersen, J. (2012). Physical and psychosocial work environment factors and their association with health outcomes in Danish ambulance personnel—a cross-sectional study. *BMC Public Health, 12*, 534-546. doi:10.1186/1471-2458-12-534

Härkäpää, K., Järvikoski, A., & Gould, R. (2014). Motivational orientation of people participating in vocational rehabilitation. *Journal of Occupational Rehabilitation, 24*(4), 658-669. doi:10.1007/s10926-013-9496-z

Harmon, J. C., Jr. (1976). Who speaks for the handicapped? *American Rehabilitation, 1*(5), 19-23.

Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: the effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(Part 6), 405-418.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs, 76*(4), 408-420. doi:10.1080/03637750903310360

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. (2016).

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: Guilford Press.

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science, 24*, 1918-1927.

Hein, S., Lustig, D. C., & Uruk, A. (2005). Consumers' Recommendations to Improve Satisfaction with Rehabilitation Services: A Qualitative Study. *Rehabilitation Counseling Bulletin, 49*, 29-39. doi:10.1177/00343552050490010401

Heinrichs, N., Bertram, H., Kuschel, A., & Hahlweg, K. (2005). Parent recruitment and retention in a universal prevention program for child behavior and emotional problems: barriers to research and program participation. *Prevention Science, 6*(4), 275-286. doi:10.1007/s11121-005-0006-1

Heller, T., Miller, A. B., Hsieh, K., & Sterns, H. (2000). Later-life planning: promoting knowledge of options and choice-making. *Mental Retardation, 38*(5), 395-406. doi:10.1352/0047-6765(2000)038<0395:LPPKOO>2.0.CO;2

Henson, R. K., & Smith, A. D. (2016). State of the art in statistical significance and effect size reporting: A review of the APA Task Force report and current trends. *Journal of Research & Development in Education, 33*(4), 285-296.

Heppner, P. P., Wampold, B. E., & Kivlighan, D. M. (2007). *Research Design in Counseling* (3rd ed.): Brooks Cole.

Herschenson, D. B., Crater, L. A., Enoch, B. D., Gaskell, A. W., Huston, W. J., Kuljian, J. M., . . . Tabb, B. (1981). Toward a theory of rehabilitation counseling. *Journal of Applied Rehabilitation Counseling, 12*, 23-26.

Hibbard, J. H., & Greene, J. (2013a). What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. *Health Affairs, 32*(2), 207-214. doi:10.1377/hlthaff.2012.1061

Hibbard, J. H., & Greene, J. (2013b). What the evidence shows about patient activation: Better health outcomes and care experiences; fewer data on costs. *Health Affairs (Millwood), 32*, 207-214.

Hibbard, J. H., Stockard, J., Mahoney, E. R., & Tusler, M. (2004). Development of the Patient Activation Measure (PAM): Conceptualizing and Measuring Activation in Patients and Consumers. *Health Services Research, 39*(4), 1005-1026.

Hill, K. M., Lightfoot, E., & Kimball, E. (2010). Foster Care Transition Services for Youth with Disabilities: Findings from a Survey of County Service Providers. *Child Welfare, 89*(6), 63-81.

Hofer, J., & Busch, H. (2011). Satisfying one's needs for competence and relatedness consequent domain-specific well-being depends on strength of implicit motives. *Personality and Social Psychology Bulletin, 37*(9), 1147-1158. doi:10.1177/0146167211408329

Hollingshead, A. B. (1975). Four factor index of social status *Unpublished manuscript*. New Haven, CT: Yale University.

Holmes, G. E. (1993). The Historical Roots of the Empowerment Dilemma in Vocational Rehabilitation. *Journal of Disability Policy Studies, 4*, 1-20. doi:10.1177/104420739300400101

Honeycutt, T., Thompkins, A., Bardos, M., & Stern, S. (2015). State Differences in the Vocational Rehabilitation Experiences of Transition-Age Youth with Disabilities. *Journal of Vocational Rehabilitation, 42*, 17-30. doi:10.3233/JVR-140721

Horvath, A. (1994). Research on the alliance. In A. Horvath & L. Greenberg (Eds.), *The working alliance: Theory, research and practice* (pp. 259-286). New York: Wiley.

Horvath, A., & Symonds, D. (1991). Relation between the working alliance and outcome in psychotherapy: A meta- analysis. *Journal of Counseling Psychology, 38,* 139-149.

Horvath, A. O., Del Re, A. C., Fluckiger, C., & Symonds, D. (2011). Alliance in individual therapy. *Psychotherapy: Theory, Research, Practice, Training, 48*, 9-16. doi:10.1037/a0022186

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36,* 223-233. doi:10.1037/0022-0167.36.2.223

Hoyt, W. T., Imel, Z. E., & Chan, F. (2008). Multiple regression and correlation techniques: Recent controversies and best practices. *Rehabilitation Psychology, 53*(3), 321-339. doi:10.1037/a0013021

Hoyt, W. T., Leierer, S., & Millington, M. J. (2006). Analysis and Interpretation of Findings Using Multiple Regression Techniques. *Rehabilitation Counseling Bulletin, 49*(4), 223-233.

Hoyt, W. T., & Mallinckrodt, B. (2012). Improving the Quality of Research in Counseling Psychology: Conceptual and Methodological Issues. In N. A. Fouad (Ed.), *APA Handbook of Counseling Psychology* (Vol. 1). Washington, DC: American Psychological Association.

Hultell, D., & Petter-Gustavsson, J. (2008). A psychometric evaluation of the Satisfaction with Life Scale in a Swedish nationwide sample of university students. *Personality and Individual Differences, 44*(5), 1070-1079. doi:10.1016/j.paid.2007.10.030

Imai, K., Keele, L., & Tingley, D. (2010). A general approach to causal mediation analysis. *Psychological Methods, 15*(4), 3039-3334. doi:10.1037/a0020761

Individuals with Disabilities Education Improvement Act Pub. L. No. 108–446, 118 STAT. 2647 Stat. (2004 DEC. 3, 2004).

Inge, K. J., Wehman, P., Strobel, W., Powell, D., & Todd, J. (1998). Supported employment and assistive technology for persons with spinal cord injury: Three illustrations of successful work supports. *Journal of Vocational Rehabilitation, 10*, 141-152.

Inlander, C. B. (1991). Trends in medical consumerism. In A. M. Rees (Ed.), *Managing consumer health information services* (pp. 3-14). Phoenix, AZ: Oryx Press.

Izzo, M. V., & Lamb, P. (2003). Developing self-determination through career development activities: Implications for vocational rehabilitation counselors. *Journal of Vocational Rehabilitation, 19*(2), 71-78.

Burke, J., Bezyak, J., Fraser, R. T., Pete, J., Ditchman, N., & Chan, F. (2013). Employers' Attitudes Towards Hiring and Retaining People with Disabilities: A Review of the Literature. *Australian Journal of Rehabilitation Counselling, 19*, 21-38. doi:10.1017/jrc.2013.2

Jenkins, W. M., Patterson, J. B., & Szymanski, E. M. (1998). Philosophical, historical, and legislative aspects of the rehabilitation counseling profession. *Rehabilitation counseling: Basics and beyond, 3*, 1-40.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits--self-esteem, generalized self-efficacy, locus of control, and emotional stability--with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*, 80-92. doi:10.1037//0021-9010.86.1.80

Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self- evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology, 90*(2), 257–268. doi:10.1037/0021-9010.90.2.257

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The Core Self-Evaluations Scale (CSES): Development of a measure. *Personnel Psychology, 56*, 303-331.

Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19*, 151–188. Retrieved from <Go to ISI>://WOS:A1997BH47E00003

Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*, 17-34. doi:10.1037/ 0021-9010.83.1.17

Jung, Y., Schaller, J., & Bellini, J. (2010). Predictors of Employment Outcomes for State-Federal Vocational Rehabilitation Consumers With HIV/AIDS. *Rehabilitation Counseling Bulletin, 53*(3), 175-185. doi:http://dx.doi.org/10.1177/0034355209356596

Kahn, L. G. (2014). *Can't We Just Be Who We Are? The Experiences, Identity, and Beliefs of Adolescents with Disabilities Who Identify as a Sexual or Gender Minority.* (Ph.D.), University of Oregon.

Kaplan, R. M., Hartwell, S. L., Wilson, D. K., & Wallace, J. P. (1987). Effects of diet and exercise interventions on control and quality of life in non-insulin-dependent diabetes mellitus. *Journal of general internal medicine, 2*(4), 220-228.

Kasser, T., Davey, J., & Ryan, R. M. (1992). Motivation and employee-supervisor discrepancies in a psychiatric vocational rehabilitation setting. *Rehabilitation Psychology, 37*, 175.

Kelly, K. (2007). Methods for the Behavioral, Educational, and Social Sciences: An R package. *Behavior Research Methods, 39*(4), 979-984.

Khanna, R., Madhavan, S. S., Smith, M. J., Patrick, J. H., Tworek, C., & Becker-Cottrill, B. (2011). Assessment of Health-Related Quality of Life Among Primary Caregivers of Children with Autism Spectrum Disorders. *Journal of Autism & Developmental Disorders, 41*(9), 1214-1227. doi:10.1007/s10803-010-1140-6

King, P., & Barrowclough, C. (1989). Rating the motivation of elderly patients on a rehabilitation ward. *Clinical Rehabilitation, 3*, 289-291.

Konecky, B., Meyer, E. C., Marx, B. P., Kimbrel, N. A., & Morissette, S. B. (2014). Using the WHODAS 2.0 to assess functional disability associated with DSM-5 mental disorders. *The American Journal of Psychiatry, 171*(8), 818-820. doi:10.1176/appi.ajp.2014.14050587

Kosciulek, J. F. (2003). A Multidimensional Approach to the Structure of Consumer Satisfaction with Vocational Rehabilitation Services. *Rehabilitation Counseling Bulletin, 46*(2), 92-97. doi:10.1177/00343552030460020301

Kosciulek, J. F. (2004). Empowering people through vocational rehabilitation counseling. *American Rehabilitation, 28*.

Kosciulek, J. F. (2007). A Test of the Theory of Informed Consumer Choice in Vocational Rehabilitation. *Journal of Rehabilitation, 73*(2), 41-49.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2003). The Patient Health Questionnaire-2: validity of a two-item depression screener. *Medical Care, 41*, 1284-1292.

Kroenke, K., Spitzer, R. L., Williams, J. B. W., & Löwe, B. (2009). An Ultra-Brief Screening Scale for Anxiety and Depression: The PHQ–4. *Psychosomatics, 50*(6), 613-621. doi:10.1016/s0033-3182(09)70864-3

Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: A literature review. *Quality & Quantity, 47*(4), 2025-2047.

Kukla, M., & Bond, G. R. (2009). The Working Alliance and Employment Outcomes for People with Severe Mental Illness Enrolled in Vocational Programs. *Rehabilitation Psychology, 54*(2), 157-163. doi:10.1037/a0015596

Kulnik, S. T., & Nikoletou, D. (2014). WHODAS 2.0 in community rehabilitation: A qualitative investigation into the validity of a generic patient-reported measure of disability. *Disability and Rehabilitation: An International, Multidisciplinary Journal, 36*(2), 146-154. doi:10.3109/09638288.2013.782360

Lachapelle, Y., Wehmeyer, M., & Walsh, P. N. (2004). Cross-cultural research on self-determination and quality of life. *Journal of Intellectual Disability Research, 48*, 449.

Lachapelle, Y., Wehmeyer, M. L., Haelewyck, M. C., Courbois, Y., & et al. (2005). The relationship between quality of life and self-determination: an international study. *Journal of Intellectual Disability Research, 49*, 740-744.

Lane, J. M., & Barry, J. R. (1970). Client motivation. *Rehabilitation Research and Practice Review, 1*(4), 5-26.

Leahy, M. J., Chan, F., & Lui, J. (2014). Evidence-based Best Practices in the Public Vocational Rehabilitation Program that Lead to Employment Outcomes. *Journal of Vocational Rehabilitation, 41*, 83-86. doi:10.3233/JVR-140704

Leahy, M. J., Thielsen, V. A., Millington, M. J., Austin, B., & Fleming, A. (2009). Quality Assurance and Program Evaluation: Terms, Models and Applications in Rehabilitation Administration. *Journal of Rehabilitation Administration, 33*(2), 69-82.

Lehman, W. E., Greener, J. M., & Simpson, D. D. (2002). Assessing organizational readiness for change. *Journal of substance abuse treatment, 22*(4), 197-209.

Lehmann, J. P., Bassett, D. S., Sands, D. J., Spencer, K., & Gliner, J. A. (1999). Research Translated into Practices for Increasing Student Involvement in Transition-Related Activities. *Career Development and Transition for Exceptional Individuals, 22*, 3-19. doi:10.1177/088572889902200102

Levinson, E. M., & Palmer, E. J. (2005). Preparing students with disabilities for school-to-work transition and postschool life. *Principal Leadership, 5*(8), 11-15.

Lewis, J. S. (1974). The handicapped consumer: Professional speaks. *Journal of Rehabilitation Counseling Bulletin, 40*(2), 24-25.

Little, D., Hawley, P. H., Henrich, C. C., & Marsland, K. W. (2002). Three Views of the Agentic Self: A Developmental Synthesis. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of Self-Determination* (pp. 390-404): University of Rochester Press.

Loeb, M., Madans, J., Weeks, J., Miller, K., Dahlhamer, J., & Golden, C. (2009). Disability and Participation: Assessing Employment and Education Outcomes in the National Health Interview Survey (2010). *Research in Social Science & Disability, 7*, 171-188. doi:10.1108/S1479-3547(2013)0000007008

Lowe, B., Wahl, I., Rose, M., Spitzer, C., Glaesmer, H., Wingenfeld, K., . . . Brahler, E. (2010). A 4-item measure of depression and anxiety: validation and standardization of the Patient

Health Questionnaire-4 (PHQ-4) in the general population. *Journal of Affective Disorders, 122* (1-2), 86-95. doi:10.1016/j.jad.2009.06.019

Lubben, J., Gironda, M., Sabbath, E., Kong, J., & Johnson, C. (2015). *Social Isolation Presents a Grand Challenge for Social Work*. Retrieved from

Luecking, R., & Gramlich, M. (2003). Quality Work-Based Learning and Post-School Employment Success. *National Center on Secondary Education and Transition, 2*(2), 1-6.

Lui, J., Anderson, C., Matthews, P., & Nierenhausen, E. (2014). Knowledge translation strategies to improve the resources for rehabilitation counselors to employ best practices in the delivery of VR services. *Journal of Vocational Rehabilitation, 41*(2), 137–145.

Lustig, D. C., & Strauser, D. R. (2004). Editorial: Poverty and disability. *Journal of Rehabilitation, 70*(3), 3-4.

Lustig, D. C., & Strauser, D. R. (2007). Causal relationships between poverty and disability. *Rehabilitation Counseling Bulletin, 50*(4), 194-202. doi:10.1177/00343552070500040101

Lustig, D. C., Strauser, D. R., Rice, N. D., & Rucker, T. F. (2002). The Relationship Between Working Alliance and Rehabilitation Outcomes. *Rehabilitation Counseling Bulletin, 46*, 24-32.

Madaus, J. W., Grigal, M., & Hughes, C. A. (2014). Promoting access to postsecondary education for low-income students with disabilities. *Career Development and Transition for Exceptional Individuals, 37*, 50-59.

Madaus, J. W., Lalor, A. R., Gelbar, N., & Kowitt, J. (2014). The Journal of Postsecondary Education and Disability: From Past to Present. *Journal of Postsecondary Education and Disability, 27*(4), 347 - 356.

Malian, I., & Nevin, A. (2002). A review of self-determination literature: Implications for practitioners. *Remedial and Special Education, 23*(2), 68.

Mallett, C. (2009). Disparate Juvenile Court Outcomes for Disabled Delinquent Youth: A Social Work Call to Action. *Child & Adolescent Social Work Journal, 26*(3), 197-207. doi:10.1007/s10560-009-0168-y

Mallinson, T., & Hammel, J. (2010). Measurement of participation: Intersecting person, task, and environment. *Archives of Physical Medicine and Rehabilitation, 91*(9 (supplement)), S29-S33.

Manteuffel, B., Stephens, R. L., Sondheimer, D. L., & Fisher, S. K. (2008). Characteristics, Service Experiences, and Outcomes of Transition-Aged Youth in Systems of Care: Programmatic and Policy Implications. *Journal of Behavioral Health Services & Research, 35*(4), 469-487. doi:10.1007/s11414-008-9130-6

Markland, D., Ryan, R. M., Tobin, V., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24*, 811-831. doi:10.1521/jscp.2005.24.6.811

Martin, E. D., Jr. (2007a). *Principles and practices of case management in rehabilitation counseling (2nd Ed.)*. Springfield, IL, US: Charles C Thomas Publisher.

Martin, P. P. (2007b). Hispanics, Social Security, and Supplemental Security Income. *Social Security Bulletin, 67*(2), 73-100.

Martin, J. E., Van Dycke, J. L., Christensen, W. R., Greene, B. A., Gardner, J. E., & Lovett, D. L. (2006). Increasing Student Participation in IEP Meetings: Establishing the Self-Directed IEP as an Evidenced-Based Practice. *Exceptional Children, 72*(3), 299-316. doi:10.1177/001440290607200303

Martin, R., West-Evans, K., & Connelly, J. (2010). Vocational rehabilitation: Celebrating 90 years of careers and independence. *American Rehabilitation*, 15-18.

Mazzotti, V. L., Kelley, K. R., & Coco, C. M. (2015). Effects of Self-Directed Summary of Performance on Postsecondary Education Students' Participation in Person-Centered Planning Meetings. *Journal of Special Education, 48*(4), 243-255. doi:10.1177/0022466913483575

McCall, L. (2005). The Complexity of Intersectionality. *Signs, 30*(3), 1771-1800.

McDougall, J., Evans, J., & Baldwin, P. (2010). The Importance of Self-Determination to Perceived Quality of Life for Youth and Young Adults with Chronic Conditions and Disabilities. *Remedial and Special Education, 31*(4), 252.

McGlashing-Johnson, J., Agran, M., Sitlington, P., Cavin, M., & Wehmeyer, M. (2003). Enhancing the Job Performance of Youth with Moderate to Severe Cognitive Disabilities Using the Self-Determined Learning Model of Instruction. *Research and Practice for Persons with Severe Disabilities, 28*(4), 194-204. doi:10.2511/rpsd.28.4.194

McLoughlin, C. (2002). Barriers to hiring students with disabilities in the workforce. *International Education Journal, 3*, 12-23.

McMahon, B. T., Shaw, L. R., Chan, F., & Danczyk-Hawley, C. (2004). "Common factors" in rehabilitation counseling: Expectancies and the working alliance. *Journal of Vocational Rehabilitation*, 101-105.

Metz, A. J., & Guichard, J. (2009). Vocational psychology and new challenges. *The Career Development Quarterly, 57*(4), 310-318. Retrieved from <Go to ISI>://WOS:000266858500004

Michie, S., Johnston, M., Abraham, C., Lawton, R., Parker, D., Walker, A., & Psychological Theory Group. (2005). Making psychological theory useful for implementing evidence based practice: a consensus approach. *Quality and Safety in Health Care, 14*(1), 26-33. doi:10.1136/qshc.2004.011155

Miller, S. (1971). Consumer participation. *Journal of Rehabilitation, 37*(6), 18-21.

Moodley, J., & Graham, L. (2015). The importance of intersectionality in disability and gender studies. *Agenda-Empowering Women for Gender Equity, 29*(2), 24-33. doi:10.1080/10130950.2015.1041802

Moore, E. J., & Schelling, A. (2015). Postsecondary inclusion for individuals with an intellectual disability and its effects on employment. *Journal of Intellectual Disability, 19*(2), 130-148. doi:10.1177/1744629514564448

Mor, S. (2011). Disability and the Persistence of Poverty: Reconstructing Disability Allowances. *Northwester Journal of Law & Social Policy, 6*, 178-214.

Msall, M. E., Bobis, F., & Field, S. (2006). Children with disabilities and supplemental security income: guidelines for appropriate access in early childhood. *Infants & Young Children: An Interdisciplinary Journal of Special Care Practices, 19*, 2-15.

Mull, C., Sitlington, P. L., & Alper, S. (2001). Postsecondary Education for Students with Learning Disabilities: A Synthesis of the Literature. *Exceptional Children, 68*, 97-118. doi:10.1177/001440290106800106

Mullins, J., Roessler, R., Schriner, K., Brown, P., & Bellini, J. (1997). Improving employment outcomes through quality rehabilitation counseling *The Journal of Rehabilitation, 67*(4), 21-31.

Murphy, S. T., & Rogan, P. (1995). *Closing the shop*. Baltimore: Brooks.

Murray, C., & Doren, B. (2012). The Effects of Working at Gaining Employment Skills on the Social and Vocational Skills of Adolescents with Disabilities: A School-Based Intervention. *Rehabilitation Counseling Bulletin, 56*(2), 96-107. doi:10.1177/0034355212452614

Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.

Muthard, J. E., & Salamone, P. R. (1969). The roles and functions of the rehabilitation counselor. *Rehabilitation Counseling Bulletin, 13*, 81-168.

Nadel, M., Wamhoff, S., & Wiseman, M. (2003). Disability, Welfare Reform, and Supplemental Security Income. *Social Security Bulletin, 65*(3), 14-30.

Nader-Grosbois, N. (2014). Self-perception, self-regulation and metacognition in adolescents with intellectual disability. *Research in Developmental Disabilities, 35*(6), 1334-1348. doi:http://dx.doi.org/10.1016/j.ridd.2014.03.033

National Collaborative on Workforce and Disability for Youth. (2015). *Guideposts for Success*. Retrieved from Washington, D.C.: http://www.ncwd-youth.info/sites/default/files/Guideposts-for-Success-(English).pdf

National Council on Disability. (2008). *The Rehabilitation Act: Outcomes for Transition-Age Youth*. Washington, DC Retrieved from http://www.ncd.gov/publications/2008/10282008.

Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2010). Comparisons Across Time of the Outcomes of Youth with Disabilities up to 4 Years After High School *a Report of Findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., . . . Schwarting, M. (2011). The Post-High School Outcomes of Young Adults with Disabilities up to 8 Years After High School *a Report from the National Longitudinal Transition Study-2 (NLTS2) (NCSER 2011-3005)*. Menlo Park, CA: SRI International.

Nota, L., Ferrari, L., Soresi, S., & Wehmeyer, M. L. (2007). Self-determination, social abilities, and the quality of life of people with intellectual disability. *Journal of Intellectual Disability Research, 51*(11), 850-865.

Nota, L., & Soresi, S. (2004). Self-determination, social skills, and quality of life. *Journal of Intellectual Disability Research, 48*, 450.

O'Brien, C. L., & O'Brien, J. (2000). The Origins of Person-Centered Planning: A Community of Practice Perspective: Responsive Systems Associates.

O'Brien, M., & Daggett, J. A. (2006). *Beyond the autism diagnosis: A professional's guide to helping families*. Baltimore, MD: Brookes.

Office of Disability Employment Policy. (2015). Literature Review of Five Federal Systems Serving Transition Age Youth with Disabilities. In United States Department of Labor (Ed.), (pp. 1-55): Office of Disability Employment Policy.

Okon, S., & Webb, D. (2014). Self-determination: A curriculum of empowerment for health and wellness in a psychosocial rehabilitation clubhouse. *Occupational Therapy in Mental Health, 30*(2), 196-212. doi:10.1080/0164212X.2014.911672

Orlinsky, D. E., Grawe, K., & Parks, B. K. (1994). Handbook of psychotherapy and behavior change. In A. E. Bergin & S. L. Garfield (Eds.), (4th ed., pp. 270-376). Oxford, England: John Wiley & Sons.

Pack, T. G., & Szirony, G. M. (2009). Predictors of competitive employment among persons with physical and sensory disabilities: An evidence-based model. *Work: Journal of Prevention, Assessment & Rehabilitation, 33*, 67-79.

Parent, W. (1993). Quality of life and consumer choice. In P. Wehman (Ed.), *The ADA mandate for social change* (pp. 19-41). Baltimore, MD: Paul H. Brookes.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*(4), 827–856. doi:10.1177/0149206310363732

Patterson, J. B., & Leach, R. (1987). Client satisfaction in voca-tional rehabilitation. *Journal of Rehabilitation, 53*(2), 40-43.

Patterson, J. B., & Marks, C. (1992). The client as customer: achieving service quality and customer satisfaction in Rehabilitation. *Journal of Rehabilitation, 58*(16-21), 16-21.

Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment, 5*(2), 164-172. doi:10.1037/1040-3590.5.2.164

Peterson, D. B., & Aguiar, L. J. (2004). History and Systems: United States. In T. F. Riggar & D. R. Maki (Eds.), *Handbook of Rehabilitation Counseling*. New York: Springer.

Podmostko, M. (2007). *Tunnels and cliffs: A guide for workforce development practitioners and policymakers serving youth with mental health needs*. Retrieved from Washington, DC:

Pokempner, J., & Roberts, D. E. (2001). Poverty, Welfare Reform, and the Meaning of Disability. *Ohio State Law Journal, 62*(425).

Polak, P., & Warner, R. (1996). The economic life of seriously mentally ill people in the community. *Psychiatric Services, 47*(3), 270-274. doi:10.1176/ps.47.3.270

Povee, K., Roberts, L., Bourke, J., & Leonard, H. (2012). Family functioning in families with a child with Down syndrome: a mixed methods approach. *Journal of Intellectual Disability Research, 56*(10), 961-973. doi:10.1111/j.1365-2788.2012.01561.x

Powers, L. E., Ward, N., Ferris, L., Nelis, T., & et al. (2002). Leadership by people with disabilities in self-determination systems change. *Journal of Disability Policy Studies, 13*(2), 125-133.

Rabren, K., Dunn, C., & Chambers, D. (2002). Predictors of Post-High School Employment among Young Adults with Disabilities. *Career Development for Exceptional Individuals, 25*, 25-40.

Raichle, K. A., Hanley, M., Jensen, M. P., & Cardenas, D. D. (2007). Cognitions, coping and social environment predict adjustment to pain in spinal cord injury. *Journal of Pain, 8*(9), 718-729. doi:10.1016/j.jpain.2007.05.006

Remmes, H. (1974). Consumer feedback: Tiny Tim is dead! *Rehabilitation Literature, 34*(10), 298-300.

Rhoades, D. R., McFarland, K. F., & Knight, P. G. (1995). Evolution of Consumerism in Rehabilitation Counseling: A Theoretical Perspective. *Journal of Rehabilitation, 61*(2), 26-28.

Ribet, B. (2014). Emergent Disability and the Limits of Equality: A Critical Reading of the UN Convention on the Rights of Persons with Disabilities. *Yale Human Rights and Development Journal, 14*, 155-204.

Richardson, M. (1994). The Impact of the Americans with Disabilities Act on Employment Opportunity for People with Disabilities. *Annual Review of Public Health, 15*, 91-105. doi:10.1146/annurev.pu.15.050194.000515

Rintala, D. H., Young, M. E., Hart, K. A., Clearman, R. R., & Fuhrer, M. J. (1992). Social support and the well-being of persons with spinal cord injury living in the community. *Rehabilitation Psychology, 37*(3), 155-163. doi:10.1037//0090-5550.37.3.155

Robertson, J., Emerson, E., Hatton, C., Elliott, J., McIntosh, B., Swift, P., . . . Joyce, T. (2007). Person-centred planning: factors associated with successful outcomes for people with intellectual disabilities. *Journal of Intellectual Disability Research, 51*(Pt 3), 232-243. doi:10.1111/j.1365-2788.2006.00864.x

Roffman, A. J., Herzog, J. E., & Wershba-Gershon, P. M. (1994). Helping Young Adults Understand Their Learning Disabilities. *Journal of Learning Disabilities, 27*(7), 413-419. doi:10.1177/002221949402700702

Rumrill, P. D., Jr., & Roessler, R. T. (1999). New Directions in Vocational Rehabilitation: A "Career Development" Perspective On "Closure." *Journal of Rehabilitation, 65*, 26-30.

Rusalem, H., & Malikin, D. (1976). *Contemporary vocational rehabilitation*. New York: New York University Press.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of personality, 63*(3), 397-427. doi:10.1111/j.1467-6494.1995.tb00501

Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology, 25*, 54-67. doi:10.1006/ceps.1999.1020

Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist, 55*, 68–75. doi:10.1037110003-066X.55.1.68

Ryan, R. M., Patrick, H., Deci, E. L., & Williams, G. C. (2008). Facilitating health behaviour change and its maintenance: Interventions based on self-determination theory. *European Health Psychologist, 10*, 2-5.

Ryan, R. M., & Stiller, J. (1991). *The social contexts of internalization: Parent and teacher influences on autonomy, motivation, and learning* (Vol. 7). Greenwich, CT: JAI Press.

Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behaviour: A review and Meta-analysis. *Applied Psychology: An International Review, 42*(2), 139-152.

Safilios-Rothschild. (1970). *The sociology and social psychology of disability and rehabilitation*. New York: Random House.

Sales, A. (2007). *Rehabilitation Counseling: An Empowerment Perspective*. Austin, TX: Pro-Ed.

Schall, C., Cortijo-Doval, E., Targett, P. S., & Wehman, P. (2006). Applications for youth with autism spectrum disorders. In P. Wehman (Ed.), *Life beyond the classroom: Transition strategies for young people with disabilities* (4th ed., pp. 535–575). Baltimore, MD: Brookes.

Schall, C., Wehman, P., Brooke, V., Graham, C., McDonough, J., Brooke, A., . . . Allen, J. (2015). Employment interventions for individuals with ASD: The relative efficacy of supported employment with or without prior Project SEARCH training. *Journal of Autism and Developmental Disorders, Advance online publication*. doi:10.1007/s10803-015-2426-5

Schnirer, L., & Stack-Cutler, H. (2012). Recruitment and engagement of low-income populations: Service provider and researcher perspectives *Community-University Partnership for the Study of Children, Youth, and Families*. Edmonton, AB: University of Alberta.

Schwarzer, R., & Leppin, A. (1992). Possible impact of social ties and support on morbidity and mortality. In H. O. F. Veiel & U. Baumann (Eds.), *The meaning and measurement of social support. The series in clinical and community psychology* (pp. 65-83). Washington, DC.

Seelman, K., & Sweeney, S. (1995). The changing universe of disability. *American Rehabilitation, 21*(2-13).

Seo, H. M. A., Wehmeyer, M. L. P., Palmer, S. B. P., & Little, T. D. P. (2015). A Two-Group Confirmatory Factor Analysis of The Arc's Self-Determination Scale with Students with Emotional/Behavioral Disorders or Learning Disabilities. *Journal of Emotional and Behavioral Disorders, 23*, 17.

Serna, L. A., & Lau-Smith, J. A. (1995). Learning with Purpose: Self-Determination Skills for Students Who Are at Risk for School and Community Failure. *Intervention in School and Clinic, 30*(3), 142-146. doi:10.1177/105345129503000303

Shapiro, J. P. (1994). *No pity*. New York: Time Books.

Shogren, K. A., Lopez, S. J., Wehmeyer, M. L., Little, T. D., & Pressgrove, C. L. (2006). The role of positive psychology constructs in predicting life satisfaction in adolescents with and without cognitive disabilities: An exploratory study. *Journal of Positive Psychology, 1*, 37–52.

Shogren, K. A., Palmer, S. B., Wehmeyer, M. L., Williams-Diehm, K., & Little, T. D. (2012). Effect of Intervention with the Self-Determined Learning Model of Instruction on Access and Goal Attainment. *Remedial and Special Education, 33*(5), 320-330.

Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Rifenbark, G. G., & Little, T. D. (2015). Relationships between Self-Determination and Postschool Outcomes for Youth with Disabilities. *Journal of Special Education, 48*(4), 256-267. doi:http://dx.doi.org/10.1177/0022466913489733

Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Soukup, J. H., Little, T. D., Garner, N., & Lawrence, M. (2007). Examining individual and ecological predictors of the self-determination of students with disabilities. *Exceptional Children, 73*, 488-509.

Shriner, J. G., & Destefano, L. (2003). Participation and Accommodation in State Assessment: The Role of Individualized Education Programs. *Exceptional Children, 69*(2), 147-161. doi:10.1177/001440290306900202

Simonsen, M. L., & Neubert, D. A. (2013). Transitioning youth with intellectual and other developmental disabilities: Predicting community employment outcomes. *Career Development and Transition for Exceptional Individuals, 36*(3), 188-198.

Skinner, B. F. (1953). *Science and Human Behavior*. New York: Free Press.

Smedema, S. M. (2014). Core self-evaluations and well-being in persons with disabilities. *Rehabilitation Psychology, 59*(4), 407-414. doi:10.1037/rep0000013

Smedema, S. M., Chan, J. Y., & Phillips, B. N. (2014). Core self-evaluations and Snyder's hope theory in persons with spinal cord injuries. *Rehabilitation Psychology, 59*(4), 399-406. doi:10.1037/rep0000015

Smedema, S. M., & Tansey, T. (2014). Mediators of the relationship between core self-evaluation and life satisfaction in persons with spinal cord injuries. *Rehabilitation Counseling Bulletin*, Advance online publication.

Smedema, S. M., Ruiz, D., & Mohr, M. (2017). Psychometric Validation of the World Health Organization Disability Assessment Schedule 2.0—Twelve-Item Version in Persons with Spinal Cord Injuries. *Rehabilitation Research, Policy, and Education, 31*, 7-20. doi:https://doi-org.ezproxy.library.wisc.edu/10.1891/2168-6653.31.1.7

Solomon, P., Draine, J., & Delaney, M. A. (1995). The Working Alliance and Consumer Case Management. *The Journal of Mental Health Administration, 22*(2), 126-134.

Solovieva, T., Walls, R., Hendricks, D., & Dowler, D. (2009). Cost of workplace accommodations for individuals with disabilities with or without personal assistance services. *Disability and Health Journal, 2*, 196-205.

Sprague, J., & Hayes, J. (2000). Self-determination and empowerment: A feminist standpoint analysis of talk about disability. *American Journal of Community Psychology, 28*(5), 671-695.

Stiers, W. P., Carlozzi, N. P., Cernich, A. P., Velozo, C. P., Pape, T. D., Hart, T. P., . . . Whiteneck, G. P. (2012). Measurement of social participation outcomes in rehabilitation of veterans with traumatic brain injury. *Journal of Rehabilitation Research and Development, 49*, 139-154.

Strauser, D. R., & Berven, N. L. (2006). Construction and Field Testing of the Job Seeking Self-Efficacy Scale. *Rehabilitation Counseling Bulletin, 49*(4), 207-218.

Stubbins, J. (1984). Rehabilitation services as ideology. *Reha-bilitation Psychology, 29*, 197-203.

Substance Abuse and Mental Health Services Administration. (2014). *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. (SMA 14-4863). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Suk-Hyang Lee, d. e. a. k., Wehmeyer, M. L., & Shogren, K. A. (2015). Effect of Instruction with the Self-Determined Learning Model of Instruction on Students with Disabilities: A Meta-Analysis. *Education & Training in Autism & Developmental Disabilities, 50*(2), 237-247.

Symister, P., & Friend, R. (2003). The influence of social support and problematic support on optimism and depression in chronic illness: a prospective study evaluating self-esteem as a mediator. *Health Psychology, 22*(2), 123-129. doi:10.1037/0278-6133.22.2.123

Szymanski, E. M. (1994). Transitions: Life span and life-space considerations for empowerment. *Exceptional Children, 60,* 402-410.

Szymanski, E. M., & Parker, R. M. (1989). Relationship of Rehabilitation Client Outcome to Level of Rehabilitation Counselor Education. *Journal of Rehabilitation, 55*(4), 32-36.

Tamborini, C., Cupito, E., & Shoffner, D. (2011). A Profile of Social Security Child Beneficiaries and Their Families: Sociodemographic and Economic Characteristics. *Social Security Bulletin, 71*.

Tansey, T., Bezyak, J., Chan, F., Leahy, M., & Lui, J. (2014). Empirical findings of the perceptions of rehabilitation counselors on the value, barriers and preparation needs in applying evidence-based practices in their role within the public rehabilitation program. *Journal of Vocational Rehabilitation, 41*(2), 127-136.

Tansey, T. N., Iwanaga, K., Bezyak, J., & Ditchman, N. (2017). Testing an Integrated Self-Determined Work Motivation Model for People with Disabilities: A Path Analysis. *Rehabilitation Psychology*. doi:10.1037/rep0000141

Tengland, P. A. (2008). Empowerment: A conceptual discussion. *Health Care Analysis, 16*, 77-96.

Terborg, J. R., & Miller, H. E. (1978). Motivation, behavior, and performance: A closer examination of goal setting and monetary incentives. *Journal of Applied Psychology, 63*, 29-39.

Test, D. W. (2008). Seamless Transition for All. *Research and Practice for Persons with Severe Disabilities (RPSD), 33*(3), 98-99.

Test, D. W., Fowler, C. H., Richter, S. M., Mazzotti, V., White, J., Walker, A. R., . . . Kortering, L. J. (2009). Evidence-based practices in secondary transition. *Development for Exceptional Individuals, 32*(2), 115-128. doi:10.1177/0885728809336859

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L. J., & Kohler, P. H. (2009). Evidence-based secondary transition predictors for improving post-school outcomes for students with disabilities. *Career Development for Exceptional Individuals, 32*, 160-181.

Thibault Landry, A., Kindlein, J., Trépanier, S.-G., Forest, J., Zigarmi, D., Houson, D., & Brodbeck, F. C. (2016). Why individuals want money is what matters: Using self-determination theory to explain the differential relationship between motives for making money and employee psychological health. *Motivation and Emotion, 40*(2), 226-242. doi:10.1007/s11031-015-9532-8

Thomas, K. R. (1993). Consumerism vs. Clientism: A Reply to Nosek. *Journal of Rehabilitation, Special Feature*, 11-12.

Thomas, K. R., Thoreson, R., Parker, R., & Butler, A. (1998). Theoretical foundations of the counseling function. In R. M. Parker & E. Szymanski (Eds.), *Rehabilitation counseling: Basics and beyond* (pp. 225-268): Pro-Ed.

Thoreson, R. W., Smits, S. J., Butler, A. J., & Wright, G. N. (1968). Counseling problems associated with client characteristics. *Wisconsin Studies in Vocational Rehabilitation Monograph, 3*, 46.

Tondora, J., Miller, R., Slade, M., & Davidson, L. (2014). *Partnering for recovery in mental health: A practical guide to person-centered planning*: John Wiley & Sons.

Tongsiri, S., & Riewpaiboon, W. (2013). Using the ICF to develop the capability-oriented database of persons with disabilities: a case study in Nakornpanom province, Thailand. *Disability & Rehabilitation, 35*(13), 1078-1086. doi:10.3109/09638288.2012.720351

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment, 1*(3), 207-210. doi:10.1037/1040-3590.1.3.207

Travers, J., Tincani, M., Whitby, P. S., & Boutot, E. A. (2014). Alignment of Sexuality Education with Self Determination for People with Significant Disabilities: A Review of Research and Future Directions. *Education and Training in Autism and Developmental Disabilities, 49*(2), 232-247.

Tucker, K. L., Ozer, D. J., Lyubomirsky, S., & Boehm, J. K. (2006). Testing for Measurement Invariance in the Satisfaction with Life Scale: A Comparison of Russians and North Americans. *Social Indicators Research, 78*(2), 341-360. doi:10.1007/s11205-005-1037-5

U.S. Department of Education National Center for Education Statistics. (2010). National postsecondary student aid study. *Washington, DC*.

U.S. Department of Health and Human Services. (1999). Mental Health: A Report of the Surgeon General-Children and Mental Health. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

U.S. Department of Labor. (2012). Persons with a disability: Labor force characteristics. *Washington, DC*.

Urbanoski, K., & Wild, T. (2012). Assessing self-determined motivation for addiction treatment: Validity of the treatment entry questionnaire. *Journal of Substance Abuse, 43*, 70-79.

US Government Accountability Office. (2005). *Vocational Rehabilitation: Better Measures and Monitoring Could Improve the Performance of the VR Program*. (GAO-05-865). Publicly Released: Sep 23, 2005: Government Accountability Office Retrieved from http://www.gao.gov/products/GAO-05-865.

Ustun, T. B., Chatterji, S., Kostanjsek, N., Rehm, J., Kennedy, C., Epping-Jordan, J., . . . Project, W. N. J. (2010). Developing the World Health Organization Disability Assessment Schedule 2.0. *Bulletin of the World Health Organization, 88*(11), 815-823. doi:10.2471/BLT.09.067231

Valle, R. D., Leahy, M. J., Sherman, S., Anderson, C. A., Tansey, T., & Schoen, B. (2014). Promising best practices that lead to employment in vocational rehabilitation: Findings from a four-state multiple case study. *Journal of Vocational Rehabilitation, 41*, 99-113. doi:10.3233/JVR-140708

Vallerand, R. J., & Reid, G. (1984). On the causal effects of perceived competence on intrinsic motivation: A test of cognitive evaluation theory. *Journal of Sport Psychology., 6,* 94-102.

van Hal, L. B., Meershoek, A., Nijhuis, F., & Horstman, K. (2012). The 'empowered client' in vocational rehabilitation: the excluding impact of inclusive strategies. *Health Care Anal, 20*(3), 213-230. doi:10.1007/s10728-011-0182-z

Van Reusen, A. K., & Bos, C. S. (1994). Facilitating student participation in individualized education programs through motivation strategy instruction. *Exceptional Children, 60,* 466–475.

Vander Stoep, A., Beresford, S., Weiss, N., McKnight, B., Cauce, M., & Cohen, P. (2000). Community- based Study of the Transition to Adulthood for Adolescents with Psychiatric Disorders. *American Journal of Epidemiology*, *152*(4), 352-362.

Vash, C. L. (1991). More Thoughts on Empowerment. *Journal of Rehabilitation, 57*(13), 13-16.

Vatland, C., Strickland-Cohen, K., Loman, S., Doren, B., Horner, R., & Walker, H. (2011). *Promoting Self-Determination for Adults: A Practice Guide*. A National Gateway to Self-Determination Project Retrieved from www.aucd.org/ngsd.

Verville, R. E. (1979). The disabled, rehabilitation, and current public policy. *Journal of Rehabilitation, 45*(2), 48-51.

Wagner, C. C., & McMahon, B. T. (2004). Motivational Interviewing and Rehabilitation Counseling Practice. *Rehabilitation Counseling Bulletin*, *47*(3), 152-161.

Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). *After high school: A first look at the postschool experiences of youth with disabilities. A report from the National Longitudinal Transition Study-2 (NLTS2)*. Office of Special Education Programs.

Wagner, M., Newman, L., Cameto, R., Levine, P., & Marder, C. (2007). Perceptions and Expectations of Youth with Disabilities *a Special Topic Report of Findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

Webster, C. (1988). The importance consumers place on profes-sional services. *Journal of Services Marketing, 2*, 59-70.

Wehman, P., Chan, F., Ditchman, N., & Kang, H.-J. (2014). Effect of Supported Employment on Vocational Rehabilitation Outcomes of Transition-Age Youth with Intellectual and Developmental Disabilities: A Case Control Study. *52*, 296-310. doi:10.1352/1934-9556-52.4.296

Wehman, P., Kregel, J., Keyser-Marcus, L., Sherron-Targett, P., Campbell, L., West, M., & Cifu, D. X. (2003). Supported employment for persons with traumatic brain injury: A preliminary investigation of long-term follow-up costs and program efficiency. *Archives of Physical Medicine and Rehabilitation, 84*, 192-196.

Wehman, P., Lau, S., Molinelli, A., Brooke, V., Thompson, K., Moore, C., & West, M. (2012). Supported employment for young adults with autism spectrum disorder: Preliminary data. *Research and Practice for Persons with Severe Disabilities, 37*(3), 160-169. Retrieved from <Go to ISI>://WOS:000321314800004

Wehman, P., Sima, A. P., Ketchum, J., West, M. D., Chan, F., & Luecking, R. (2015). Predictors of successful transition from school to employment for youth with disabilities. *Journal of Occupational Rehabilitation, 25*(2), 323-334. doi:10.1007/s10926-014-9541-6

Wehmeyer, M. (2002). *Promoting the Self-Determination of Students with Severe Disabilities*.

Wehmeyer, M. L. (1999). A Functional Model of Self-Determination: Describing Development and Implementing Instruction. *Focus on Autism and Other Developmental Disabilities, 14*, 53-61. doi:10.1177/108835769901400107

Wehmeyer, M. L. (2003). Self-determination, vocational rehabilitation, and workplace supports. *Journal of Vocational Rehabilitation, 19*, 67-69.

Wehmeyer, M. L., & Abery, B. H. (2013). Self-determination and choice. *Intellect Developmental Disability, 51*(5), 399-411. doi:10.1352/1934-9556-51.5.399

Wehmeyer, M. L., Field, S., & Thoma, C. A. (2014). Self-Determination and Adolescent Transition Education *Handbook of Adolescent Transition Education for Youth with Disabilities*: Informa, UK Limited.

Wehmeyer, M. L., & Palmer, S. B. (2003). Adult outcomes for students with cognitive disabilities three-years after high school: The impact of self-determination. *Education and Training in Developmental Disabilities, 38*, 131.

Wehmeyer, M. L., Palmer, S. B., Shogren, K., Williams-Diehm, K., & Soukup, J. H. (2013). Establishing a Causal Relationship Between Intervention to Promote Self-Determination and Enhanced Student Self-Determination. *The Journal of Special Education, 46*(4), 195-210. doi:10.1177/0022466910392377

Wehmeyer, M. L., Shogren, K. A., Palmer, S. B., Williams-Diehm, K. L., Little, T. D., & Boulton, A. (2012). The Impact of the Self-Determined Learning Model of Instruction on Student Self-Determination. *Exceptional Children, 78*(2), 135-153.

Wendell, S. (1993). Toward a feminist theory of disability. In A. Minas (Ed.), *Gender basics: Feminist perspectives on women and men* (pp. 52–58). Belmont, CA: Wadsworth Publishing.

Westmaas, J. L., Wild, T. C., & Ferrence, R. (2002). Effects of gender in social control of smoking cessation. *Health Psychology, 21,* 368–376.

Wild, T. C., Cunningham, J. A., & Ryan, R. M. (2006). Social pressure, coercion, and client engagement at treatment entry: a self-determination theory perspective. *Addictive Behaviors, 31*(10), 1858-1872. doi:10.1016/j.addbeh.2006.01.002

Wild, T. C., Newton-Taylor, B., & Alletto, R. (1998). Perceived coercion among clients entering substance abuse treatment:

Structural and psychological determinants. *Addictive Behaviors, 23,* 81-95.

Wilhelm, S., & McCormick, S. (2013). The impact of a written benefits analysis by Utah benefit counseling/WIPA program on vocational rehabilitation outcomes. *Journal of Vocational Rehabilitation, 39*(3), 219-228. doi:10.3233/JVR-130656

Wolters, K. P., O'Day, B., Andersson, Y., Rangel-Diaz, L., & Hawkins, G. (2000). Transition and Post-School Outcomes for Youth with Disabilities: Closing the Gaps to Post-Secondary Education and Employment.

Woodman, A. C., & Hauser-Cram, P. (2013). The role of coping strategies in predicting change in parenting efficacy and depressive symptoms among mothers of adolescents with developmental disabilities. *Journal of Intellectual Disability Research, 57*(6), 513-530. doi:10.1111/j.1365-2788.2012.01555.x

Workforce Innovation and Opportunity Act, Pub. L. No. 113–128, 128 Stat. 1425-1722 (2014 July 22, 2014).

World Health Organization [WHO]. (2001). *International classification of functioning, disability, and health*. Geneva.

Wright, D. R., & Fitzpatrick, K. M. (2006). Violence and minority youth: the effects of risk and asset factors on fighting among African American children and adolescents. *Adolescence, 41*(162), 251-262.

Wright, R., John, L., Alaggia, R., & Sheel, J. (2006). Community-based arts program for youth in low- income communities: A multi-method evaluation. *Child and Adolescent Social Work Journal, 23*(5-6), 635–652. doi:10.1007/s10560-006-0079-0

Yeatts, D. E., Crow, T., & Folts, E. (1992). Service use among low-income minority elderly: Strategies for overcoming barriers. *The Gerontologist, 32*, 24-32. doi:10.1093/geront/43.1.36

Yeo, R., & Moore., K. (2003). Including disabled people in poverty reduction work: "Nothing about us, without us". *World Development, 31*(3), 571-590. doi:10.1016/S0305-750x(02)00218-8

Yun-Tung, W., & Yi-Jiun, L. (2013). Employment Outcome Predictors for People with Disabilities in Taiwan - A Preliminary Study Using ICF Conceptual Frameworks. *Journal of Rehabilitation, 79*(2), 3-14.

Zhan, M. (2006). Assets, parental expectations and involvement, and children's educational performance. *Children and Youth Services Review, 28*(8), 961-975. doi:10.1016/j.childyouth.2005.10.008

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*, 30-41.

Zuckerman, M., Porac, J., Lathin, D., Smith, R., & Deci, E. L. (1978). On the importance of self-determination for intrinsically motivated behaviour. *Personality and Social Psychology Bulletin, 4*, 443-446. doi:doi:10.1177/014616727800400317

ATTACHMENT A

Education and Social/Behavioral Science IRB
6/27/2016

Submission ID number:	2016-0536
Title:	Self-determination as a predictor of engagement in Vocational Rehabilitation for a sample of young adults with disabilities
Principal Investigator:	TIMOTHY N TANSEY
Point-of-contact:	SENECA EDWARD SHARP, TIMOTHY N TANSEY
IRB Staff Reviewer:	KAMIE LECLAIR

A designated ED/SBS IRB member conducted an expedited review of the above-referenced initial application. The study was approved by the IRB member for the period of 12 months with the expiration date of 6/26/2017. The study qualified for expedited review pursuant to 45 CFR 46.110 and, if applicable, 21 CFR 56.110 and 38 CFR 16.110 in that the study presents no more than minimal risk and involves:

Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, or quality assurance methodologies

To access the materials approved by the IRB, including any stamped consent forms, recruitment materials and the approved protocol, if applicable, please log in to your ARROW account and view the documents tab in the submission's workspace.

If you requested a HIPAA waiver of authorization, altered authorization and/or partial authorization, please log in to your ARROW account and view the history tab in the submission's workspace for approval details.

Prior to starting research activities, please review the Investigator Responsibilities guidance (http://go.wisc.edu/m0lovn) which includes a description of IRB requirements for submitting continuing review progress reports, changes of protocol and reportable events.

Please contact the appropriate IRB office with general questions: Health Sciences IRBs at 608-263-2362 or Education and Social/Behavioral Science IRB at 608-263-2320. For questions related to this submission, contact the assigned staff reviewer.

ATTACHMENT B

DEPARTMENT of REHABILITATION
Employment, Independence & Equality

Edmund G. Brown Jr.,
Governor

State of California
Health and Human Services Agency

Office of the Director
721 Capitol Mall
Sacramento, CA 95814
916-324-1313 Voice
916-558-5806 FAX
916-558-5807 TTY

Seneca Sharp
University of Wisconsin-Madison
1000 Bascom Mall
461 Education Building
Madison, WI 53706

April 19, 2016

Dear Mr. Sharp:

We are pleased to support your research: "Self-determination of Transition-Aged Adults with Disabilities in State Vocational Rehabilitation."

The California Department of Rehabilitation provides services to transition-aged consumers. We will help promote your survey by posting recruitment flyers in our regional offices.

Our organization looks forward to this collaboration.

Sincerely,

Joe Xavier
Director

ATTACHMENT C

SAN DIEGO COMMUNITY COLLEGE DISTRICT
3375 Camino del Rio South
San Diego, California 92108-3883
619-388-6500
CITY COLLEGE | MESA COLLEGE | MIRAMAR COLLEGE | CONTINUING EDUCATION
Student Services

May 25, 2016

To Whom It May Concern:

Please accept this letter of support with regard to the study, "Self-Determination of Young Adults with Disabilities in State Vocational Rehabilitation" proposed by the Department of Rehabilitation Psychology and Special Education at the University of Wisconsin- Madison. Our program, WorkAbility III with the San Diego Community College District, anticipates providing opportunities for transition-age youth to participate in this study designed to collect information on self-determination in the vocational rehabilitation process.

Sincerely,

Jamila DeCarli
Coordinator, WorkAbility III
San Diego Community College District
619-388-6984 / jdecarli@sdccd.edu

ATTACHMENT D

TEXAS
Department of Assistive and Rehabilitative Services

Veronda L. Durden
Commissioner

April 20, 2016

Dr. Timothy Tansey
University of Texas at El Paso
500 West Avenue
El Paso, TX 79902

Dear Dr. Tansey:

The Texas Department of Assistive and Rehabilitative Services (DARS) is pleased to support the research project titled "Self-determination of transition-aged adults with disabilities in state vocational rehabilitation." DARS understands the purpose of this research project is to seek a better understanding of how Vocational Rehabilitation (VR) services support transition-aged young adults with disabilities and help them achieve their educational and employment goals.

The mission of DARS is to work in partnership with Texans with disabilities and families with children who have developmental delays to improve the quality of their lives and to enable their full participation in society. DARS is committed to being a good partner to our consumers and to building alliances that strengthen community partnerships designed to provide resources to persons with disabilities.

It is our understanding that the researchers of this study will invite transition-aged young adults with disabilities to participate in an online survey in order to understand their levels of engagement in state-federal VR services. DARS supports the goals of this study and will help eligible consumers become aware of the opportunity to voluntarily contribute to this important research initiative via the survey.

We wish you success with your research and look forward to working with you on this important initiative. Should you have questions or require further assistance, please contact me by telephone at (806) 783-2966 or by email at keith.gibbs@dars.state.tx.us.

Sincerely,

Keith Gibbs
Regional Director

c: Cheryl Fuller, Assistant Commissioner

ATTACHMENT E

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Vocational Rehabilitation Transition Survey

Interested in helping a study to better understand how Vocational Rehabilitation can *empower* young adults?

We are seeking consumers of Vocational Rehabilitation who are between the ages 18-24 years old. If you are in this age group, you can participate in the research study by going to the following link:

http://bit.ly/VRtransition

The online survey will take you approximately 45 minutes. While taking the survey you can take breaks, as long as the web browser is open.

After completing the survey, the first 133 respondents will receive a **$15 gift card** for their time and effort.

We greatly appreciate your support of this research. If you have any questions or concerns please do not hesitate to contact the Principal Investigator, Dr. Timothy Tansey at tntansey@wisc.edu, or student researcher Seneca Sharp at sesharp@wisc.edu.

Department of Rehabilitation Psychology and Special Education (RPSE)
University of Wisconsin-Madison 000 Langdon Street Madison, Wisconsin 53706
608/000-0000 Fax: 608/000-0000 E-mail: jdoe@server.wisc.edu www.dept.wisc.edu

ATTACHMENT F

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

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Department of Rehabilitation Psychology and Special Education (RPSE)
University of Wisconsin-Madison 1000 Bascom Mall Madison, Wisconsin 53706
608/265-8991 E-mail: tntansey@wisc.edu https://rpse.education.wisc.edu

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ATTACHMENT G

Dear [OFFICE NAME]:

I would like to let you know about a research study supported by the Department of Rehabilitation that may be of interest to your **transition-aged adult consumers**. We ask you to consider referring your consumers for possible participation, and to post recruitment flyers in the office.

Participation in the survey will be completing an accessible online survey using Surveymonkey. The first 133 participants will receive a $15 Target gift card as compensation. The survey may take approximately 45 minutes, but participants can take as long as they wish if they leave the Internet browser window open, or come back to it at a later time.

Participants that meet the following criteria may take the survey:

- Consumers of VR services, including any cooperative agencies or programs (e.g. transition partnership programs, college transition programs)
- Aged 18 – 24 years old
    - Consumers 25-35 may also be included, but only after all consumers aged18-24 have the opportunity

If you have questions about the research after you complete the survey, you can contact the Principal Investigator Tim Tansey Ph.D. at (608) 265-8991. You may also email the lead student researcher, Seneca Sharp at sesharp@wisc.edu.

Thank you for your support of this research!

Sincerely,

Timothy Tansey, Ph.D. CRC

Seneca Sharp M.S. CRC

ATTACHMENT H

Research Participant Information and Consent

TITLE OF THE STUDY: Self-determination of young adults with disabilities in state vocational rehabilitation
Principal Investigator: Tim Tansey Ph.D. (phone: (608) 265-8991)
Student Researcher: Seneca Sharp M.S. (email: sesharp@wisc.edu)

DESCRIPTION OF THE RESEARCH
You are invited to participate in a research study seeking to better understand ways in which young adults can be empowered and supported when using Vocational Rehabilitation (VR) services.

The purpose of the research is to evaluate a model of self-determination for transition-aged young adults in VR, and to answer three research questions: (1) Does a self-determination model describe the relationship between self-determination behaviors and outcome expectancies on levels of engagement in VR? (2) What is the relationship between functional disability status and self-determination? (3) What is the relationship between perceived social support (or social networking) and the relatedness construct of self-determination? This study seeks young adults with disabilities. You will be able to do the survey wherever you feel comfortable—it is an online survey.

WHAT WILL MY PARTICIPATION INVOLVE? If you decide to take part in this research you will complete one electronic survey. The surveys will take about 25-40 minutes, and can be completed in multiple sessions if needed.

ARE THERE ANY RISKS TO ME? Some of the questions about thoughts, feelings, and attitudes about disability may make you feel uncomfortable. You do not have to answer any question that you do not want to.
ARE THERE ANY BENEFITS TO ME? We don't expect any direct benefits to you from participation in this study.
HOW WILL MY CONFIDENTIALITY BE PROTECTED? While there will probably be publications as a result of this study, your name will not be used. Only group characteristics will be published.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS? You may ask any questions about the research at any time. If you have questions about the research after you leave today you should contact the Principal Investigator Tim Tansey Ph.D. at (608) 265-8991. You may also email the lead student researcher, Seneca Sharp at sesharp@wisc.edu. If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on any services or treatment you are currently receiving.

ATTACHMENT H

By clicking AGREE below, you are indicating that you have read this form, had an opportunity to ask any questions about your participation in this research, and that you choose to voluntarily participate.

- ◯ AGREE
- ◯ DISAGREE

Background Information

What is your gender?

- ◯
- Female ◯
- Male

How old are you?

Which of the following services do you receive from vocational rehabilitation? (check all that apply)

- ☐ Job seeking or skills training
- ☐ Job Placement services (i.e. help getting the job)
- ☐ Vocational training (e.g. job skills, vocational school)
- ☐ College or University training
- ☐ Career Counseling
- ☐ Benefits counseling
- ☐ Assistive Technology
- ☐ None of the above

ATTACHMENT H

Which of the following *best* describes your current educational status?

- ◯ Still in high school
- ◯ Left high school prior to receiving degree
- ◯ High school graduate
- ◯ Have GED
- ◯ Attending community college
- ◯ Attending 4-year university
- ◯ Attending specialized college program

Which of the following categories best describes your employment status?

- ◯ Employed, working full-time
- ◯ Employed, working part-time
- ◯ Not employed, looking for work
- ◯ Not employed, NOT looking for work
- ◯ Unpaid internship
- ◯ Doing volunteer work

Which race/ethnicity best describes you? (Please choose only one.)

- ◯ American Indian or Alaskan Native
- ◯ Asian / Pacific Islander
- ◯ Black or African American
- ◯ Hispanic
- ◯ White / Caucasian

ATTACHMENT H

What is your ***primary disability***? (choose one that *best* fits)

- ◯ Alcohol Abuse or Dependence
- ◯ Amputation or Limb loss
- ◯ Anxiety Disorders
- ◯ Arthritis and Rheumatism
- ◯ Asthma and other Allergies
- ◯ AttentionDeficit Hyperactivity Disorder (ADHD)
- ◯ Autism
- ◯ Blood Disorders
- ◯ Cancer
- ◯ Cardiac and other Conditions of the Circulatory System
- ◯ Cerebral Palsy
- ◯ Congenital Condition or Birth Injury
- ◯ Cystic Fibrosis
- ◯ Depression and other Mood Disorders
- ◯ Diabetes Mellitus
- ◯ Digestive
- ◯ Drug Abuse or Dependence (other than alcohol)
- ◯ Eating Disorders (e.g., anorexia, bulimia, or compulsive
- ◯ EndStage Renal Disease and other Genitourinary System Disorders
- ◯ Epilepsy
- ◯ HIV and AIDS
- ◯ Immune Deficiencies excluding HIV/AIDS
- ◯ Mental Illness (not listed elsewhere)
- ◯ Intellectual Disability
- ◯ Multiple Sclerosis
- ◯ Muscular Dystrophy
- ◯ Parkinson's Disease and other Neurological Disorders
- ◯ Personality Disorders
- ◯ Physical Disorders/Conditions (not listed elsewhere)
- ◯ Polio
- ◯ Respiratory Disorders other than Cystic Fibrosis or Asthma
- ◯ Schizophrenia and other Psychotic Disorders
- ◯ Specific Learning Disability
- ◯ Spinal Cord Injury (SCI)
- ◯ Stroke
- ◯ Traumatic Brain Injury (TBI)

ATTACHMENT H

Do you have any secondary disabilities? (please check all that apply) You may skip this question if not applicable.

- [ ] Alcohol Abuse or Dependence
- [ ] Amputation or Limb loss
- [ ] Anxiety Disorders
- [ ] Arthritis and Rheumatism
- [ ] Asthma and other Allergies
- [ ] AttentionDeficit Hyperactivity Disorder (ADHD)
- [ ] Autism
- [ ] Blood Disorders
- [ ] Cancer
- [ ] Cardiac and other Conditions of the Circulatory System
- [ ] Cerebral Palsy
- [ ] Congenital Condition or Birth Injury
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- [ ] Personality Disorders
- [ ] Physical Disorders/Conditions (not listed elsewhere)
- [ ] Polio
- [ ] Respiratory Disorders other than Cystic Fibrosis or Asthma
- [ ] Schizophrenia and other Psychotic Disorders
- [ ] Specific Learning Disability
- [ ] Spinal Cord Injury (SCI)
- [ ] Stroke
- [ ] Traumatic Brain Injury (TBI)

Please describe your current health insurance (choose one)

- ◯ No insurance
- ◯ Medicare
- ◯ Medicaid
- ◯ Public insurance from other source
- ◯ Insurance through your own employer
- ◯ Insurance through family
- ◯ Private insurance purchased by you or other family members
- ◯ I don't know

ATTACHMENT H

Are your parent(s) or guardian(s) currently married?

yes

no

How many people currently live in your household?

Which one best describes your family's household?

- One parent
- Two parents
- One parent and one step-parent
- Guardian of foster care

Does this parent or guardian currently work?

yes

no

What is the employment status of your parent(s) or guardian(s) right now

- One working
- Both are working
- No one in my household works

What type of work does your parent or guardian do? (i.e. job name)

ATTACHMENT H

What is your parent or guardian's *highest level of education*?

- ◌ Less than seventh grade
- ◌ Junior high school (9th grade)
- ◌ Partial high school (10th or 11th grade)
- ◌ High school graduate
- ◌ Partial college (at least one year) or specialized training
- ◌ Standard college or university graduation
- ◌ Graduate professional training (graduate degree)

What type of work do your parents do? (i.e. job name) Please respond for each

First parent

Second parent

What is your ***first*** parent or guardian's highest level of education?

- ◌ Less than seventh grade
- ◌ Junior high school (9th grade)
- ◌ Partial high school (10th or 11th grade)
- ◌ High school graduate
- ◌ Partial college (at least one year) or specialized training
- ◌ Standard college or university graduation
- ◌ Graduate professional training (graduate degree)

ATTACHMENT H

What is your *second* parent or guardian's highest level of education?

- Less than seventh grade
- Junior high school (9th grade)
- Partial high school (10th or 11th grade)
- High school graduate
- Partial college (at least one year) or specialized training
- Standard college or university graduation
- Graduate professional training (graduate degree)

What is your approximate average household income?

- $0-$14,999
- $15,000-$24,999
- $25,000-$34,999
- $35,000-$44,999
- $45,000-$54,999
- $55,000-$74,999
- $75,00-$99,999
- $100,000 or more

Please answer the following questions with "yes" or "no"

	yes	no
Have you ever received a free lunch in elementary, middle or high-school?		
Does your family receive public assistance for food (e.g. "food stamps" or "SNAP")		
Does your family receive cash benefits from social security or other programs (e.g. SSI, child disability benefits or SSDI)		
Have you received special education services in school?		
Have you ever had an Individualized Education Plan (IEP)?		

Self-determination

WORKING ALLIANCE INVENTORY

This brief scale is used to gauge your current relationship with you counselor. The following sentence describes some different ways you may feel or think about counselor. Using the following seven point scale, respond to every item quickly with your first impression.

ATTACHMENT H

	Never	Rarely	Occasionally	Sometimes	Often	Very often	Always
My counselor and I agree about steps to be taken to improve the VR process.	○	○	○	○	○	○	○
The counselor and I both feel confident that our current activity in the VR process is helpful.	○	○	○	○	○	○	○
I believe the counselor likes me.	○	○	○	○	○	○	○
I have doubt about what are trying to accomplish in the rehabilitation plan.	○	○	○	○	○	○	○
I am confident in the counselor's ability to help me.	○	○	○	○	○	○	○
We are working toward mutually agreed upon goals.	○	○	○	○	○	○	○
I appreciate this counselor as a person.	○	○	○	○	○	○	○
We agree on what is important for me to work on.	○	○	○	○	○	○	○
The counselor and I have built mutual trust.	○	○	○	○	○	○	○
The counselor and I have different ideas regarding what is important in the rehabilitation plan.	○	○	○	○	○	○	○
We have established a good understanding between us regarding the kind of changes that would be good for me.	○	○	○	○	○	○	○
I believe that the way we are working in the VR process is correct.	○	○	○	○	○	○	○

VOCATIONAL SELF-EFFICACY

Please rate how certain you are that you can do each of the activities described below. Please rate your degree of confidence by checking a number from 1 to 5 using the scale given below

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I know how to obtain information about jobs that may be of interest to me.	○	○	○	○	○
I know what kinds of jobs I am interested in.	○	○	○	○	○
I know how to prepare for jobs that is of interest to me.	○	○	○	○	○
I know my skills and abilities and how they related to jobs I am interested in.	○	○	○	○	○
I know how to use resources to help me find a job.	○	○	○	○	○

ATTACHMENT H

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I know how to prepare a cover letter and resume.	○	○	○	○	○
I know how to talk about my skills and abilities in a job interview.	○	○	○	○	○
I know how to discuss job performance issues related to my current health and disabling condition.	○	○	○	○	○
I know how to discuss with employers my job accommodation needs.	○	○	○	○	○
I have the physical stamina for a fulltime job.	○	○	○	○	○
I know how to maintain regular work attendance on the job.	○	○	○	○	○
I know how to get along with supervisors.	○	○	○	○	○
I know how to be a team player at work.	○	○	○	○	○
I know how to function independently on the job.	○	○	○	○	○
I know how to maintain appropriate attention and concentration on the job	○	○	○	○	○
I know how to maintain good personal hygiene at work.	○	○	○	○	○
I know how to accept criticism from supervisors.	○	○	○	○	○
I know how to manage my emotions on the job.	○	○	○	○	○
I know when to seek help at work when needed.	○	○	○	○	○
I know how to cope with discouragement from people who are important to me.	○	○	○	○	○
I can continue to look for a job even if I feel discouraged by the job search process.	○	○	○	○	○
I know how to cope with stress associated with looking for a job.	○	○	○	○	○
I can cope with rejection from employers.	○	○	○	○	○
I can determine what is appropriate to wear to work.	○	○	○	○	○

ATTACHMENT H

Internal Motivation Scale

Please rate how certain you are that you can do each of the activities described below. Please rate your degree of confidence by checking a number from 1 to 5 using the scale given below

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I want to work because I get a pleasant satisfied feeling after a hard day at work.	○	○	○	○	○
I want to work because I value the social and financial benefits of work.	○	○	○	○	○
I want to work because it is important to make the effort to go to work.	○	○	○	○	○
I can't see why I should bother to look for a job.	○	○	○	○	○
I want to work because I feel like a failure to not have a job.	○	○	○	○	○
I want to work because my family and friends say I should.	○	○	○	○	○
I want to work because it is fun.	○	○	○	○	○
I want to work because people say I should.	○	○	○	○	○
I don't see the point in finding a job.	○	○	○	○	○
I want to work because I feel guilty sitting at home.	○	○	○	○	○
I want to work because I want to make some changes in my life.	○	○	○	○	○
I choose to receive vocational rehabilitation services because it is an opportunity for change.	○	○	○	○	○
I am responsible for the decision of applying for vocational rehabilitation services	○	○	○	○	○
I agree that I need some help and support from vocational rehabilitation to find a job.	○	○	○	○	○

Personal Factors

ATTACHMENT H

Functional Disability

This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs.

Think back over the past 30 days and answer these questions, thinking about how much difficulty you had doing the following activities.

	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Extreme Difficulty or Cannot do
Standing for long periods such as 30 minutes?	○	○	○	○	○
Taking care of your household responsibilities?	○	○	○	○	○
Learning a new task, for example, learning how to get to a new place?	○	○	○	○	○
How much of a problem did you have in joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	○	○	○	○	○
How much have you been emotionally affected by your health problems?	○	○	○	○	○
Concentrating on doing something for ten minutes?	○	○	○	○	○
Walking a long distance such as a kilometer [or equivalent]?	○	○	○	○	○
Washing your whole body?	○	○	○	○	○
Getting dressed?	○	○	○	○	○
Dealing with people you do not know?	○	○	○	○	○
Maintaining a friendship?	○	○	○	○	○
Your day-to-day work/school?	○	○	○	○	○

Overall, in the past 30 days, how many days were these difficulties present?

In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?

In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?

ATTACHMENT H

Self-Evaluation

Below are several statements about you with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by checking the appropriate circle from "Strongly Disagree" to "Strongly Agree"

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am confident I get the success I deserve in life.	○	○	○	○	○
Sometimes I feel depressed.	○	○	○	○	○
When I try, I generally succeed.	○	○	○	○	○
Sometimes when I fail I feel worthless.	○	○	○	○	○
I complete tasks successfully.	○	○	○	○	○
Sometimes, I do not feel in control of my work.	○	○	○	○	○
Overall, I am satisfied with myself.	○	○	○	○	○
I am filled with doubts about my competence.	○	○	○	○	○
I determine what will happen in my life.	○	○	○	○	○
I do not feel in control of my success in my career.	○	○	○	○	○
I am capable of coping with most of my problems.	○	○	○	○	○
There are times when things look pretty bleak and hopeless to me.	○	○	○	○	○

Mental Health

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	Nearly everyday
Feeling nervous, anxious, or on edge	○	○	○	○
Not being able to stop or control worrying	○	○	○	○
Feeling down, depressed, or hopeless	○	○	○	○
Little interest or pleasure in doing things	○	○	○	○

Environmental variables

ATTACHMENT H

Social Support

Read each statement carefully. Indicate how you feel about each statement.

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am in need.	○	○	○	○	○	○	○
There is a special person with whom I can share my joys and sorrows.	○	○	○	○	○	○	○
My family really tries to help me.	○	○	○	○	○	○	○
I get the emotional help and support I need from my family.	○	○	○	○	○	○	○
I have a special person who is a real source of comfort to me.	○	○	○	○	○	○	○
My friends really try to help me.	○	○	○	○	○	○	○
I can count on my friends when things go wrong.	○	○	○	○	○	○	○
I can talk about my problems with my family.	○	○	○	○	○	○	○
I have friends with whom I can share my joys and sorrows.	○	○	○	○	○	○	○
There is a special person in my life who cares about my feelings.	○	○	○	○	○	○	○
My family is willing to help me make decisions.	○	○	○	○	○	○	○
I can talk about my problems with my friends.	○	○	○	○	○	○	○

FAMILY: Considering the people to whom you are related by birth, marriage, adoption, etc…

	none	one	two	three or four	five through eight	nine or more
How many relatives do you see or hear from at least once a month?	○	○	○	○	○	○
How many relatives do you feel at ease with that you can talk about private matters?	○	○	○	○	○	○
How many relatives do you feel close to such that you could call on them for help?	○	○	○	○	○	○

ATTACHMENT H

FRIENDSHIPS: Considering all of your friends including those who live in your neighborhood

	none	one	two	three or four	five through eight	nine or more
How many of your friends do you see or hear from at least once a month?	○	○	○	○	○	○
How many friends do you feel at ease with that you can talk about private matters?	○	○	○	○	○	○
How many friends do you feel close to such that you could call on them for help?	○	○	○	○	○	○

Outcome Measures

Engagement in Vocational Rehabilitation

Read each statement carefully. Indicate how you feel about each statement.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I strive to complete to complete assignments and rehabilitation activities agreed upon with my rehabilitation counselor.	○	○	○	○	○
I communicate with my rehabilitation counselor regularly.	○	○	○	○	○
I show up for appointments related to my rehabilitation program.	○	○	○	○	○
I understand and accept the need for vocational rehabilitation services	○	○	○	○	○
I recognize the benefits of participating in vocational rehabilitation activities.	○	○	○	○	○
I am determined to complete all the services identified in my individualized plan for employment.	○	○	○	○	○
I get along with my rehabilitation counselor.	○	○	○	○	○
I am actively involved in planning of my rehabilitation program with my counselor.	○	○	○	○	○
I am open to suggestions and feedback.	○	○	○	○	○

ATTACHMENT H

Satisfaction with Life

Below are five statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
In most ways my life is close to my ideal	○	○	○	○	○	○	○
The conditions of my life are excellent	○	○	○	○	○	○	○
I am satisfied with life	○	○	○	○	○	○	○
So far I have gotten the important things I want in life	○	○	○	○	○	○	○
If I could live my life over, I would change almost nothing	○	○	○	○	○	○	○