THE THREAT OF ABLEIST ATTITUDES ON THE PERFORMANCE AND WELL-BEING OF INDIVIDUALS WITH DISABILITIES
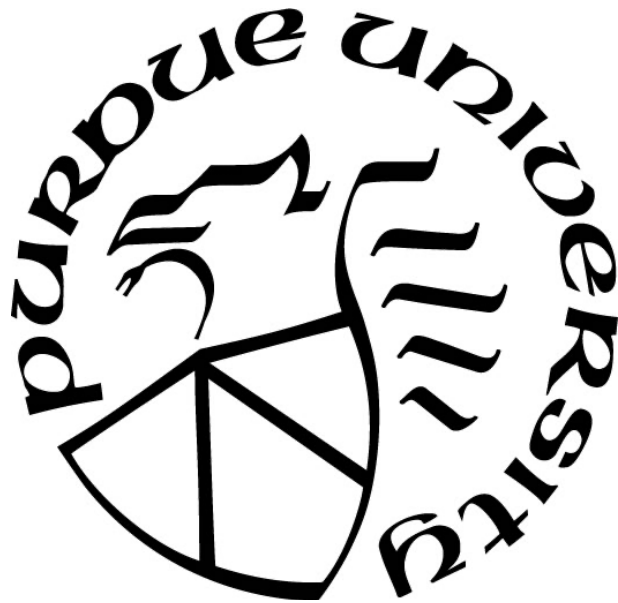
by

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Dedicated to Mary

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ABSTRACT

The dissertation includes two independent chapters which investigated the experiences of individuals with disabilities in connection with societal attitudes regarding disability. The first article is a systematized review which analyzes and synthesizes the existing literature on implicit and explicit disability attitudes across multiple domains (e.g., educational; occupational; healthcare). Chapter 1 identifies common themes across the existing literature and identifies potential predictors and buffers of negative disability attitudes. The article concludes with a call to counseling psychologists to address negative disability attitudes utilizing the roles and themes of the field. Finally, suggestions are made regarding the development and implementation of interventions to help address negative disability attitudes and the subsequent harmful effects.

The second article is an empirical study that examines factors related to the persistence intentions of individuals with disabilities to address the high attrition rates of this population within postsecondary environments. A moderated mediation model is proposed to address four hypotheses. First, I hypothesized academic self-efficacy would mediate the relationship between stereotype threat and persistence intentions. Second, coping self-efficacy would mediate the relationship between stereotype threat and persistence intentions. Third, social self-efficacy would mediate the relationship between stereotype threat and persistence intentions. Fourth, I hypothesized that endorsing a growth mindset would buffer against the negative indirect relationship between stereotype threat and persistence intentions which operate through academic self-efficacy. Data were collected from postsecondary students who identified as having one or multiple diagnosed disabilities at a large public university in the Midwest. The study results supported my first hypothesis that academic self-efficacy would significantly mediate the relationship between stereotype threat and persistence intentions. Additionally, the

results revealed that high levels of perceived stereotype threat were associated with lower levels of coping self-efficacy and social self-efficacy, as the researcher anticipated. However, our second and third hypotheses were rejected due to these mediating factors not significantly influencing a participants' intentions to persist within the academic environment. Finally, the results suggested that one's mindset of intelligence was a positive main effect predictor of academic self-efficacy. However, contrary to our fourth hypothesis, mindset of intelligence did not significantly moderate the negative indirect relation between stereotype threat and persistence intentions that operate through academic self-efficacy.

INTRODUCTION

Individuals with disabilities are currently the largest minority group, yet one of the most under researched population, making up only one to two percent of published counseling psychology literature (Foley-Nicpon & Lee, 2012). This population currently experiences higher rates of unemployment, poverty, poorer health outcomes, mistreatment in healthcare facilities, and more frequent experiences of assault and crime when compared to individuals without disabilities (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015; Hughes et al., 2012; Reeve, 2006; World Health Organization, 2018). The lack of empirical research, coupled with health, academic, and employment disparities, indicates a prevalence of ableist attitudes within society and academia. To address issues of inequity, it is important to first understand the disability attitudes that individuals hold across multiple societal domains (e.g., academia; labor market; healthcare) and how these attitudes contribute to these growing disparities.

The dissertation begins with a systematized review of the existing literature which investigated the explicit and implicit attitudes that individuals have towards individuals with disabilities. Currently, there are no systematic or systematized reviews of the myriad of empirical studies that have investigated the implicit and explicit attitudes people have towards disability. The synthesis of the existing literature is meant to identify specific populations and domains that would benefit from interventions to help reduce prejudicial attitudes and behaviors towards individuals with disabilities.

The second chapter investigated the unique experiences that individuals with disabilities face within postsecondary educational environments. Specifically, this chapter investigated the relationship between stereotype threat, self-efficacy beliefs, implicit mindsets, campus climate, and persistence intentions. Rather than relying on homogeneous groupings (e.g., invisible or

visible disabilities) that most disability research relies upon, the current study investigated the experience of identifying as an individual with a disability more broadly. Few studies have examined the shared experiences undergraduate students with various types of disabilities (e.g., mental health; learning; chronic health conditions) have within the academic domain. Previous studies investigating disability-related stigma tend to use a comparative (e.g. invisible versus visible) approach that quantifies the differences between disability type. Currently, there is a limited number of studies that have investigated the unique experiences of individuals with all disability types on college campuses. This empirical study hopes to the fill the current gap in the literature that has ignored the voices of those with a variety of unique disabilities and identities.

Additionally, no studies have investigated how perceived stereotype threat and self-efficacy beliefs might vary across disability type. This study hopes to investigate how these phenomena occur across and within certain disability-types within postsecondary environments. The current study sought to extend the SCCT-CSM theory's scope by examining the relationship between new environmental influences (i.e., stereotype threat), self-efficacy beliefs, and persistence amongst undergraduate students who identify as having a disability. The current empirical study provides data that will help postsecondary environments better understand the how stereotype threat is experienced by those who identify as having one or multiple diagnosed disabilities.

Finally, the study presented in chapter 2 investigated how an individual's implicit theory or mindset of intelligence (fixed or growth) can serve as a possible protective factor between the negative effects of stereotype threat on an individual's self-efficacy beliefs and persistence intentions within the postsecondary domain. While some research has investigated how the implicit mindsets of others can perpetuate stereotypic beliefs about certain marginalized groups,

there is limited research investigating the relationship between how an individual's implicit

mindset moderates the experience of being stereotyped. Because this theory has been used to

explain the effects that one's mindset has on performance and psychological well-being for those

that have marginalized racial and gender identities, it was essential to apply this theory to those

who have a diagnosed disability to improve the understanding of their experiences within

postsecondary environments. The lack of research in applying both stereotype threat theory and

the implicit theory framework to the experiences of those with disabilities is representative of the

growing educational inequality gap amongst individuals with disabilities and those without.

CHAPTER 1.   ABLEIST CULTURE REPRESENTED IN IMPLICIT AND EXPLICIT ATTITUDES: A SYSTEMITIZED REVIEW

The Research Problem

Evidence that ableist culture is thriving in the United States includes: shorter life expectancies; high poverty rates; assault and abuse at rates nearly one and half times more likely than nondisabled people; poor mental health outcomes such as higher rates of diagnosed depression; and, high national unemployment and underemployment statistics for persons with disabilities (PWD)[1] (Altman & Bernstein, 2008; Iezzoni, 2011; Rosenbaum, 2011; Krahn et al., 2015; Hughes et al., 2012; Reeve, 2006; World Health Organization, 2018; Bureau of Labor Statistics [BLS], 2019). For example, it is estimated that only 19% of PWDs are employed in the United States (BLS, 2019). This high unemployment rate is a representation of societal attitudes, norms, and values rather than the capabilities and aspirations of PWDs. Ability norms are socially constructed by those who control access to the most resources, and those not meeting these socially constructed ability norms are often considered inferior, less deserving of essential resources, and incapable of performing important life tasks, such as securing employment (Miller et al., 2004). The subsequent outcomes of these attitudes, such as high unemployment rates, artificially engender a social perception that PWDs need to be cared for, supported, and protected (Hahn, 1986).

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[1]The American Psychological Association (APA) recommends the use of person-first language (e.g., persons with disabilities) when referring to individuals with disabilities to reduce bias, stigma, and stereotyping in research, practice, and writing (APA, 2019). However, it is important to note that using identity-first language (e.g., "disabled person") allows an individual to claim and value the disability and acknowledge it as fact (Andrews et al., 2013). I acknowledge that the use of person-first language can inadvertently stigmatize disability through the implication that there is something inherently negative about disability and that an individual should desire to distance from this identity.

In the U.S. and many Western societies, disability is conceptualized and defined from a deficit or impairment model by powerful systems such as the medical, legal, and educational systems (D'Amato et al., 2005). A widely accepted legal definition of disability, captured by the Americans with Disabilities Act (ADA), defines disability as one or more physical or mental impairments caused by either disease or illness that substantially limits one or more major life event (U.S. Department of Justice, 1990). A limitation refers to the impact one's disability has on their ability to perform certain tasks (Stauffer et al., 2012). The terms disability and limitations have been associated, stereotypically assumed, and generalized across all disability types throughout history (Stauffer et al., 2012). For example, Liesner & Mills (2006) found that research participants tended to speak to individuals using wheelchairs in a similar way they speak to children. The authors conclude that these biased behaviors occur due to a commonly held assumption that a person's physical disability also significantly limits their mental capabilities (Liesner & Mills, 2006).

Society's understanding of disability has historically been guided by the medical and legal professions, which fail to consider how "limitations", "ability", and "normality" are socially constructed and dependent upon the environment in which these terms were defined (Chapireau, 2005). The widespread social acceptance of these definitions has shaped a society that normalizes ableist attitudes and the treatment of PWDs as dependent, helpless, and in need of protection from those without disabilities (Hahn, 1986). This stigmatized understanding of disability has been the impetus for ableist ideas that assume certain activities are not, or should not, be possible for those who deviate from the socially agreed upon "normal" (Mpofu & Harley, 2006). The purpose of this systematized review is to uncover the prevalence of ableist attitudes

across society, where these attitudes are most common, what factors correlate with these attitudes, and how the field of counseling psychology can dismantle ableism within the field of psychology and across society.

Ableist attitudes have prevailed and been supported throughout history with the most extreme example being the development of eugenic studies in higher education throughout the 20th century. Evolutionary theory and theories within the field of social psychology theorized how ableist attitudes and rationales for eugenic studies first formed and were allowed to remain unchallenged for centuries. For example, evolutionary theory first argued that people's aversion and avoidance of PWDs is an adaptive response to avoid diseases and dangerous illnesses (Nario-Redmond, 2019). The theory goes on to explain that over time these adaptive responses became overgeneralized and evolved into irrational fears against all PWDs, or any person that appears or behaves in ways outside of the socially accepted "norm" (Nario-Redmond, 2019). Various research studies found evidence to support these evolutionary ideas, such as people avoiding the use of the same kitchen utensils previously used by PWDs (Macguire & Haddad, 1990), avoiding swimming pools that had been used by PWDs, and physically distancing from individuals using wheelchairs (Rumsey et al., 1982). In the field of social psychology, existential theories describe ableist attitudes and behaviors as developing from a universal fear of death (Nario-Redmond, 2019). Existential theories, such as Terror Management Theory, argue that prejudiced attitudes towards PWDs are defensive reactions to the fear and vulnerability that is invoked when people are reminded that they could, and most likely will, develop a disability at some point in their lives (Nario-Redmond, 2019). Ultimately, the concept and presence of disability invokes fear in people because it serves as a reminder of unavoidable death and mortality (Nario-Redmond, 2019).

The high levels of fear and anxiety invoked by being in the presence of PWDs, might explain why ableist ideology became commonplace and why eugenic studies were conceived as an attempt to limit the genetic passing of certain disabilities. Eugenics aimed to investigate "biologically inferior" bodies and to develop methods of avoiding the passing of these biological traits to future generations as a way of enhancing the human species (Dolmage, 2017a). Eugenics operates under two assumptions: that living with a disability is filled with suffering, and, the monetary cost to support PWDs is too high when measured by labor-force outputs (Shakespeare, 1998). Eugenic studies created entire generations of scholars and professionals that perpetuated the view that disability is a societal burden that should be fixed, hidden, and isolated from society; serving as the basis for thriving societal ableist attitudes (Goodley, 2014). Over time, there have been social movements aimed at ending prejudice and promoting equity for marginalized groups, such as PWDs, giving rise to systemic interventions in the form of legal acts and policies.

The Americans with Disabilities Act of 1990 and the Vocational Rehabilitation Act of 1973, are a few examples of policies that were established to thwart societal entities from engaging in biased and discriminatory practices that preserve injustice and inequity for PWDs. The ADA was first established in 1990 as a law prohibiting discrimination in employment because of an individual's disability (Americans with Disability Act [ADA], 1990). Similarly, The Rehabilitation Act of 1973 is a law that protects funding to states for vocational rehabilitation services, counseling, supported employment, and additional resources needed for securing employment, housing, and financial resources for PWDs (U.S. Department of Education, 2015). Additionally, the act mandates that the federal government engages in active hiring processes of PWDs to mitigate the growing employment disparities between those with

disabilities and those without (U.S. Department of Education, 2015). However, considering the recent labor statistics, such acts, laws, and policies have not done enough to promote sustainable employment opportunities and access to financial and social resources for PWDs.

Data collected in 2019 by the National Council on Disability (NCD) shows the employment-to-population percent for people with disabilities was 37.5% compared to 77.8% for those without disabilities (National Council on Disability [NCD], 2019). This represents an employment gap of nearly 40% between those with disabilities and those without (NCD, 2019). Relatedly, 26.9% of PWDs are currently living in poverty compared to 12.2% of those without (NCD, 2019). Research continues to find that PWDs face significant discrimination in the workplace, such as being isolated from other workers, experiencing overt discrimination, and receiving inadequate training (Lindsay, 2011; Snyder et al., 2009). These troubling findings represent how unaddressed ableist attitudes continue to undermine these policies and laws' goals of promoting the equity and well-being of PWDs.

Ableism

Ableism is defined as a preference for a predetermined standard of cognitive and physical abilities, competitive traits, and valuing able-bodied individuals over PWDs (Wolbring, 2007; Dolmage, 2017b). Ableist attitudes perpetuate the narrative that "nondisabled" is the desired "norm," positioning disability as a deviation from the "norm" (Dolmage, 2017b). These attitudes are predicated on beliefs that PWDs are inferior or somehow less than human (Dolmage, 2017b). These ableist beliefs eventually evolve into discriminatory and avoidant behaviors towards PWDs (Miller et al., 2004). Brown and Leigh (2018) describe the function of ableism as a way certain social groups (e.g., able-bodied) maintain and justify their high levels of power, privilege, and capital. Studies have verified that negative implicit and explicit attitudes towards PWDs are

correlated with demographic variables such as being white, male, and aligning with conservative

political affiliations, all of which represent identities that are most privileged in terms of wealth,

employment, and overall health in western societies (Berry & Meyer, 1995; Friedman, 2019b;

Vanpuymbrouk et al., 2020).

Identifying as a member of a minority group that faces persistent exposure to negative

attitudes and discriminatory behaviors can paradoxically lead members to adopt and endorse the

same negative attitudes held against their group (Choi et al., 2017). This phenomenon was first

termed "internalized racism" and described the process of non-white individuals adopting and

legitimatizing white stereotypes about non-white races (Liu et al., 2019). Subsequently, this

internalization process leads individuals with marginalized identities to eventually deidentify

from their own race and culture (Liu et al., 2019). Similarly, PWDs experience "internalized

ableism" which is the process of emulating ableist norms and embracing aspirations to meet

these norms by disavowing, overcoming, or hiding one's disability identity (Campbell, 2009).

The function of internalized ableism is to appease social groups with power and privilege that

control access to resources that could alleviate further psychological distress. Power, privilege,

and the control of resources in many western societies is created and safeguarded within

capitalistic economic systems. Those who operate within this economic system therefore

construct what are considered the desired standards of ability, productivity, and an impairment to

this system (Withers, 2012).

Capitalism

In the late 1800s and early 1900s, immigrants hoping to enter the U.S. were inspected by

medical professionals for disabilities, which were referred to as "defects" (Baynton, 2016).

Immigrants were denied access if these individuals were determined to have a significant

"defect" or were anticipated to become a "cost to the public" (Baynton, 2016). This "cost" refers to an individual being dependent on social welfare programs due to a perceived inability to participate and produce in the labor market. It is argued that these discriminatory immigration practices were one of the earliest ways that the U.S. publicly promoted capitalism as it's highest regarded value (Baynton, 2016).

Capitalist systems are economic and political systems founded upon the protestant work ethic and a structure of private ownership, competition, and meritocracy (Liu, 2005). Features of the protestant work ethic include: scheduling a significant amount of daily hours on work-related tasks, delaying gratification, and valuing individuals that have a type A personalities (e.g., individualistic, competitive, highly organized) (Liu, 2005). Within this culture, disability or illness becomes dependent on one's labor productivity, independence, and economic contributions that are made through participation in the labor-force and an individual's consumer habits (Cohen, 2016). This neoliberal culture harbors an ableist environment that constructs disability in terms of capital and cost rather than about body function (Dolmage, 2017c). A culture that values and rewards individualism therefore devalues those that are unable to meet these standards and classifies them as failures or as having character defects. For example, Rao et al. (2010) found that employers in America and China that endorsed competitive and individualistic values were less likely to hire PWDs applying for employment, while also holding stigmatizing and negative views towards PWDs, such as being responsible for acquiring their disability. This is one example of how neoliberal ideology promotes a belief that PWDs are ultimately a burden on society and pose a threat to the capitalist system (Dolmage, 2017c). This ideology normalizes a culture of blame towards disadvantaged and oppressed individuals rather than those who govern these systems (Friedman, 2019a).

Neoliberal cultures, or societies that operate within a capitalist economy, consider any factor that interferes with an individual's highest-level of productivity, autonomy, or requires additional resources, such as having a disability, as a burden on the system (Stauffer et al., 2012). This is demonstrated through how resources are allocated and what opportunities are granted to certain people within these systems. For example, The Association of Higher Education and Disability estimated that an average budget for a disability resource center in most university settings was around $257,000 dollars, which is significantly less than even one athletic coach's salary at the same university (Dolmage, 2017c). The devaluing of PWDs is not only demonstrated through the allocation of monetary resources but also in the growth of disability management programs, which train business students to minimize the cost that PWDs have on workplaces (Dolmage, 2017c). In addition to being perceived as monetarily costly, employers and hiring managers anticipate that workers with disabilities will have a lower productivity levels, poor attendance rates, and would be difficult to supervise (Blessing & Jamieson, 1999; Stauffer et al., 2014). These perceptions demonstrate that when an individual does not meet the stereotypical profile of an able-bodied employee, they are automatically assumed to be a threat, cost, or burden.

The growing popularity of well-meaning workplace "resilience programs", which are meant to address issues of burnout and worker productivity across the U.S., demonstrate a culture of blame towards those not maximizing their productivity (Foster, 2018). The purpose of these programs is to provide supportive interventions (e.g., increased time off; mindfulness workshops; relaxation rooms) that help employees maintain high-levels of productivity and motivation regardless of work-demands or work-related stressors that are imposed by employers (Foster, 2018). Foster (2018) makes a compelling argument that these programs inadvertently

further stigmatize PWDs by implying that a person's poor health hygiene is the primary reason for failing to meet a high standard of productivity, rather than the poor social conditions of many workplaces. It can be argued that these programs are a manifestation of negative implicit biases that employers and society have towards PWDs, which favors nondisabled individuals and devalues PWDs.

Implicit and Explicit Attitudes

Ableism, or the implicit and explicit attitudes that PWDs are incapable of performing or engaging in certain tasks (Mpofu & Harley, 2006), is mostly covert and unconscious, making it hard for people to recognize the negative attitudes and biases they have towards PWDs (Amodio & Mendoza, 2011; Antonak & Livneh, 2000). Negative implicit biases of PWDs steadily increased from years 2004-2017, while explicit biases simultaneously declined (Harder et al., 2019). Generally, social movements over the past century have made it socially unacceptable to endorse prejudicial attitudes towards PWDs, allowing many individuals to ignore their implicit prejudicial attitudes or the prejudicial behaviors they engage in when interacting with PWDs. Most biased behaviors operate on an automatic, unconscious, or on an implicit level, rather than a deliberate, conscious, or explicit level (Fazio & Olson, 2003; Prestwich et al., 2008). Therefore, failure to recognize the implicit biases and negative attitudes that many in society hold towards PWDs, ignores a potential factor that may be contributing to the poor employment, health, and academic outcomes for PWDs living in neoliberal societies.

Friedman (2019a) used the Project Implicit database (Xu et al., 2014) to analyze the strength of ableist views across the United States. The Project Implicit database (Xu et al., 2014) measured 70 million U.S. participants' implicit prejudice towards race, gender, and disability between 2002 and 2017. Friedman (2019a) found that implicit ableism ranged from moderate to

strong across all 50 states, and an average of moderate ableism was found across all participants. These ableist biases and attitudes manifest as biased behaviors towards PWDs within nearly all contexts of society. For example, research finds that students in healthcare-related fields speak in infantilizing terms and tones when treating PWDs (Eddey et al., 1998). In academic settings, nondisabled instructors give less critical feedback to PWDs during tasks, due to a biased perception that PWDs should be held to a lower academic standard and have lower academic capabilities (Hastorf et al., 1979). In familial settings, family members and siblings of PWDs have been shown to have a stronger implicit bias or preference for nondisabled people (Friedman, 2019b; Friedman, 2017). Finally, rehabilitation counseling students, who explicitly endorse low disability biases and have theoretically chosen to promote the well-being of PWDs, also demonstrated having significant negative implicit attitudes towards PWDs (Pruett & Chan, 2006). The high unemployment rates, postsecondary achievement rates, and health disparities of PWDs may be representing an outcome of these widespread negative attitudes and biased behaviors that PWD encounter within many domains of society. Psychologists are uniquely positioned to address issues such as perception, stereotyping, biases, and attitudes due to the fields long history of researching these phenomena. Additionally, psychologists have opportunities to work directly with PWDs and professionals within healthcare, academic, workplace, and familial settings where these attitudes and behaviors are prevalent.

Relevance to Counseling Psychology

Psychologists are represented in academic, occupational, healthcare, and community settings, presenting a unique opportunity to reduce negative attitudes towards PWDs across multiple domains. Specifically, those within the field of Counseling Psychology (CPSY) are well-equipped to address the inequities PWDs face, as they dedicate themselves to six central

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values which include: (1) a focus on strengths and optimal functioning, (2) a holistic approach which emphasizes adjustment and well-being across the lifespan (3) a commitment to social justice with a focus on person-environment interactions, (4) brief, educative, and preventative intervention; (5) a focus on intact and normal disturbances; and, (6) a commitment to diversity and multiculturalism (Gelso et al., 2014). Incorporating these values in research and practice, such as taking a strengths-based and holistic approach is essential when challenging the stereotypes and biases of PWDs, which tend to be deficit-oriented and reductionist. CPSY can achieve this positive impact using the profession's three roles: (1) Practice; (2) Research; and (3) Education (Gelso & Fretz, 2001). Following a description of the findings of our systematized review, the author provides future directions and practical implications regarding each of these three roles.

Review Purpose

The purpose of the systematized review is to gain an understanding of the implicit and explicit attitudes people without disabilities hold towards PWDs across varying societal contexts (e.g., educational settings; healthcare facilities; workplaces). A review of the existing literature will provide an understanding of the explicit and implicit biases and attitudes individuals hold towards PWDs across multiple domains, and factors that precipitate or mitigate these biases and attitudes. The systematized literature review will highlight and acknowledge specific factors that contribute to ableism and subsequent poor health, educational, and personal outcomes for PWDs. Conducting a systematized review will provide scholars with a thoroughly screened and compiled set of findings from studies that have investigated the implicit biases and attitudes towards PWDs. This process will provide researchers a resource to synthesize past literature

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when conducting future studies and may ultimately influence future directions for studying the experiences of PWDs. To achieve these goals, our study was guided by the following questions:

1. What do we know about people's attitudes towards PWDs?

2. What factors correlate with these attitudes?

3. What factors reduce biases or negative attitudes?

4. What are the studies' conclusions and how are they designed?

The following section includes a detailed description of the methods used to conduct our systematized review. It describes the search methods and screening process we used to determine appropriate articles for our final review. Literature that was included in our final analysis is represented in Table 1.

Method

The primary purpose of conducting a systematized review is to report and synthesize the research findings of studies that have investigated similar phenomenon and to convert these findings into a thematic terms that can be easily reviewed by future researchers (Grant & Booth, 2009). A systematized review is conducted by one author and is therefore less rigorous and comprehensive than a systematic review or meta-analysis, but still incorporates all of the primary elements of a formal systematic review (Grant & Booth, 2009).

The first step of a systemitized review, prior to the literature search and reviewal process, includes the researcher explicilty stating research questions which will serve as a guide for determining the appropriateness of articles to be included in the final reviewal process (Grant & Booth, 2009). During the search and reviewal process it is important that the researchers adhere to strict guidelines in order to allow replicability of search procedures that produced the

synthesized research findings (Grant & Booth, 2009). The strict guidelines used in the current study were adapted from the Cochrane Collaboration Handbook for conducting meta-analyses and systematic reviews (Higgins & Green, 2008). Within this handbook, it is suggested that while researchers conduct their systematic review they follow the *Preferred Reporting Items for Systematic Reivews and Meta-Analyses* (PRISMA) statement which is an evidenced-based 27-item checklist and four-phase flow diagram (see Figure 1*)* (Moher et al., 2009). The PRISMA statement requires that the researcher details their search methods (e.g., inclusion and exclusion criteria; databases explored; keywords searched) in a narrative format and PRISMA flow chart (Moher et al., 2009).

Once literature is screened and determined to be appropriate for study inclusion, a thematic synthesis is conducted while analyzing each of the studies' main findings. A thematic synthesis is a three-step process which includes: (1) coding the findings of each article selected; (2) developing descriptive themes using the codes generated in step one; and, finally, (3) developing analytical themes using the descriptive themes generated in step two (Thomas & Harden, 2008). In the first step, codes are developed by the researcher in the form of concepts and phrases that capture the important findings presented in each article (Williams & Moser, 2019). During this first step, emergent and a priori codes are developed while conceptualizing the study findings (Williams & Moser, 2019). Emergent codes are developed based upon on the frequency of emerging ideas that were presented in each study (Williams & Moser, 2019). Whereas a priori codes are developed using the systematized reviewer's knowledge of established theory. In the second step, codes generated within the first step are grouped together based on similarities to form descriptive themes (Thomas & Harden, 2008). The third step involves the researcher synthesizing each of the descriptive themes into overarching analytical

themes which are meant to answer the researcher's questions and provide new insights and directions for future research (Thomas & Harden, 2008).

The following systematized review adhered to the guidelines and suggestions that are outlined by the PRISMA statement and guidelines for conducing thematic analyses (Moher et al., 2009; Thomas & Harden, 2008). In the following section, I describe the search procedures used in the screening and selection process while reviewing literature that has contributed to answering our research questions.

Databases Searched

First, to diminish biases across the study findings and within the systematized review, I selected databases with a broad scope that included a variety of populations and research fields (Moher et al., 2009). I conducted the review using four electronic databases: PsycINFO, Psycarticles, ERIC, and Google Scholar. ERIC (EBSCO) was selected due to the database housing literature sponsored by the Department of Education, which has played a major role in emphasizing the need for disability studies research to influence public policy and to advocate for the educational rights of PWDs. PsychINFO houses psychology related abstracts, journal articles, book chapters, and dissertations sponsored by the American Psychological Association (APA). This database was included due to our study's constructs being defined and studied as psychological phenomena (i.e., implicit attitudes; explicit attitudes). I chose to include Psycarticles for similar reasons, however, Psycarticles includes more full-text peer reviewed articles published by the American Psychological Association than PsychINFO. Finally, we included Google Scholar to expand the comprehensiveness of the reviewed scholarly literature. Google Scholar includes articles that are published in scholarly journals that are outside of the scope of the previous three databases, such as international journals.

Search Protocol and Results

I began the systemized review by searching within the Psycarticles, ERIC, and PsycINFO databases. The following keywords were used when conducting the search: *disability OR disabilities OR disabled AND "Explicit Bias" OR "Explicit attitudes" OR "Implicit Bias" OR "Implicit Attitudes" OR "Implicit and Explicit Attitudes"*. The initial search was not restricted by publication date nor additional search filters. This returned an unmanageable amount of literature: Psycarticles = 5,175, ERIC = 96,688, and PsychINFO = 186,72. I then limited each database by selecting keyword (KW) fields. This narrowed the results from each database to: Psycarticles = 1,450, ERIC = 4,836, and PsycINFO = 60,358. Since measures of implicit bias testing (e.g., Implicit Association Test) were not thoroughly investigated or well-established in the scientific literature until the late 1990s (Greenwald et al., 1998), the search was narrowed by the date range of 2000 to 2020. This narrowed the results to: Psycarticles = 1,083, ERIC = 3,090, and PsycINFO = 46,850. Next, I filtered my search to only include articles published within academic journals as opposed to dissertations, newspaper articles, or book chapters, which narrowed the results to: Psycarticles = 1,083, ERIC = 1,596, and PsychINFO = 37,133.

Irrelevant literature was then filtered out by selecting only "major subject headings" that were relevant to my research questions. "Major subject headings" are automatically generated terms that represent the primary focus of the articles stored within the library's database. Relevant major headings that were generated by the library software selected by the researcher include: disabled (attitudes towards); attitudes; implicit attitudes; prejudice; stereotyped attitudes; stigma; attitudes towards disabilities and teacher attitudes; and physical disabilities (attitudes toward). When narrowed to these major headings, the results were narrowed to: Psycartciles = 133, ERIC = 115, and PsycINFO = 255. These results were determined to be a manageable number of articles to review and further ascertain appropriateness for inclusion in

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the final article extraction list. Articles were determined to be appropriate if the studies

investigated implicit and explicit biases of nondisabled research participants and if the article

defined terms (e.g., disability; implicit attitudes; explicit attitudes) that matched the review's

operational definition of these terms. Following the reviewal process, the results were narrowed

to: Psycarticles = 12, ERIC = 6, and PsycINFO = 8.

Finally, Google Scholar was included to capture articles that may have been omitted from

the Pycarticles, ERIC, and PsycINFO databases. I used the same keywords when conducting this

search and reviewed the first 250 articles (sorted by "relevance") of the 14,900 results and found

27 relevant articles. However, 13 of the 27 articles were determined to be relevant based on

study purpose. Results from each of the four databases resulted in a total of 37 relevant articles.

Screening Process

Each of the 37 articles were screened first by reviewing abstracts and selecting empirical

research studies that investigated disability-related implicit and explicit attitudes. Following the

abstract review, 13 studies were removed due to a lack of empirical findings. Finally, although

we did not want to narrow our search to specific disabilities (e.g., learning versus physical) or

disability categories (e.g., visible versus invisible), I removed two (2) articles that investigated

participants' explicit attitudes of individuals with specific mental health related disabilities (i.e.,

substance use disorder; major depressive disorder). Within these studies, participants' implicit

and explicit biases were measured specifically in the context of behaviors associated with these

disorders (e.g., "I believe those with substance abuse issues are unreliable at work"). The

researcher determined these measures of bias as being too specific compared to most studies

which investigated the biases towards individuals with disabilities more broadly. The final

screening processes yielded 22 articles that investigated disability-related attitudes across

multiple domains and populations.
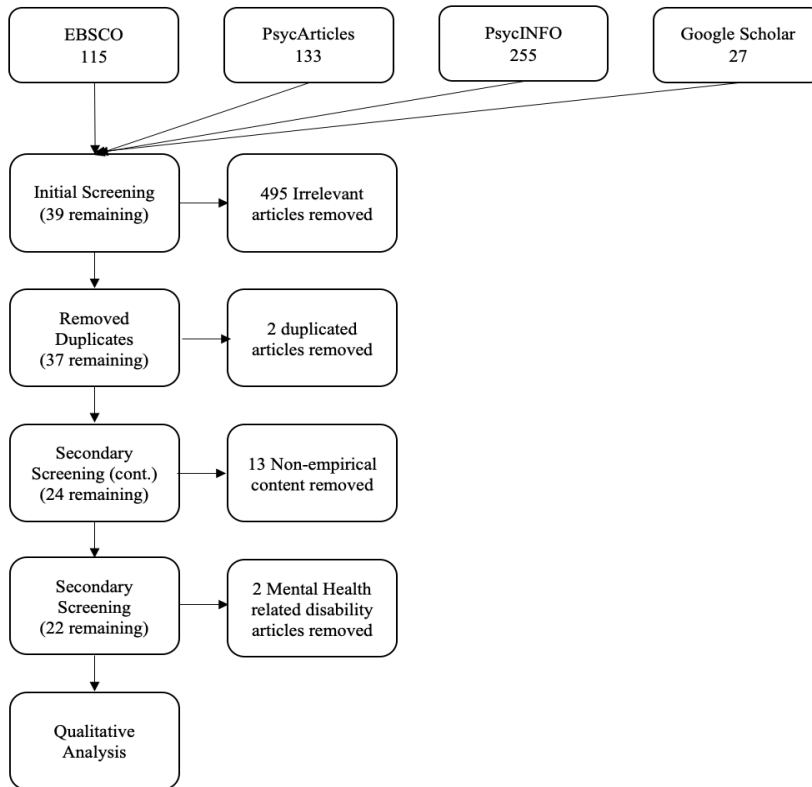
Figure 1. PRISMA Flowchart of Total Articles Included

Summary of Resulting Data

Following our initial screening process, the remaining 22 articles reported empirical

findings of the explicit and implicit attitudes people have towards PWDs, factors that might

contribute to and predict these attitudes, and factors that moderate these attitudes. Importantly,

the admissible literature includes a diverse set of participants including, but not limited, family

members of PWDs, college faculty, undergraduate students, healthcare professionals and

students, and vocational rehabilitation counselors. Additionally, the final set of articles were

published in a diverse range of reputable journals (see Table 1). Such a diverse set of literature

will allow researchers to appropriately generalize study findings and guide future researchers towards further investigation of disability attitudes and behaviors in specific domains.

To understand how researchers measured and designed their studies and to answer my fourth research question, we extracted information from each study's methodological section (see Table 2). Nearly all studies utilized a quantitative approach when investigating the explicit and implicit attitudes towards PWDs, with only one (1) study using an explanatory sequential mixed methods design. The lack of qualitative methods used to study disability attitudes and prejudicial behaviors should be considered while interpreting the results presented in the systematized review as qualitative designs help researchers gain comprehensive insights into the studied psychological phenomena (Creswell & Plano-Clark, 2017). Additionally, four (4) studies conducted a secondary analysis of the existing quantitative data gathered by Project Implicit (Xu et al., 2014). These results should be interpreted with caution as the data collected were not guided by specific research hypotheses or questions generated by the researchers (Cheng & Phillips, 2014). The remaining studies mostly employed survey methods to measure explicit attitudes and implicit association tests to measure implicit attitudes (see Table 2).

Table 1. Final Admissible Literature on Implicit and Explicit Attitudes towards PWDs

Article	Research Design	Journal
Aaberg (2012)	QUANT	Journal of Nursing Educ.
Archambault et al. (2008)	QUANT	Journal of Physician Assistant Educ.
Barnard et al. (2008)	QUANT	Journal of Diversity in Higher Educ.
Becker & Palladino (2009)	MIXED	Journal of Postsecondary Educ. & Disability
Clement-Guillotin et al. (2018)	QUANT	Psychology of sport and exercise
Cox & Hill (2018)	QUANT	Personality and Individual Differences
Friedman (2018)	QUANT	Review of Disability Studies
Friedman (2019)	QUANT	Rehabilitation Psychology
Friedman (2019)	QUANT	Canadian Journal of Disability Studies
Kowalska & Winnicka (2013)	QUANT	Polish Psychological Bulletin
Kurita & Kusumi (2009)	QUANT	Psychologia
Louvet (2007)	QUANT	Rehabilitation Psychology
Ma et al. (2012)	QUANT	Social Behavior and Personality: an International journal
Nosek et al. (2007)	QUANT	European review of social psychology
Popovski et al. (2016)	QUANT	Anthropos
Pruett & Chan (2006)	QUANT	Rehabilitation Psychology
Robey et al. (2006)	QUANT	Journal of Developmental and Physical Disabilities
Rohmer & Louvet (2018)	QUANT	Group Processes & Intergroup Relations
Schimchowitsch & Rohmer (2016)	QUANT	International Journal of Disability
Suthakaran (2011)	QUANT	Journal of Applied Rehabilitation Counseling
VanPuymbrouck et al. (2020)	QUANT	Rehabilitation Psychology
Wilson & Scior (2015)	QUANT	PLoS ONE

Table 2. Study Designs and Methods

Study	Design	Methods
Aaberg (2012)	Quantitative Design	781 nurse educators, completed the Disability Implicit Association Test (IAT)
Archambault et al. (2008)	Quantitative Design	49 Physician Assistant students, completed Disability Implicit Association Test (IAT)
Barnard, Stevens, Siwatu, & Lan (2008)	Quantitative Design	201 university faculty, completed two scales: The Attitudes Towards People with Disabilities (ATPD) and the Miville-Guzman University Diversity Scale (short form)
Becker & Palladino (2009)	Explanatory Sequential Mixed Methods Design	127 university faculty, completed the Faculty Perspectives about Teaching and Working with Students with Disabilities scale, and a post-survey open-ended prompt.
Clement-Guillotin et al. (2018)	Quantitative Design	Study 1: 57 participants, completed a Warmth and Competence IAT assessed for PWD and those without disabilities. Study 2: 61 participants, completed a Warmth and Competence IAT for PWDs who engage in sport and individuals without disabilities who do not engage in sport. Study 3: 63 participants, completed a Warmth and Competence IAT for PWDs who engage in sport and PWDs who do not engage in sport.
Friedman (2017)	Quantitative Design	48 siblings of PWDs completed the Disability IAT and Symbolic Ableism Scale
Friedman (2018)	Quantitative Design	82 graduate and undergraduate students, completed a demographic questionnaire, the Disability IAT and Symbolic Ableism Scale
Friedman (2019a)	Quantitative Design: secondary analysis	1180,701 family members of PWDs, completed a demographic questionnaire, the Disability Implicit Association Test (DA-IAT) and explicit attitude rating scale

Table 2. Continued

	Quantitative Design: secondary analysis	350,000 nondisabled participants, completed a demographic questionnaire, the Disability IAT and explicit attitude rating scale
Friedman (2019b)		
Kowalska & Winnicka (2013)	Quantitative Design	318 university students, completed a demographic questionnaire, a social desirability scale and preferred social distance scale following the introduction of prompts that encouraged the participant to imagine engaging with a PWD in both occupational and social contexts.
Kurita & Kusumi (2009)	Quantitative Design	109 undergraduate students, completed two scales: The Filtering Unconsciousness Matching of Implicit Emotions and the Internal and External Motivation to Respond without Prejudice Scale
Louvet (2007)	Quantitative Design	284 undergraduate management students, participated in two experimental studies: Study 1: 132 participants, evaluated job candidates using an 18-item survey, which assessed personal qualities and competence of applicants applying for jobs that require interpersonal contact and those that do not. Study 2: 152 participants, evaluated job candidates using an 18-item survey designed scale, which assessed personal qualities and competence of applicants in the context of a stereotypical male jobs (security guard) and stereotypical female jobs (secretary) with identical job descriptions and requirements.
Ma, Chen, Zhou, & Zhang (2012)	Quantitative Design	101 undergraduate students, completed the Disability Implicit Association Test and Social Axioms Survey

Table 2. Continued

Cox & Hill (2018)	Quantitative Design	Participants completed the Multidimensional Perfectionism Scale; Self-Oriented Perfectionism scale; Other-Oriented Perfectionism Scale and Socially Prescribed Perfectionism Scale; and the Multidimensional Attitudes Scale Towards Persons with Disabilities (adapted) (Findler et al. 2007; Vilchinsky et al, 2010)
Nosek et al. (2007)	Quantitative Design: secondary analysis	38,544 participants completed a demographic questionnaire and the disability IAT from http://implicit.harvard.edu/
Popovski et al. (2016)	Quantitative Design	191 undergraduate students, completed the Disability IAT; and a questionnaire that gathered info regarding choice of profession and the perceived knowledge of the lives of PWDs
Pruett & Chan (2006)	Quantitative Design	238 rehabilitation counseling students, completed the Disability IAT, Attitude Toward Disabled Persons Scale, Marlowe-Crowne Social Desirability Scale, Collett-Lester Fear of Death Scale, Internal and External Motivation to Respond without Prejudice towards PWDs Scale, Contact with Disabled Persons Scale, and a demographic questionnaire.
Robey, Beckley, Kirschner (2006)	Quantitative Design	30 specialized school and hospital staff members, completed the Infantilizing IAT and an evaluative disability IAT measuring explicit attitudes in various prompted scenarios.

Table 2. Continued

Rohmer & Louvet (2018)	Quantitative Design	Study 1: 84 university students, completed a lexical decision task (word/no word) following disability prime. Study 2: 89 university students, completed an evaluative task (good/bad) of target stimulus following evaluative priming paradigm. Study 3: 165 university students, completed an evaluative task following priming of "work" and "society" contexts.
Schimchowitsch & Rohmer (2016)	Quantitative Design	74 participants, presented with a priming paradigm then completed an evaluative task (positive/negative valanced words) which primed disability
Suthakaran (2011)	Quantitative Design	163 psychology students, completed three scales: Atttitudes Towards Disabled Persons Scale; Rational Experiential Inventory; Marlowe-Crowne Social Desirability Scale
VanPuymbrouck et al., (2020)	Quantitative Design: secondary analysis	25,006 healthcare providers, completed the Disability Implicit Association Test (DA-IAT) and explicit attitude rating scale
Wilson & Scior (2015)	Quantitative Design	326 participants, completed a single target IAT, a measure of explicit attitudes, a measure of desired social distance and emotional reactions following contact with individuals with intellectual disabilities.

Table 3. Citable Findings of Each Study

Study	Description	Findings
Aaberg (2012)	A path to greater inclusivity through understanding implicit attitudes toward disability	Nurse educators had a strong bias towards individuals without disabilities compared to the general population, negative implicit attitudes, and positive explicit attitudes.

Table 3. Continued

Archambault et al. (2008)	Utilizing Implicit Association Testing to Promote Awareness of Biases Regarding Age and Disability	Physician Assistants had a strong to moderate preference for young and able-bodied people and negative implicit attitudes towards older and disabled people.
Barnard et al. (2008)	Diversity Beliefs as a Mediator to Faculty Attitudes Toward Students with Disabilities	University Faculty members may not consider college students with disabilities as a diverse group on campus, demonstrated by the correlation between positive increases in diversity attitudes with negative attitudes towards people with disabilities.
Becker & Palladino (2009)	Assessing Faculty perspectives about teaching and working with students with disabilities	University Faculty with low levels of teaching self-efficacy were less likely to endorse Americans with Disabilities Act-related items and were more likely to consider disability accommodations as unfair.
Clement-Guillotin et al. (2018)	Implicit and explicit stereotype content associated with people with physical disability: Does sport change anything?	Participants perceived people with disabilities as less warm and competent compared to able-bodied. Participants perceived people with disabilities that engage in sport as more competent than people with disabilities that do not, but less competent than able-bodied people that do not engage in sport.
Friedman (2017)	Siblings of People with Disabilities' Explicit and Implicit Disability Attitude Divergence	Siblings implicitly preferred nondisabled people. Political affiliation significantly predicted explicit attitudes, with "very liberal" people having less explicit attitudes and slightly less negative implicit attitudes towards people with disabilities.
Friedman (2018)	Aversive Ableism: Modern Prejudice Towards Disabled People	Graduate and undergraduate students were classified as aversive ableists (positive explicit and negative implicit attitudes) had negative implicit attitudes and preferred nondisabled people, with a majority strongly preferring nondisabled people.

Table 3. Continued

Friedman (2019)	Family Members of People with Disabilities' Explicit and Implicit Disability Attitudes	Participants overall had positive explicit and negative implicit attitudes. Demographic factors that predicted negative implicit attitudes were identifying as: male gender, less religious, highly conservative, nondisabled, and an older age.
Friedman (2019)	Mapping Ableism: A two-dimensional model of explicit and implicit disability attitudes	Most nondisabled people, or 80% of participants, had an implicit preference for nondisabled people, with most participants being prejudiced in an aversive ableist way (positive explicit and negative implicit attitudes).
Kowalska & Winnicka (2013)	Attitudes of undergraduate students towards persons with disabilities; the role of the need for social approval	Participants with higher social desirability reported less social distance towards people with disabilities. However, participant's preferences towards PWDs decreased when they were asked to imagine becoming "a close family member of someone with a disability" and "a subordinate of a PWD". Gender was the only significant demographic variable that predicted attitudes, with gender female being more favorable of PWDs.
Kurita & Kusumi (2009)	Implicit and explicit attitudes toward people with disabilities and effects of the internal and external sources of motivation to moderating prejudice	Participants with high internal motivation to moderate prejudice had lower levels of implicit prejudice and high external motivation had higher levels of implicit prejudice.
Louvet (2007)	Social Judgement Toward Job Applicants with Disabilities: Perception of Personal Qualities and Competencies	Study 1: Participants evaluated individuals with visible disabilities more negatively on openness and independence, and as less desirable for socially related occupations. Study2: Participants evaluated PWDs as less competent when considered for stereotypically "male-oriented" versus "female-oriented" occupations that have identical job descriptions and requirements.

Table 3. Continued

Ma et al. (2012)	Social axioms and implicit attitudes about people with disabilities	The social axiom of "fate control" was negatively correlated with implicit attitudes, while religious belief was not associated with implicit attitudes. Fate control was found to be correlated with negative implicit attitudes towards people with disabilities, possibly due to heightened anxiety levels when events occur outside one's control, such as being born with or developing a disability.
Cox & Hill (2018)	Trait perfectionism and attitudes towards people with disabilities	Participants' endorsement of socially prescribed trait perfectionism positively predicted negative affect, higher levels of interpersonal stress, and greater social distancing and avoidance behaviors towards PWDs.
Nosek et al. (2007)	Pervasiveness and correlates of implicit attitudes and stereotypes.	A secondary analysis of http://implicit.harvard.edu/ found that disability was the strongest effect for implicit and explicit attitudes of all social groups, with 76% of the sample having pro-abled implicit preferences. Implicit disability prejudice of PWDs was strongest among Black and male participants and increased linearly with age. Explicit disability prejudice was significantly correlated with demographic variables of identifying as Asian and male.
Popovski et al. (2016)	The Implicit and Explicit attitudes toward persons with disabilities among students who are educating for different professions	Undergraduate students had moderate negative implicit attitudes and moderate positive explicit attitudes towards PWDs, or aversive ableist attitudes. Participants who are in close contact with PWDs had more positive explicit attitudes. Students training for professions oriented towards improving people's well-being have less negative implicit attitudes and more positive explicit attitudes.

Table 3. Continued

Pruett & Chan (2006)	The development and psychometric validation of the Disability Attitude Implicit Association Test	The DA-IAT, a measure of implicit attitudes, demonstrated no relationship with the Attitude Toward Disabled Persons Scale, an explicit attitude measure. Contact with Disabled Persons Scale was the dominant predictor of DA-IAT scores.
Robey et al. (2006)	Implicit Infantilizing Attitudes about disability	Participants were more likely to associate disability-related words with negative words, and words related to childhood or child-like features.
Rohmer & Louvet (2018)	Implicit stereotyping against people with disability	Participants associated PWDs with less warmth implicitly and more warmth explicitly. Participants associated PWDs with significantly less competence when work contexts were primed.
Schimchowitsch & Rohmer (2016)	Can we reduce our implicit prejudice toward persons with disability? The challenge of meditation	A non-meditator group associated negative valanced words with disability following a disability prime. In the meditator group, disability was less associated with negativity and negative words were almost always inhibited, even after introducing a disability prime.
Suthakaran et al. (2011)	The impact of information processing styles on college students' attitudes of People with disabilities	College students that favored an experiential style of information processing, while controlling for age and social desirability, had significantly more positive attitudes towards PWDs than those that endorsed a rational system. Of the two covariates, social desirability was the only significant predictor. Older students had a more positive attitude towards PWDs.
VanPuymbrouck et al. (2020)	Explicit and Implicit Disability Attitudes of Healthcare Providers	An overwhelming majority of healthcare workers had significant negative implicit attitudes towards PWDs. Age, identifying as conservative, male, and white all significantly correlated with higher levels of negative implicit attitudes. Identifying as having a disability, or having a family or friend correlated with lower implicit prejudice.

Table 3. Continued

Wilson & Scior (2015)	Implicit attitudes towards people with Intellectual Disabilities: Their relationship with explicit attitudes, social distance, emotions and contact	Implicit attitudes were not significantly associated with explicit attitudes, social distance or emotional reactions. Explicit attitudes were associated with social distance. Implicit attitudes did not vary by contact with PWDs, gender, or educational attainment.

Data Analysis

Upon review of each article, titles and summaries of the main findings were logged (see Table 3). The coding process began by developing a-priori codes which represent themes guided by past research and various theories relevant to our current research questions [e.g., Fiske et al.'s (2002) stereotype content model, Son Hing et al.'s (2008) two-dimensional model of racial prejudice]. For example, *aversive ableism* and *paternalism* were coded due to the prevalence of these factors in previous research which investigating the experiences of individuals that identify as being part of a marginalized group. In addition, emergent codes were developed based upon on the frequency of emerging ideas presented in each study. For a theme to be coded, the frequency of occurrence in each study and the intersection of similar themes across all the selected studies was considered. A sample of emergent codes includes: *negative evaluations of job applications and interviews, infantilization, low competence, unfair accommodations, less warmth and competence, bias in favor of younger able-bodied individuals, positive explicit attitudes, negative implicit attitudes towards PWDs, negative implicit attitudes by male participants, negative attitudes towards PWDs in male-oriented jobs, negative implicit attitudes in healthcare, increased interpersonal distress, social distancing behaviors, trait perfectionism, experiential style of information processing, social desirability, external motivation predicts*

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prejudice, internal motivation buffers prejudice, high explicit warmth and low implicit warmth.

The a priori and emergent codes were then organized into descriptive themes based on similarities. For example, findings coded as *positive explicit attitudes, negative implicit attitudes* were organized under the descriptive theme of "Aversive ableism". Additionally, codes such as *social desirability, trait perfectionism, experiential style of information processing, external motivation predicts prejudice* were organized as the descriptive theme: "Personal traits". Ultimately, eight (8) descriptive themes were derived from 51 codes which were then converted into two (2) analytical themes that are presented in the subsequent findings section, which were each organized to address my first three research questions:

1. What do we know about people's attitudes towards PWDs?
2. What factors correlate with these attitudes?
3. What factors reduce negative biases or attitudes?

Findings

Past research found that unexplored, unconscious, or implicit negative attitudes towards minority groups correlated with prejudiced behaviors (Gaertner & Dovidio, 2005). Researchers seeking to address the academic, health, and employment disparities that exist for individuals with disabilities must understand the experiences of PWDs, such as how implicit biases and prejudicial behaviors towards PWDs manifests in these social domains. Therefore, I developed analytical themes, descriptive themes, and codes throughout the literature review process to summarize the findings of studies that have sought to uncover the implicit biases and prejudicial behaviors society engages in towards PWDs, which are represented in Table 4.

Table 4. Coded Findings of Studies Included in Systematic Review

Analytical Themes	Descriptive Themes	Codes
Biases and Attitudes	Aversive Ableism	Positive explicit attitudes
		Negative implicit attitudes
		Bias in favor of younger able-bodied individuals
		Negative implicit attitudes in healthcare settings
		High explicit warmth and low implicit warmth
	Infantilization	Low competence perceptions
		Speaking to PWDs in child-like tones
	Paternalism	High explicit warmth perceptions
		Low competence perceptions
		Less warmth and competence implicitly
	Disability perceived as burdensome	Ignored as positive aspect/trait of diversity/identity
		Accommodations considered unfair by educators
Predictors and Buffers of negative attitudes	Demographics	Male Gender
		Older student participants Younger
		Aversive Ableism by siblings
		Biases in healthcare-related fields
		Conservative political affiliation
		Aversive ableism by graduate and undergraduate peers
		More contact with PWDs
		Work context predicts implicit biases (subordinate work contexts)
		More Religious participants
		Less competence when applying for socially oriented jobs

Table 4. Continued

	Personal Traits	External motivation predicts negative attitudes
		Internal motivation buffers negative attitudes
		Diversity attitudes mediate attitudes towards PWDs
		Experiential-style of Information Processing
		Trait perfectionism
		Social desirability
		Belief of "fate control"
	Behaviors	Negative job application evaluations
		Negative attitudes towards PWDs in male-oriented jobs
		Meditation
		Engaging in sport

Biases and Attitudes

Aversive Ableism

Aversive ableism refers to unconscious prejudice that is activated by well-meaning nondisabled individuals, who otherwise would not explicitly or consciously concede to having biased attitudes or engaging in biased behaviors towards PWDs (Friedman, 2018). The concept derives from aversive racism which refers to the phenomena that occurs when people with egalitarian views who support racial equality, sympathize with injustice, and explicitly deny having prejudicial attitudes towards Black individuals, continue to engage in biased behaviors due to unconscious negative implicit attitudes, such as recommending a black applicant less than a white candidate for a job (Gaertner & Dovidio, 2005).

Each of the studies discussed within this section use Son Hing et al.'s (2008) two-dimensional model of racial prejudice to describe participants' response profiles following the administration of the Implicit Association Test (IAT). The two-dimensional model categorizes responses into four groupings adapted for disability studies research: symbolic ableism, aversive ableism, principled conservative, and low prejudice (Son Hing et al. 2008; Friedman 2017). Symbolic ableism is characterized as having high explicit and implicit prejudice towards PWDs. Those with symbolic ableist attitudes typically endorse individualistic values and beliefs that PWDs need to be excessively cared for and are a burden on society (Friedman & Awsumb, 2019). Aversive ableism is categorized as low explicit and high implicit prejudice towards PWDs (Friedman, 2018). Conversely, principled conservatives are defined as having high explicit prejudice and low implicit bias (Friedman, 2018). Having high explicit bias is hypothesized as being correlated with individuals that have traditional values such as individualism, protestant work ethic, and meritocracy (Son Hing et al., 2008; Friedman, 2018). Low prejudice, which is the final grouping is categorized as those with low explicit and implicit prejudice towards PWDs.

We coded *aversive ableism* as being a prevalent finding within seven (7) of the articles in our systematized review. A study conducted by Friedman (2019c), which analyzed one of the largest databases of IAT responses that were gathered during Project Implicit, found that an astounding 80% of participants ($n = 263,825$) preferred nondisabled people. Furthermore, 48% of the study's participants ($n = 168,421$) response profiles were categorized as aversive ableism (Friedman, 2019c). These statistics demonstrate the prevalence of implicit bias and aversive ableist attitudes that the general population holds towards PWDs. The studies discussed in the subsequent paragraphs identify more specifically what settings these aversive ableist attitudes were most prevalent.

The remaining six (6) studies found that family members (Friedman, 2019c), siblings (Friedman, 2017), healthcare providers (VanPuymbrouk et al., 2020; Aaberg, 2012; Archambault et al., 2008), and academic peers (Friedman, 2018) of PWDs displayed significant aversive ableist attitudes towards PWDs and an implicit preference of nondisabled people (Friedman, 2019c). These findings show that PWDs are at-risk of experiencing biased behaviors in nearly all sectors of society. Exposure, contact, and personal relationships with individuals that are part of a stigmatized group are hypothesized to decrease prejudicial attitudes and beliefs (Allport, 1954; Pettigrew & Tropp, 2005). However, two (2) studies included in our analysis found that family members held negative implicit attitudes towards PWDs at a significant level, indicating that contact and exposure may only mitigate negative explicit attitudes. For example, Friedman (2017) found that 67% ($n = 32$) of the total study population ($N = 48$) of siblings of PWDs were classified as aversive ableists, despite having significantly low levels of negative explicit attitudes. Family members of PWDs, other than just siblings, also showed a significantly high rate of aversive ableist attitudes, with nearly 43% of respondents having low explicit bias and high negative implicit bias towards PWDs (Neely-Barnes et al., 2010). Of the total study population ($N = 180,701$), 77% preferred nondisabled people implicitly ($d = 1.02$), with a "strong preference" for nondisabled people being the most frequent response profile. Neely-Barnes et al. (2010) suggest that the prominence of ableist attitudes within society's laws and structures override the positive explicit attitudes that siblings and family members have and allow negative implicit attitudes to prevail. Neely-Barnes et al. (2010) warns that only attending to positive explicit attitudes and ignoring negative implicit biases that family members hold towards PWDs risks conspiring with ableism in the ways family members care for and advocate for their family

members with PWDs, such as taking excessive care, limiting their autonomy, or encouraging strategies to appear less disabled or conceal their disability identity altogether.

In addition to home and familial settings, settings that were healthcare-related also showed to have a prevalence of aversive ableist attitudes. The prevalence of these attitudes within healthcare settings demonstrates that aversive ableism may be a contributing factor in the poor health outcomes of PWDs. Three studies in the systematized review indicate that aversive ableist attitudes are common amongst those in healthcare, such as healthcare providers (VanPuymbrouck et al., 2010), nursing educators (Aaberg, 2012), hospital staff (Robey et al., 2006), and physician assistant students (Archambault, 2008). Similar to the aversive ableist attitudes found amongst the general population (Friedman, 2019c) and family members of PWDs (Neely-Barnes et al., 2010), Vanpuymbrouck et al. (2010) found a significant mismatch between healthcare providers' explicitly measured prejudice ($M = 4.41$) and their implicit attitudes ($M = 0.54$), with a majority being categorized as having significant aversive ableist attitudes. Similarly, Aaberg (2012) studied nurse educators ($N = 781$) attitudes towards PWDs and found a strong bias towards individuals without disabilities ($D = .76$), which was significantly stronger than the general population ($D = .45$). Aaberg (2012) argues that this may be due to an emphasis on the "hands-on" nature of the nursing profession, curriculum that focuses on health and equates disability with sickness, a significant lack of PWDs in the nursing field, and textbooks that emphasize a certain appearance of nurses which rarely represent individuals with disabilities. Finally, Archambault (2008) found that Physician Assistant students ($N = 49$) had aversive ableist attitudes, with 47% indicating a strong implicit preference for able-bodied individuals and 37% having a moderate implicit preference for able-bodied individuals.

Research consistently shows that PWDs have poorer health outcomes and shorter life expectancies than nondisabled people (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015). Biased behaviors and negative implicit biases are frequently hypothesized as contributing factors to poor health outcomes (Chapman et al., 2013; Hall et al., 2015). For example, Akhayan & Tillgren (2015) found that medical providers engage in avoidance behaviors due to negative implicit biases of PWDs, such as avoiding or engaging in less interaction with PWDs, being less willing to take on patients with disabilities, and having less involvement with patients with disabilities during the clinical decision-making processes. Tucker et al., (2007) suggests that an overemphasis on genetics and the medical model contributes to health disparities of all minority groups, as it diverts the attention away from the previously mentioned social factors, such as ableist attitudes and unemployment, that contribute to one's health and well-being. This suggestion aligns with research findings (Eddey et al., 1998, McColl et al., 2008; Sanchez et al., 2000) that show healthcare providers lack necessary knowledge of disability, treat patients in an infantilizing manner, and rely on a medical model of disability when forming attitudes and understandings of disability. Our findings suggest that hospital staff, physician assistants, nurses, and nurse educators all demonstrated aversive ableist attitudes and are at-risk of engaging in biased behaviors that may perpetuate the health disparities of PWDs.

In addition to the healthcare field, Robey et al. (2006) investigated the attitudes towards PWDs of a specialized school and hospital staff ($N = 30$) in a facility that exclusively provide service for PWDs. The researchers administered an evaluative IAT, infantilization IAT, and an explicit measure of disability attitudes. The Infantilization IAT required participants to sort terms associated with disability and childhood, pair these words into the categories of "*disabled and child*" or "*nondisabled and adult*", and then pair these words again into categories of

"*nondisabled and child*" or "*disabled and adult*" a subsequent round (Robey et al, 2006). The

Evaluative IAT required participants to sort words across the dimensions of disability and non-

disability and good and bad (Robey et al, 2006). The study found that participants responded

significantly faster during "non-disabled" and "good" associated trials (*SD* = 222.7) and

significantly slower during the "disability" and "good" trial (*SD* = 310.9) (Robet et al., 2006).

The data from the evaluative IAT showed that participants had a significant negative implicit

bias of PWDs due to their frequency of pairing positive words with non-disabled and their

difficulty associated positively valanced words with disability (Robey et al., 2006). Conversely,

the study failed to find significant negative explicit attitudes of PWDs (Robet et al., 2006). These

findings taken together indicate that these school and hospital staff members are categorized as

having aversive ableist attitudes. These data are an example of the strength of ableism in our

society, as professionals that have consistent contact with PWDs and do not believe themselves

to be prejudice towards PWDs, do in fact have ableist attitudes when measured implicitly (Robey

et al., 2006). Unconscious implicit attitudes are particularly important for nondisabled

individuals to recognize as they are predictive of negative verbal and nonverbal behaviors (Fazio

& Olson, 2003), which might be contributing to the poor outcomes for PWDs across many

societal domains.

Paternalism (Warmth and Competence)

The model of Stereotype Content (Fiske et al., 2002) hypothesizes that warmth and

competence are the two primary dimensions used to stereotype others during intergroup

functioning. The model assumes that factors such as an individual's competitiveness predicts

warmth perceptions and their assumed status predicts competence perceptions (Fiske et al.,

2002). Within this model, having perceptions of high warmth and low competence of an

individual is classified as having paternalistic attitudes towards them, which correlates with viewing them as a subordinate and having emotions towards them such as pity and sympathy (Fiske et al., 2002). Whereas, perceiving someone as having high competence and low warmth would be classified as viewing them as a competitive elite, generating feelings of envy and jealousy in others (Fiske et al., 2002; Cikara & Fiske, 2013). Using this model, we would hypothesize that studies included in our analysis would provide evidence that individuals tend to hold paternalistic attitudes towards PWDs.

Two studies in our systematized review confirmed this prediction. However, Rohmer and Louvet (2018) found that perceptions of warmth varied significantly depending on whether this attitude was measured implicitly or explicitly. Rohmer and Louvet (2018) conducted three experimental studies with two priming paradigms. Each of the three studies revealed that PWDs were devalued on warmth when measured implicitly but were perceived as having high warmth when attitudes were measured explicitly. Interestingly, negative evaluations of competence were dependent on context (Rohmer & Louvet, 2018). When attitudes of competence were measured in an "imagined work setting," perceptions of PWD's competence were significantly more negative when compared to evaluations measured without context. Relatedly, Louvet (2017) conducted two experimental studies which measured the attitudes towards disability of undergraduate students ($N = 284$) in a business management program. In study one, participants ($n = 132$) evaluated applicants for a socially oriented occupation (e.g., sales) or an occupation with less social contact (e.g., accounting). Applicants were either classified as either having a physical disability or not having a disclosed disability prior to evaluation. The study found that participants projected stereotypical job characteristics of each occupation onto the applicants themselves (Louvet, 2007). For example, applicants were rated as having higher levels of

perceived openness, agreeableness, and independence when applying for social occupations. However, when it came to evaluating fitness for these socially related jobs, participants rated applicants with visible disabilities as less desirable or suitable than the nondisabled applicants (Louvet, 2007). Specifically, participants rated applicants with visible disabilities as having less openness and independence; but their agreeableness ratings remained unchanged. These findings indicate that participants may paternalistic attitudes towards PWDs specifically in social contexts, as participants rated PWDs as having less warmth and competence in these contexts. In study 2, business students (n = 152) evaluated applicants with visible disabilities and applicants without a disability for both a stereotypically male (i.e., security-guard) and female (i.e., secretary) job. Experimenters designed the study so that each job description and requirements were identical regardless of the job title, as was each of the applicants' qualifications and skills. The researchers found that participants rated PWDs as significantly less competent, but more open and conscientious, when being evaluated for the stereotypical-male job (Louvet, 2007), which are assumed to be more competitive and independent-oriented positions. These results confirm the prevalence of paternalistic attitudes that PWDs face when operating within vocational and social domains.

One study in our analysis investigated if PWDs engaging in sports would change participants' implicit and explicit paternalistic attitudes towards PWDs (Clement-Guillotin et al., 201). Previous research demonstrated that people described as engaging in regular exercise were evaluated more favorably when compared to non-exercising people (Martin Ginis & Leary, 2006). These findings were consistent when tested using PWD exercisers and non-exercisers as targets of perception (Kittson et al., 2013). The three studies conducted by Clement-Guillotin et al. (2010) found: PWDs were implicitly associated with less warmth and competence compared

to those without disabilities, regardless of sport-involvement; PWDs that engage in sports were explicitly associated with more warmth than those without disabilities that do not engage in sports, however, PWDs that engage in sport were explicitly associated with less competence than those without disability; and, PWDs that engage in sport were explicitly, but not implicitly, were associated with greater warmth and competence than PWDs that do not engage in sport. This study indicates that an individual's disability status overrides certain behavioral factors that are hypothesized to challenge disability-related stigma and negative implicit attitudes, such as engaging in sport.

The paternalistic attitudes and behaviors of nondisabled participants found within our systematic review shows that these attitudes are not simply just a perception by PWDs but are in fact the overwhelming attitudes held by non-disabled individuals. Past research found that when PWDs confront these overtly patronizing behaviors they are penalized by being avoided and being perceived as threatening, rude, and interpersonally cold (Wang et al., 2019). To remove PWDs from this double-bind, individuals must acknowledge the prevalence of paternalistic attitudes, confirmed in our systematized review, and take steps to correct these biased behaviors and attitudes.

Infantilization

Infantilization is a theme that was found in one study (Robey et al., 2006) of our systematized review. Infantilization is defined as the treatment of individuals in a child-like manner, which is often the biproduct of paternalistic values being normalized within many western cultures. Hahn (1986) argued that paternalism, or perceptions of low competence and high warmth, normalizes having sympathetic attitudes towards minority groups. These sympathetic attitudes therefore encourage those in positions of power to believe they are the

protectors of the dependent minority. Studies (Liesener & Mills, 1999; Gouvier et al., 1994; Eddey et al., 1998) have uncovered infantilization as a common attitude nondisabled individuals have towards PWDs, demonstrated commonly in the verbal behaviors of nondisabled individuals. For example, Eddey et al. (1998) found that medical students unconsciously spoke to adult patient simulators that had a physical disability in the same way they spoke to children in a previous study task. Additionally, the medical students incorrectly assumed that the patient simulators had social and cognitive impairments due to their physical disability (Eddey et al., 1998).

Robey et al. (2006) found that a majority of non-disabled hospital and educational staff, who work directly with PWDs, had implicit infantilizing attitudes towards PWDs, meaning participants unconsciously associated disability-related words with child-like words at a faster rate (Robey et al., 2006). Specifically, participants responded significantly faster during "disability" and "child" associated trials ($SD = 246.7$) and significantly slower during the "non-disability" and "child" trial ($SD = 307.6$) (Robey et al., 2006). Given that this study and many of the previously mentioned studies took place in healthcare facilities, it can be argued that implicit attitudes towards PWDs such as infantilization contributes to the poorer health outcomes of patients with disabilities. For example, within a meta-analysis that investigated implicit biases of healthcare providers, 35 of 42 articles found a positive relationship between provider implicit bias and poorer quality of care (FitzGerald & Hurst, 2017). Feeling empowered and actively in-control of one's healthcare treatment are essential factors in maintaining motivation and behavioral changes that can improve one's quality of care (Barbosa et al., 2021). However, infantilizing attitudes often create an illusion of dependency and deny the infantilized to feel autonomous, empowered, and independent in their healthcare.

Ignorance of Disability as an Aspect of Diversity

An additional common attitude found within our systematized review was disability not being viewed as a positive aspect of one's identity or culture. In a study conducted by Barnard and colleagues (2008), 225 faculty members completed the Attitudes towards persons with disability (ATPD) scale which measured an individual's explicit attitude towards PWDs and the Miville-Guzman Universality Diversity Scale which measured faculty attitudes towards diversity and universality. The findings showed that as a faculty members' positive attitudes towards diversity increased, there was a correlation with the decline in positive attitudes towards PWDs (Barnard et al., 2008). The researchers hypothesize that these results represent a failure by participants to recognize disability as a positive aspect of diversity (Barnard et al., 2008), in the same way race, gender, or religion are considered positive aspects of diversity. Woodhams and Danieli (2000) describe this ignorance as a result of PWDs being perceived as a heterogeneous group with too much variance across individual members. Woodhams and Danieli (2000) argue that this heterogeneous perspective causes nondisabled people to overlook the shared identity and culture amongst those who identify as having a disability, regardless of specific diagnoses or disabilities. Additionally, the popularity of the medical model in many westernized cultures as it applies to PWDs may contribute to individuals having a deficit view of disability, causing individuals to perceive disability as a burden rather than a valued and celebrated aspect of diversity (Barnard et al., 2008). An example of these burdensome attitudes is reflected when academic faculty are asked to consider the appropriateness of the use of accommodations by PWDs.

Accommodations Perceived as Burdensome

Becker and Palladino (2008) assessed the attitudes of 127 faculty from a large midwestern university using the *Faculty Perspectives about Teaching and Working with Students with Disabilities, The Accommodation of University Students with Disabilities Inventory,* and one qualitative item which asked participants to describe their role in providing accommodations to postsecondary students with disabilities. The qualitative data indicated that some faculty are somewhat hesitant to implement accommodations within their classrooms unless specifically documented by the school's Disability Resource Office. The quantitative data demonstrated that only a small portion considered accommodations as unfair, however, there was a significant negative correlation between teacher self-efficacy and attitudes that academic accommodations are unfair. Faculty that had lower teaching self-efficacy were more likely to report accommodations as unfair. Faculty in postsecondary education settings can be conceptualized as the gatekeepers of ADA law, as their attitudes towards PWDs and accommodations dictate whether or a not a student feels comfortable disclosing their disability and need for accommodations to be successful. Therefore, it is important for educational institutions to provide trainings and workshops on strategies and the importance of providing accommodations, especially for newer educators with lower levels of self-efficacy.

Predictors and Buffers

Demographic Variables

Nine studies analyzed demographic (i.e., age, gender, race, religion, political affiliation, social and family history) correlates with implicit and explicit attitudes towards PWDs. Most studies found a positive relationship between age and negative implicit attitudes towards PWDs.

Researchers hypothesize that negative implicit attitudes towards PWDs increase with age due to older generations living most of their lives in a society without laws and policies such as the ADA that advocate for equality and equity for PWDs (Friedman, 2019). Nosek et al. (2007) conducted a secondary analysis of the Project Implicit Database (Xu et al., 2014) and found a linear relationship between age and negative implicit attitudes towards PWDs. Additionally, VanPuymbrouck et al. (2020) found evidence that healthcare providers' negative explicit and implicit attitudes towards PWDs correlated with age, with older providers demonstrating significantly more negative implicit and explicit attitudes. The authors similarly hypothesize that younger providers developed more positive attitudes towards PWDs due to growing up during societal shifts where ADA laws and policies were already established (VanPuymbrouck et al., 2020). Additionally, two studies specifically investigated the attitudes of family members who either had a sibling or family member with a PWD and found that negative implicit attitudes towards PWDs increased with age (Friedman, 2019c; Friedman, 2017). Prior researchers have hypothesized that this may be due to a perceived difficulty in increasing caretaking responsibilities of PWDs in older family members (Heller & Kramer, 2009). Conversely, Suthakaran (2011) and Archambault et al., (2008) found that when measuring the implicit attitudes of college students, students of an older age had more positive implicit attitudes towards PWDs. Due to their being no generational gaps amongst these undergraduate participants, the correlation between attitudes towards PWDs and age may reflect an increase in knowledge of disability-related issues and social issues such as prejudice, bias, and stereotyping that typically occur during the progression of one's undergraduate education.

In terms of gender, three studies found that males commonly had more negative explicit attitudes towards PWDs than women. Prior studies found that women tend to have less negative

attitudes towards disabilities than males (Berry & Meyer, 1995). However, prior to the popularity of IAT studies, frequently used measures such as the *Attitudes Towards Persons with Disabilities* only captured explicit attitudes which are at a greater risk of socially desirable response bias. When measured implicitly, two studies in the systematized review found no gender difference when it came to implicit attitudes, with all genders having negative implicit biases towards PWDs (Pruett & Chen, 2006; Wilson & Scior, 2015). However, four studies found that male gender participants had significantly more negative implicit and explicit attitudes towards PWDs compared to participants that identified with the female gender (Nosek et al., 2007; Friedman, 2019c; VanPuymbrouck et al., 2020; Kowalska & Winnicka, 2013).

Three studies found a significant correlation between one's political orientation and their implicit attitudes towards PWDs. Friedman (2019c) and VanPuymbrouck et al. (2020) found that having a highly conservative political orientation was significantly correlated with negative implicit attitudes towards PWDs. Similarly, Friedman (2017) found that participants with highly liberal political orientations had significantly less explicit prejudice towards PWDs and more positive implicit attitudes, although not significant. These findings support the notion that disability attitudes and disability itself are influenced significantly by societal systems such as capitalism. Those who identify as highly conservative typically align with individualistic values, competitiveness, and a protestant work ethic which are the underpinning values of the capitalistic system (Liu, 2005). It is not surprising then that those who support these values would view a disability in negative terms, as a disability would be considered a burden or deficit that might conflict with these values.

Contact

Intergroup contact has been hypothesized as a significant factor in predicting an individual's implicit and explicit prejudice and is suggested as an important intervention in reducing prejudice (Allport, 1954). However, studies within our systematized review yielded mixed results in terms of the significance that contact with PWDs has on implicit and explicit bias. Pruett and Chan (2006) found that of all demographic factors (i.e., age, gender, SES, ethnicity) and psychosocial factors (i.e., contact, fear of death, external and internal motivation to respond without prejudice), contact was the only demographic or psychosocial factor that significantly predicted participants' ($N = 223$) implicit biases as measured on the *Disability Attitude Implicit Association Test* (DA-IAT). VanPumbrouck et al. (2020) also found that contact (i.e., friends, family, relationship with someone with a disability, being a person with a disability) correlated with negative implicit biases and with positive explicit biases. However, contact had a much stronger correlation with explicit attitudes than implicit attitudes (VanPumbrouck et al., 2020), suggesting that interacting with PWDs may only impact one's bias on a conscious level. Wilson and Scior (2015) found that participants' implicit attitudes did not vary in regard to contact or frequency of contact with PWDs, but did vary in regard to explicit attitudes. Implicit attitudes did however become less negative as the frequency of contact increased across participants (Wilson & Scior, 2015). For example, there was a difference between participants that indicated daily contact versus those with no contact ($\chi^2 = 72.22$, $p = .002$). Similarly, Popovski et al. (2016) found that contact only predicted a participant's explicit attitudes, while having little to no effect on implicit prejudice. These results suggest that intergroup contact may do little to address implicit prejudice towards PWDs but may significantly reduce negative explicit attitudes.

Three studies within our systematized review demonstrated that contact has little effect on both explicit and implicit prejudice. Robey and colleagues (2006) investigated the prejudice of participants ($N = 30$) that provide direct service to PWDs and found that regardless of their high levels of contact, participants had moderate negative implicit attitudes and infantilizing attitudes towards PWDs. Kurita and Kusumi (2009) investigated participants ($N = 109$) implicit attitudes, of which 70% ($n = 77$) indicated having regular contact and relationships with PWDs, using the *Filtering Unconsciousness Matching of Implicit Emotions* (FUMIE). Results showed that contact experiences and frequency were irrelevant and insignificant in predicting implicit prejudice (Kurita & Kusumi, 2009). Additionally, Friedman (2017) conducted linear regressions on implicit and explicit prejudice on various contact variables (i.e., number of friends with disabilities; number of family members with disabilities; number of acquaintances with disabilities) and found that each of these variables were insignificant in predicting implicit and explicit prejudice.

<div align="center">**Personal Traits**</div>

Motivation

A person's source of motivation (external vs. internal) is hypothesized as a moderator between the relationship of implicit attitudes and prejudicial behaviors (Fazio & Olson, 2003). Internal motivation refers to the drive an individual has to regulate prejudice due to their own personal values (Devine et al., 2002). External motivation refers to one's drive to regulate prejudice attitudes and behaviors due to social pressure or the negative implications of appearing prejudiced to others (Devine et al., 2002). Past research suggests that when individuals are more internally motivated, rather than externally motivated, it helps them regulate and control

prejudice attitudes and behaviors (Devine et al., 2002). One study in our systematized review confirmed that internal motivation significantly predicted one's implicit attitudes and prejudice. Kurita and Kusumi (2009) found a main effect of internal motivation indicating that having higher internal motivation to control one's prejudice predicted significantly lower implicit prejudice towards PWDs. Additionally, the authors found that higher external motivation to control prejudice resulted in higher implicit prejudice towards PWDs (F (1,56) = 3.36, p < .08). Finally, Kurita and Kusumi (2009) found that neither internal nor external motivation significantly affected a participant's explicit attitudes. These findings indicate that that external prejudice remains unchanged regardless of one's source motivation (Kurita & Kusumi, 2009). Interestingly, participants across the study had positive explicit attitudes towards PWDs, regardless of their source of motivation, indicating that prejudice towards PWDs may not be something that many participants considered they needed to change or regulate (Kurita & Kusumi, 2009).

A second study by Pruett and Chan (2006) measured participant's sources of motivation. The authors found that neither internal nor external motivation to regulate prejudice significantly affected one's implicit attitudes towards PWDs. The authors did find that external motivation significantly predicted positive explicit attitudes towards PWDs. These findings indicate that having external motivation does little to challenge one's implicit prejudice but rather encourages individuals to endorse and agree with perceived socially desirable thoughts and attitudes (Pruett & Chan, 2006).

Information Processing

Using Epstein's (1994) cognitive-experiential self-theory of personality, which hypothesizes that people have both a rational and an experiential system of information

processing, Suthakaran et al. (2011) found that favoring an experiential style of information processing was correlated with positive explicit attitudes towards PWDS as measured by the *Attitudes Towards Disabled Persons* (ATPD) scale. The experiential system is characterized as encoding information in holistic, nonverbal, and emotional ways that are automatic and effortless (Epstein, 1994). Whereas the rational system is logical, deliberate, and codes information in a reductionist manner (Epstein, 1994). When controlling for age and social desirability, the authors found that factors such as favoring of an experiential style of processing, $B = .26$, $t(156) = 3.47$, $p < .01$, and social desirability, $B = .29$, $t(156) = 2.87$, $p < .01$, were both significant predictors of a positive explicit attitude towards PWDs (Suthakaran et al., 2011). It is hypothesized that this result is due to the reliance on emotions, such as empathy, as well as a holistic perspective in the experiential style which would discourage a participant from reducing an individual to their disability (Epstein, 2004; Suthakaran et al., 2011).

Trait Perfectionism

Cox and Hill (2018) analyzed the relationship between participants ($N =188$) commitment to socially prescribed trait perfectionism (SPP) and their attitudes towards PWDs; measured by negative affect, interpersonal stress, calm, positive cognitions, and distancing behaviors. SPP is described as the pressure to meet the standards of perfectionism set by significant others and society (Cox & Hill, 2018). The authors found that having SPP predicted negative affect, interpersonal stress, and distancing behaviors when interacting with PWDs. The authors hypothesize that high levels of SPP make individuals anxious in social domains where social judgement or negative emotional reactions could occur. This anxiety causes individuals to socially distance or avoid stressful interactions altogether, such as interacting with PWDs, to maintain the illusion of perfection (Cox & Hill, 2018). These findings provide evidence for the

link between society's ableist attitudes (e.g., perfectionism) and prejudice behaviors (e.g., social avoidance) by individuals that endorse these views.

Fate Control

Ma et al. (2012) applied Leung et al.'s (2002) social axiom framework to investigate the relationship between an individual's implicit attitudes towards PWDs and their social axioms, or beliefs about oneself, others, the environment, and spirituality. The five social axioms include: social cynicism, social complexity, reward for application, religiosity, and fate control (Leung et al., 2002). The authors found that fate control was the only the social axiom that was significantly correlated with negative implicit attitudes towards PWDs (r = -.29). Fate control refers to a belief that the outcomes of one's life are predetermined but that they ultimately have control and influence over externally caused outcomes (Ma et al., 2012). The authors hypothesize that concerns about events and outcomes outside of one's control, such as developing or being born with a disability, conflicts with one's belief in fate control and subsequently leads individuals to develop beliefs that disabilities are a consequence of a person's poor morality (Ma et al., 2012). Additionally, a person's strength in their belief in fate control predicts the likelihood they believe that unemployment, poor educational outcomes, or financial burdens are a failure of the PWD to overcome their disability (Ma et al., 2012). Fate control is a common belief endorsed by those that support capitalist systems, as demonstrated by its core value of meritocracy, or the belief that if one works hard, they can achieve at the same level as anyone. These beliefs ultimately convey the message that those who are not successful are not working hard enough to change their outcomes.

Social Desirability

Participants' tendency to respond in socially desirable ways was measured and analyzed in three studies, two of which measured explicit attitudes rather than implicit attitudes (Suthakaran et al., 2011; Kowalska & Winnicka, 2013). Social desirability refers to the desire for participants to avoid negative social judgement or ostracism by endorsing ideas that are viewed as socially accepted or of the majority opinion. Suthakaran et al. (2011) used age and social desirability as controls within their study while investigating the relationship between a participant's information-processing style and their explicit attitudes towards PWDs. Of the two controls, social desirability was a significant predictor of attitudes in block 1 and block 2, $B = .25$, $t(160) = 3.34$, $p < .01$; $B = .26$, $t(156) = 3.34$, $p < .01$, respectively. Additionally, Kowalska and Winnicka (2013) found that higher social desirability scores correlated with greater desires to socially distance during interactions with PWDs, which was treated as an explicit measure of a person's attitude towards PWDs. A third study by Pruett and Chan (2006) found that social desirability failed to significantly predict explicit attitudes, $(R2 = .001)$, $F(1,221) = .16$, and implicit attitudes, $(R2 = .001)$, $F(1,170) = .12$, *towards* disabilities. These results together show that there are societal expectations to endorse positive attitudes and behaviors towards PWDs, but people's implicit attitudes and behaviors while interacting with PWDs contradict these socially desired explicit attitudes. Most of the findings within the analyzed studies indicate that a person's positive explicit attitude may serve to avoid addressing an individual's prejudice or correcting behaviors that negatively impact PWDs.

Conclusion, Practical Implications, and Future Directions

The prevalence of ableist ideology, which perpetuates the notion that disability is undesirable or synonymous with limitations, was captured by a majority of the articles in our

systematized review. Specifically, participants in seven articles were classified as aversive ableists, meaning they had positive explicit attitudes and negative implicit attitudes towards PWDs. Consciously, people seem to believe that their explicit support and positive attitudes towards PWDs mitigate or eliminate the possibility of having negative implicit attitudes or engaging in prejudiced behaviors towards PWDs. However, studies in our review found that infantilizing behaviors, poorer evaluations of PWDs in work and academic settings, and greater social distancing behaviors were common amongst many participants, regardless of having positive explicit attitudes towards PWDs (Robey et al., 2006; Louvet, 2007; Cox & Hill, 2018).

In terms of demographics, our systematized review uncovered that negative explicit and implicit attitudes were commonly linked to participants that identified as older, white, male, and with conservative political beliefs. In many western societies, and especially in the United States, these are privileged identities within the capitalist system, providing little motivation or incentive for participants of these identities to challenge their prejudiced behaviors or biased attitudes (Liu, 2017).

Additionally, we found that contact with PWDs did not have a significant effect in changing an individual's negative implicit attitude towards PWDs (Friedman, 2017; Wilson & Scior, 2015; Kurita & Kusumi, 2009). We found that having an experiential style of information processing (Suthakaran, 2011) and internal motivation (Kurita & Kusumi, 2009) to change prejudice potentially moderates a participant's negative implicit attitudes and should be considered an area of future research. Conversely, we found that having a rational style of information processing (Suthakaran, 2011), external motivation to change prejudice (Kurita & Kusumi, 2009), socially prescribed perfectionism (Cox & Hill, 2018), a belief in fate control (Ma et al., 2012), and a desire to respond in socially desirable ways correlated with negative implicit

attitudes. Each of these factors indicate that high levels of social pressure have an insignificant effect on changing negative attitudes towards PWDs. Therefore, we purpose young individuals be encouraged to engage in self-motivated and self-reflective practices to begin identifying and changing their biased behaviors and negative attitudes towards PWDs.

Future research must investigate the relationship among these variables and to develop interventions that target factors (e.g., information processing; motivation; belief in fate) that might help change people's negative implicit attitudes and prejudice towards PWDs. However, across the various fields that provide social interventions and counseling services, such as clinical or counseling psychology, there is an assumption that psychological research of PWDs should only occur within the realm of rehabilitation counseling (Olkin, 2002). However, the values and themes of counseling psychology have positioned the field to be a critical resource in closing the health, education, and employment disparities between PWDs and those without disabilities. Despite the current lack of critical research and training, counseling psychologists are uniquely positioned as practitioners, academics, and researchers to address the negative attitudes and prejudiced behaviors that were uncovered in our systematized review.

Clinical Practice

The primary mechanism for delivering interventions for counseling psychologists is through direct individual, group, or organization-wide counseling services. In the subsequent review of the literature regarding the implicit and explicit attitudes towards PWDs, three studies (Aaberg, 2012; Archambault et al., 2008; VanPuymbrouck et al., 2020) found that students in healthcare-related fields and current healthcare workers had disability-related prejudice and a bias towards non-disabled individuals. Lingard, Tallett, and Rosenfield (2002) hypothesize that

professionals within the medical community are rarely challenged to self-reflect on their individual or professional culture, beliefs, values, and personal biases. Without this reflective practice, healthcare professionals are at-risk of providing substandard care and engaging in biased behaviors that negatively impact a patient's health and wellbeing (White Hughto et al., 2015). For example, within a meta-analysis that investigated implicit biases of healthcare providers, 35 of 42 articles found a positive relationship between provider implicit bias and poorer quality of care (FitzGerald & Hurst, 2017).

Reducing harmful biases and negative attitudes towards PWDs requires the use of interventions that address both structural policies and procedures that perpetuate harmful practices and growing health disparities (Cook et al., 2014). Tucker et. al (2007) suggests that counseling psychologists, can play an essential role in training healthcare professionals to develop cultural knowledge, self-reflective practices that can help reduce biased behaviors, and interpersonal skills that can help facilitate trust, respect, warmth, and empathy between patients with disabilities and their clinicians, given their commitment to the field's values and curriculum that encourages the development of introspection and cultural awareness. Implementing these remedial strategies should not be limited to the healthcare field but should also be included in any domain where negative implicit attitudes were found in our systematized review (e.g., college campuses; home; the workplace).

Secondly, since no studies in our review explored the explicit and implicit attitudes of counselors that engage in remedial practices with PWDs, there is a risk that counselors themselves perpetuate harmful stigma and engage in biased behaviors towards clients with disabilities. A study by Varkula and colleagues (2017) found that clients with a disability, in a college counseling center, were more likely to self-terminate therapy prematurely, or be referred

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to community agencies when compared to clients without disabilities. These outcomes are most likely related to counseling centers having limited disability-related training (Goad & Robertson, 2000) and many counselors having deficit-oriented views of disability (Smart, 2009). To address these poor outcomes, counseling psychologists must consistently engage in trainings and interventions that challenge them to self-reflect on their own disability-related biases and how these biases impact the effectiveness of their counseling interventions (Forrest & Campbell, 2012). It is critical that these trainings occur in collaboration with disability studies researchers or agencies that provide disability-related services, such as a university's Disability Resource Center. Engaging in this ongoing collaborative training would allow counselors opportunities to engage in disability-affirmative counseling, which emphasizes and validates the social experience of disability. A counselor may be more likely to convey competence in providing counseling services to PWDs by having an awareness of historical social issues that have impacted individuals with disabilities, implementing theory that explores an individual's experience of having a disability, and developing self-awareness of their implicit biases and ableist attitudes. This level of competency allows a counselor to engage in a collaborative counseling process that explores the ways that experiences of ableism, infantilizing behaviors, paternalistic attitudes, found in our review, have affected an individual's mental health and wellbeing (Stuntzer & Hartley, 2014). These recommendations are critical in developing the trust, rapport, and counseling-alliance which are critical in helping any client feel safe engaging in counseling services. Additionally, these strategies would help counselors working with PWDs to engage in advocacy work that focuses on reducing the negative attitudes society has regarding disability and the ongoing oppression of PWDs.

Research

Conducting empirical research is a primary way in which counseling psychologists can uncover factors that lead to the negative outcomes (e.g., unemployment; poor health outcomes) for PWDs, and most importantly identify factors that correlate with psychological well-being. Our systematized review showed that there is a significant lack of literature investigating the attitudes people have towards PWDs, as we only found 22 relevant articles for our review. Further, none of the studies included in our systematized review were published in counseling-related journals or included mental health counselors or psychologists as participants when measuring implicit and explicit attitudes towards PWDs.

From the years 1990 to 2010 only 3% of counseling psychology research published specifically investigated the experiences of PWDs, and only 18 total articles were empirical (Foley-Nicpon & Lee, 2012). It is surprising that disability is not frequently included as an important cultural factor within the field's published research, as CPSY specifically values multiculturalism and diversity as a cornerstone of the profession. This phenomenon might be explained by one study from our systematized review. Barnard et al. (2008) found that university faculty that place a positive value on diversity had more negative attitudes towards PWDs, indicating that disability as an identity was not considered a positive and meaningful aspect of diversity. CPSY as a field needs to investigate if counseling psychologists also have similar attitudes towards PWDs, which might help explain why disability is under researched and rarely represented in the CPSY literature. Given the insufficient amount of disability-related literature, CPSY as a field needs to acknowledge the negative implicit attitudes the field itself has towards PWDs and recognize disability as a culturally diverse group within future research studies. This acknowledgement would encourage more individuals to engage in research that explores the

experience of PWDs, which would aid in the development of disability-related counseling curriculum within academic programs.

Education

The significant lack of educational methods used to train future counselors to effectively provide counseling to PWDs (Stuntzner et al., 2014) and correct society's negative attitudes towards PWDs is a consequence of the lack of empirical research and counselor training that pertains to understanding the disability community. Artman and Daniels (2010) found that undergraduate and graduate trainees in counseling and clinical psychology programs perceived that their coursework and training did not prepare them to work with PWDs. Additionally, Rivas and Hill (2018) found that participants in a graduate-level counseling program described their coursework as significantly lacking disability-related content, and that disability was rarely discussed as an important cultural identity to be considered in the counseling process. Both findings were consistent with previous research that found that disability was rarely discussed within multicultural counseling training courses (Smart & Smart, 2006; Swain et al., 2006). This lack of preparation led counselor trainees to describe feeling incompetent, unprepared, and led to high levels of guilt and anxiety when they engaged in counseling with PWDs (Rivas & Hill, 2018). One study in our systematized review found that low self-efficacy levels correlated with teachers' negative attitudes towards PWDs, such as viewing disabilities and disability-accommodations as burdensome (Becker & Palladino, 2009). Future research should investigate the relationship between counselor self-efficacy and attitudes towards PWDs in order to provide a rationale for the development of more disability-related curriculum in counseling programs, and to determine if counselor self-efficacy and attitudes towards PWDs are appropriate factors to target for future intervention.

The development of separate courses or specific curriculum that addresses the counseling of PWDs in each of the core-training courses is imperative to develop culturally competent and disability-affirmative CPSY professionals. Educational training courses that allow individuals to become aware of their negative implicit attitudes and biases towards the PWD community reduces the risk of clinicians engaging in behaviors commonly found in our systematized review such as infantilization and paternalism. Therefore, we call upon graduate-level CPSY programs to first evaluate the implicit and explicit attitudes that faculty and students have towards PWDs before developing a rationale and additional curriculum and training on addressing disability-related issues. We also encourage programs to evaluate whether their current multicultural coursework discusses issues such as implicit bias, aversive ableism, infantilization, paternalism, and demographic and personal factors that might mediate and moderate these attitudes within an individual. The results of our systematized review demonstrate that no member of society, not even the family members of PWDs (e.g., Friedman, 2019b), are immune to developing ableist attitudes and engaging in prejudiced behaviors. It is our hope that the findings in our systematized review will induce a sense of urgency for those who identify as part of the field of CPSY to address their own ableist attitudes and work to dismantle a long history of ableism and prejudice towards PWDs.

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CHAPTER 2.   STEREOTYPE THREAT, SELF-EFFICACY, AND PERSISTENCE AMONG STUDENTS WITH DISABILITIES: THE MODERATING ROLE OF IMPLICIT MINDSETS

The Research Problem

Obtaining a postsecondary degree expands an individual's employment options, access to social resources, and lifetime earning potential, with estimates of 62% higher earning wages for individuals compared to those with a high school diploma (NCES, 2015). In addition to monetary and employment gains, obtaining a postsecondary degree increases overall physical and mental health as studies have found that individuals with a degree are less likely to be diagnosed with depression (Rosenbaum, 2011), develop cardiovascular diseases (Kavanagh et al., 2010), smoke (Cutler & Lleras-Muney, 2010; Ronsenbaum, 2011), and engage in excessive alcohol consumption (Cutler & Lleras-Muney, 2010). Increased monetary and social resources, along with health benefits gained from obtaining and attending postsecondary education are essential factors in developing one's sense of self-sustainability, autonomy, and independence.

It is estimated that having an undergraduate degree increases the probability of one's labor force participation by nearly 31% in the United States (McCauley, 2019). However, national data have estimated that only four percent of individuals with disabilities, aged 24-60 years old, obtain an undergraduate degree (National Center for Educational Statistics [NCES], 2017). Despite these problematic statistics, it is encouraging to see that the number of enrolled postsecondary students with disabilities increased each year throughout the previous two-decades (NCES, 2019). Unfortunately, greater representation did not result in closing the postsecondary achievement gap between individuals with and without diagnosed disabilities. The stagnant postsecondary achievement gap, coupled with rising enrollment numbers of students with

disabilities, implies that there are social and environmental factors that negatively influence the persistence and attrition rates of postsecondary students with disabilities.

Persistence data have shown that 25% of undergraduate students with disabilities left their undergraduate institution within one year of enrollment, compared to 13% of students without disabilities (NCES, 2019). Researchers hypothesize that a critical reason for the lower persistence of students with disabilities is due to significantly fewer social supports that promote the successful transition from high school to university (Getzel, 2008; Newman & Mandaus, 2015). For example, most students with disabilities, while attending high school, have convenient access to social supports such as their Individualized Educational Plan (IEP) committee, school counselors, school psychologists, teachers, and administrators that can serve as psychological supports and ongoing advocates that promote their academic and social growth (Aquino & Bittinger, 2019). While having access to transitional supports can be critical to student persistence, researchers have hypothesized that these resources consequently perpetuate negative disability stereotypes and are needed because of an ableist U.S. culture and educational system (Wolbring, 2007; Dolmage, 2017).

Undergraduate students with disabilities report beliefs that peers and educators have lower expectations of their academic performance (McCall, 2015) and are treated as less competent and even belittled within academic environments (Lyman et al., 2016). A recent study confirmed that these were not merely distorted perceptions but an unfortunate reality. Akin and Huang (2019) found that undergraduate students without disabilities endorsed perceptions that individuals with disabilities were less capable both academically and socially (Akin & Huang, 2019). Further, the same study found that experiences of stigma varied by disability type, showing that undergraduate students perceived students with invisible disabilities (i.e.,

psychiatric, cognitive) as less capable, less deserving of accommodations, and more disruptive than students with visible disabilities (Akin & Huang, 2019). These findings are one indication that students that identify as having a disability, regardless of type, face unique challenges, harmful stigma, and discriminatory behaviors that threaten their well-being, persistence, and motivation to complete their degrees.

A significant variable that protects against diminishing persistence intentions and academic motivation is self-efficacy (Chemers et al., 2001). Fichten and colleagues (2014a) found that strong self-efficacy beliefs were one of the three necessary factors in predicting undergraduate students with disabilities' intentions to graduate. However, historically marginalized populations are at risk of experiencing stereotype threat, which significantly decreases self-efficacy beliefs (Schmader et al., 2008). Examining the stereotype threat phenomena, as it pertains to postsecondary students with disabilities, provides an additional explanation for the growing inequality gap between the non-disabled and disabled individuals' postsecondary achievement. The primary purpose of the study is to develop an understanding of the level of stereotype threat students with disabilities face in postsecondary environments and if stereotype threat predicts individuals' self-efficacy beliefs and persistence intentions. Additionally, the study investigates if a student's implicit mindset can buffer the effects of stereotype threat has on self-efficacy levels and persistence intentions.

Stereotype Threat Theory

Stereotype threat theory postulates that when individuals identify as being a member of a stereotyped group, and are aware of group stereotypes, they experience high levels of stress to succeed and disprove these group-level stereotypes (Spencer et al., 2016). Paradoxically, this increased pressure causes individuals to underperform or withdraw altogether, thus reinforcing

the perceived validity of these harmful stereotypes (Spencer et al., 2016). This process begins when individuals are reminded of their marginalized identity and group-level stereotypes in covert and overt ways within threatening domains (Steele & Aronson, 1995). Domains are conceptually labeled as "threatening" when the stereotyped group (a) represents a numerical minority within the environment, (b) is exposed to overt stereotypical rhetoric, or (c) is reminded of their identity through environmental cues (Inzlicht & Ben-Zeev, 2000; Woodcock et al., 2012). For example, a classroom's physical structure not being easily accessible would serve as an environmental cue to students who use supportive mobility devices that they are not expected to have the capability of reaching these academic environments. If an individual identifies as being part of the marginalized group and recognizes environmental cues that induce stereotype threat, negative affect increases (e.g., fear; anxiety; stress) and their attention, working memory, and persistence intentions significantly decreases, and withdrawal behaviors become more likely (Schmader & Johns, 2003; Johns et al., 2006; Steele & Aronson, 1995).

Exposure to situations that induce chronic stereotype threat has a profound negative effect on a person's working memory (Schmader & Johns, 2003) and interpersonal functioning (Spencer et al., 2016). Jamison and Harkins (2007) explain that as a person's motivation to disconfirm negative stereotypes increases, this new goal-directed behavior begins to interfere with an individual's cognitive capacity, leading to poorer task performances. These poor performances eventually lead individuals to engage in more avoidance behaviors, disengage from the threatening domain, and deliberately underperform to protect against diminishing self-confidence and motivation (Steele & Aronson, 1995). This process is conceptually termed as psychological disidentification (Steele, 1997). Disidentification is defined as the process of psychologically disengaging from threatening domains by devaluing the domains importance to

one's life, or, by no longer identifying as part of the domain (Steele, 1997). The function of the

disidentification process is to mitigate the damaging psychological effects that success and

failure has on an individual's self-worth and self-esteem (Major et al., 1998; Cocker et al., 2003).

The risk of engaging in disidentification processes are exacerbated as an individual faces more

rigorous and challenging tasks as they progress further within the threatening domain (e.g.,

taking higher level major courses) (Woodcock et al., 2012). These psychological effects of

stereotype threat, such as disidentification, cognitive decline, and increased negative affect, each

contribute to the higher attrition and burnout rates for marginalized students in postsecondary

environments (Hall et al., 2015).

Steele and Aronson (1995) first uncovered this phenomenon while studying African

American students within the academic domain. The authors found that when African American

students were primed to believe that a standardized assessment was a measure of their innate

ability, they performed significantly worse than African American students in the control group

(Steele & Aronson, 1995). The authors hypothesized that the experimental group performed

significantly worse due to an activated fear of confirming the harmful stereotype that African

American students are inherently not as intelligent as white peers (Steele & Aronson, 1995).

Similar findings have been replicated across race, ethnicity, gender, and age. For example,

Schmader (2002) found that women performed poorer on mathematics examinations when

primed to believe that the exam was measuring the abilities of women as a group, activating the

stereotype that women are less capable than men in their mathematic abilities. Scholars have

applied stereotype threat theory when investigating underrepresentation, underperformance, and

the attrition rates of racial, ethnic, and gender minorities (Steele & Aronson, 1995; Schmader &

Johns, 2003; Deemer et al., 2016), but few studies have applied this framework to individuals

with diagnosed disabilities (Descombre et al., 2016; Zhao et al., 2019).

Harmful stereotypes of individuals with disabilities include: intellectual incompetence, dependency, high levels of perceived warmth, physical weakness, and being perceived as child-like regardless of age, development, or disability type (Louvet, 2007; Louvet et al., 2009; Coleman et al., 2015; Descombre et al., 2018). These unchallenged negative stereotypes cause peers and educators to develop lower expectations and biased attitudes towards those who identify as having a disability (Descombre et al., 2016). As a result, college students with all disability-types (i.e., physical, cognitive, psychiatric) have reported experiencing excessive sympathy, pity, unwanted support, and frequent offers of assistance from instructors and peers during tasks that are not impacted by their disability (Akin & Huang, 2019). These biased behaviors serve as a consistent reminder or environmental cue of the negative stereotypes that nondisabled educators and peers hold towards students with disabilities. In response to these cues, students with disabilities are at risk of developing a fear of confirming the validity of these negative stereotypes and low expectations. As a result of the increased fear and anxiety, students with disabilities will avoid disclosing their disability to peers and educators, avoid requesting accommodations, ask fewer questions in classes, and even withdraw from the environment altogether (Silverman & Cohen, 2014; Martin, 2010).

The biased attitudes of peers and educators inadvertently puts students with disabilities in a double bind. If a student with a disability discloses their disability status to peers and educators to receive accommodations or to improve the academic environment, they are at an increased risk of experiencing biased attitudes and behaviors which increases the vulnerability to stereotype threat. Alternatively, if a student with a disability disidentifies from their disability-status, they are at risk of not receiving the support and accommodations they may need to

perform academically, paradoxically leading the individual to experience the negative

psychological effects of stereotype threat they attempted to avoid (e.g., academic

underperformance).

Research has confirmed that experiences of stereotype threat are a reality for individuals

with disabilities (Silverman et al., 2014; Desombre et al., 2018) and not just for individuals

identifying as racial, ethnic, or gender minorities as previous decades of stereotype threat-related

research suggests. Although the research in this area is limited, stereotype threat is a relevant to

the academic outcomes and wellbeing of students with disabilities. Descombre and colleagues

(2018) found that when students with disabilities were informed that they would be evaluated by

an individual without a disability on a cognitive performance, it induced significant levels of

stereotype threat and significantly worsened the students' performance. Additionally, Silverman

and Cohen (2014) found that individuals with physical disabilities endorsed experiencing

significantly high levels of stereotype threat, which correlated with significantly lower levels of

self-integrity, psychological well-being, and higher levels of unemployment. Further, a recent

study found that high school students with learning disabilities experienced high levels of

stereotype threat which correlated with lower persistence intentions and significantly poorer

grade point averages and test scores (Zhao et al., 2019). Experiencing lower levels of self-

integrity and grade point averages as a negative effect of stereotype threat (Silverman & Cohen,

2014; Zhao et al., 2019) would expectedly have a harmful influence self-efficacy beliefs

(Schmader et al., 2008). An individual's self-efficacy beliefs, regardless of the various identities

one holds, have a profound impact on academic achievement and persistence intentions

(Pennington et al., 2016).

The current study hopes to expand upon the Social Cognitive Career Theory of Career Self-Management (SCCT-CSM; Lent & Brown, 2013) theory by applying stereotype threat as an environmental factor that a student with disability is tasked to overcome. Furthermore, the current study will investigate an individual's implicit mindset as an "adaptive behavior" that mitigates the relationship between stereotype threat, self-efficacy, and persistence intentions. Few studies have investigated potential moderating factors that could decrease the negative effect stereotype threat has on self-efficacy beliefs and persistence intentions, specifically for students with disabilities. However, previous research has investigated how mindsets significantly moderated the impact of stereotype threat for African American undergraduate students (Aronson et al., 2002). Aronson et al. (2002) found that African American undergraduate students who endorsed and developed a growth mindset throughout the semester were able to buffer the negative impact of stereotype threat, which correlated with better academic performances and higher levels of academic satisfaction (Aronson, 1997; Aronson et al., 2002). In the subsequent section, I discuss SCCT-CSM as a framework to better understand how contextual influences such as stereotype threat influence a person's self-efficacy beliefs and their adaptive responses, which are each necessary to promote persistence in academic environments.

Primary Theoretical Framework: Social Cognitive Career Theory of Career Self-Management

Social Cognitive Career Theory (SCCT; Lent et al., 2014) was originally structured to expand upon Bandura's (1986) Social Cognitive Theory, which considers how environmental and contextual factors influence career choice, academic interests, and self-efficacy beliefs that help mobilize an individual towards the pursuit of personal goals. The person-environment

interaction captured within the SCCT framework deviates from popular trait-based theories that match individual personalities and behavioral traits with occupations of similar trait profiles (Holland, 1959). Trait-based theories are designed to ignore sociocultural factors that influence one's self-efficacy beliefs, ultimately contributing to further stigmatization of marginalized populations. For examples, PWDs are often stereotypically matched with occupations that require little physical responsibilities and less cognitive demands (Szymanski & Trueba, 1994). SCCT moves away from career theories that focus on what careers individuals should pursue and towards answering the question of "what experiences lead individuals towards certain career paths versus others?" (Lent & Brown, 2014).

SCCT postulates that an individual's career choice is dependent upon the interaction of contextual factors and an individual's self-efficacy beliefs, outcome expectations, and career goals (Bandura, 1986). Contextual factors include, but are not limited to, one's race, culture, gender, social supports, or disability status (Lent et al., 2014). For example, SCCT considers how an individual's disability status might limit early educational and employment opportunities that foster self-efficacy beliefs, future outcome expectations, and perceived career options (Lent et al., 2014). Adding this contextual factor helps bring an awareness that an individual's present traits, interests, and capabilities are often socially constructed and not necessarily an accurate representation of future capabilities and career interests (Lent et al., 2014).

Outcome expectations are defined as the anticipated consequences (e.g., social, material, and self-evaluative) an individual believes will occur if they choose to perform a task or engage in a specific action (Bandura, 1986). Individuals that anticipate negative consequences are less likely to sustain effort during tasks and are more likely to avoid engaging in tasks altogether

(Lent et al., 2014). Outcome expectations are shaped by an individual's past experiences or through observing similar others' success or failure following certain tasks (Bandura, 1986).

The Social Cognitive Career Theory (SCCT) of Career Self-Management (SCCT-CSM, Lent & Brown, 2013) complements Lent, Brown, and Hackett's original SCCT (1994) framework. However, the expanded theory explores process-level aspects, or the "how" of one's career development (e.g., how one responds to barriers and setbacks; how one copes with transitions from school to work) (Lent & Brown, 2013). This model emphasizes identifying and promoting adaptive and behavioral factors that help people navigate learning and training environments (e.g., planning, goal setting, negotiating transitions, coping with adversity) that promote career and academic development (Lent & Brown, 2013). The theory stresses the importance of recognizing how an individual enacts their adaptive behaviors during normative tasks (e.g., making decisions) and unpredictable events (e.g., unemployment; personal injury) (Lent & Brown, 2013). Importantly, SCCT-CSM considers how individuals' coping behaviors help them persist in response to predictable (e.g., difficult course content) and unpredictable challenges (e.g., stereotype threat) in academic and occupational environments. Congruent with the original SCCT and Social Constructive Theory, SCCT-CSM assumes that self-efficacy beliefs are a critical precursor to the development of one's adaptive behaviors and their willingness to enact these positive coping strategies in the face of adversity.

Bandura (1997) described self-efficacy as the belief an individual has about their ability to organize and engage in behaviors that are necessary to achieve personal goals and successfully complete difficult tasks. High levels of self-efficacy have shown to be correlated with greater persistence behaviors and academic success, specifically in postsecondary settings (Chemers et al., 2001). One assumption of the SCCT-CSM model is that those with perceptions of having

high social support and few barriers will correlate with positive self-efficacy beliefs. Consequently, positive self-efficacy beliefs directly influence the development and implementation of adaptive behaviors that help one to persist towards achieving their academic and career goals (Benight & Bandura, 2004). For example, Andreassen and colleagues (2017) studied students with dyslexia and found that self-efficacy and academic performance were positively correlated with a students' self-regulated study behaviors and planning strategies. Conversely, Ali and Menke (2014) found a significant negative correlation ($r = -.54, p = < .001$) between encountering barriers, such as a lack of parental support or experiencing racial or ethnic discrimination, and self-efficacy beliefs for Latinx students.

Factors that are known to contribute to the development of positive self-efficacy beliefs are successful past performance, observing others with similar identities, social persuasion, and emotional arousal (Bandura, 1995). Successful past performance refers to the individual receiving a judgement of competence following the completion of a task which raises their confidence levels and belief that they have an ability to perform competently in similar but and more challenging tasks (Usher & Parajes, 2008). Additionally, many students evaluate their capabilities in relation to their peers and are more likely to adapt their beliefs about their capabilities when they have observed success or failure by similar others in terms of perceived skill level, identities, and attributes (Usher & Parajes, 2008). Social persuasion by trusted others is another critical source of self-efficacy as individuals rely on others for evaluative feedback and encouragement during difficult tasks or skill development (Usher & Parajes, 2008). Finally, emotional arousal serves as an indicator to individuals whether they are performing competently. For example, a student that experiences dread or anxiety when engaging in a certain class may

interpret these emotional responses as indicators of incompetence and impending failure (Usher & Parajes, 2008).

Experiencing stereotype threat has the potential to disrupt each of these factors that are known to help foster self-efficacy beliefs. For example, Markoulakis and Kirsh (2013) found that stigma-related perceptions correlated with students with disabilities' academic support seeking behaviors, which are necessary for gaining successful academic performance examples to draw upon during difficult tasks. Additionally, one of the primary effects of stereotype threat is the direct impact it has on an individual's performance abilities (Steele & Aronson, 1995). These diminished performance abilities, such as having a compromised working memory and decreased concentration (Schmader & Johns, 2003), results in poorer academic outcomes and diminished academic self-efficacy over time. A second important source of self-efficacy is the observation of peers that are perceived as similar in terms of identity. The disparity between undergraduate students with a diagnosed disability and those without remains significant, putting PWDs in an environment with few similar role models. Moreover, chronic experiences of stereotype threat lead individuals to begin disidentifying from their threatened or stigmatized identities (i.e., disability identity, Steele et al., 2002) in order to psychologically minimize the threat and maintain self-esteem (Woodcock et al., 2012; Nussbaum & Steele, 2007). Disidentifying from one's disability identity results in the individual attempting to suppress any behaviors that may signal they have a disability or avoiding disclosure of their disability to others (Martin, 2010; Silverman & Cohen, 2014). The identity disidentification process further limits the already low number of students with disabilities others can observe as role models of academic success. Therefore, students with disabilities have fewer opportunities to observe academic performances and successes of students within their group identity.

Emotional arousal is a third factor that helps foster self-efficacy beliefs. However, high levels of perceived stereotype threat correlate with increased levels of negatively valanced emotions, such as fear, anxiety, stress, and discomfort (Steele & Aronson, 1995; Johns et al., 2008). Finally, a fourth factor of developing self-efficacy is social persuasion which is also negatively impacted by stereotype threat. Those facing stereotype threat perceive others as either doubting or holding low expectations regarding their group's ability to perform successfully in threatening domains (Spencer et al., 2016). Therefore, the conditions created by high levels of stereotype threat make it difficult for self-efficacy beliefs to increase or maintain at a positive level. Due to the prevalence of ableist attitudes in academia stemming from historical practices of physically isolating PWDs from postsecondary environments (Dolmage, 2017), low self-efficacy should be conceptualized as a consequence of poor campus climates and negative disability attitudes of peers rather than a problematic trait of the individual.

Investigating stereotype threat as a valid contextual factor within the SCCT-CSM model is an intriguing prospect, as there is evidence to support that stereotype threat is a negative indirect predictor of self-efficacy (Lin & Deemer, 2018). Equally intriguing is the application of the SCCT-CSM model to understand the outcome expectations and experiences of PWDs in postsecondary environments. Past researchers applied the SCCT framework to individuals with epilepsy and found that self-efficacy beliefs, outcome expectations, and social influences significantly predicted work engagement and participation (Sung & Connor, 2017). Furthermore, self-efficacy beliefs and outcome expectations have been shown to predict the career intentions for high school students with disabilities (Ochs & Roessler, 2004). Finally, Wilson-Kovacs and colleagues (2008) investigated the perceived social and environmental supports, a critical factor in enhancing self-efficacy beliefs and outcome expectations, of individuals with physical

disabilities. The researchers found that participants perceived their work environments as lacking awareness of the needs of workers with disabilities, offered limited opportunities for advancement, and provided inadequate team supports (Wilson-Kovacs et al., 2008). This finding highlights the importance of applying to the SCCT-CSM framework to continue to uncover contextual and societal barriers that need to be addressed to help promote equitable treatment and representations of PWDs in academic and work environments. In the subsequent section, I discuss the inclusion of implicit mindsets as an adaptive behavior and potential buffer under the SCCT-CSM framework. An individual's implicit mindset is differentiated from self-efficacy as it is defined as students' belief about their capability for future growth and change, rather than beliefs about their current skill-level and capabilities (Marsh, 1990).

Implicit Theory of Intelligence

The expectations and attitudes of others has a profound influence on how individuals develop personal mindsets towards their academic and social achievement. The implicit theory model originally proposed by Dweck and Elliott (1983) characterizes an individual as either holding a fixed mindset or growth mindset towards their intelligence, personality, and personal traits. Those with a fixed mindset tend to view individual intelligence, personality, abilities, and even personal values such as morality as inherent and difficult to change through increased effort and persistence (Yaeger & Dweck, 2012). In contrast, those with a growth mindset view intelligence, personality, and a person's ability as something that can be enhanced or changed through increased effort, persistence, and remediation strategies (Dweck et al., 1995; Yaeger & Dweck, 2012).

A student's mindset has a significant impact on how they perceive the academic environment and behaves within it. Students with a fixed mindset conceptualize the academic

domain as measuring innate and intrinsic abilities and learning as a process that uncovers and enhances these innate abilities (Dweck et al., 1995). Further, challenging academic tasks are perceived by individuals with a fixed mindset as indicators that a student may not have the innate ability to ever be successful within the challenging academic domain (Dweck et al., 1995). However, students with a growth mindset conceptualize the academic domain as measuring learning over time, effort, growth, and academically challenging tasks are conceptualized as important opportunities to enhance current abilities (Dweck et al., 1995). Therefore, it can be argued that an individual's persistence within challenging academic domains is correlated with the implicit mindset he/she endorses.

Dweck, Chiu, and Hong (1995) found that those with a growth mindset are more likely to exert effort and maintain motivation towards achieving their academic goals following failure, adversity, and challenge. In the same study, those with a fixed mindset withdrew more quickly or avoided challenges to protect against having their lower ability levels exposed (Dweck et al., 1995). Students transitioning to college commonly anticipate that it will be challenging and present opportunities to have their lower ability levels and limited knowledge exposed. Consistent with the Implicit Theory model, students with fixed mindsets showed significant decreases in their self-esteem during these challenging transitions to college (Robins & Pals, 2002). Relatedly, a study investigated how an undergraduate student's implicit mindset related to his/her feelings of helplessness and self-efficacy beliefs when being placed in challenging "underdog" scenarios (Davis et al., 2011). Participants' ($N = 165$) implicit mindsets were measured on the fixed versus growth continuum and each participant was placed either in "underdog" or "top dog" manipulated groups. "Underdog" groups were informed they would be competing in a math competition against peers labeled as "elite" from a prestigious university.

The researchers found that participants in the "underdog" group, that endorsed having a fixed mindset, had significantly higher levels of helplessness and lower levels of self-efficacy (Davis et al., 2011). Conversely, participants in the "underdog" group, that endorsed a growth mindset, had significantly higher levels of self-efficacy and less feelings of helplessness when compared with their "underdog" peers with fixed mindsets (Davis et al., 2011). Finally, a study that investigated the implicit mindsets of high school students found that having a fixed mindset significantly predicted truancy and academic self-handicapping (De Castella & Byrne, 2015), two effects commonly linked to stereotype threat. Considering these findings, the current study assumes that a student's mindset will play a significant role in how the effects of stereotype threat are experienced in academic environments.

A student's mindset, or his/her implicit theory of personal traits and characteristics, plays a significant role in how the effects of stereotype threat are experienced and can buffer against diminishing self-efficacy in academic environments (Yaeger & Dweck, 2012). In connection with Stereotype Threat Theory, Steele (1997) found that when marginalized students developed a growth mindset of intelligence it served as a buffer against the negative effects of stereotype threat, such as disengagement, deidentification, self-handicapping, and diminished academic performance. For example, research found that African American students had lower levels of academic satisfaction and poorer academic performance when they endorsed high levels of stereotype threat combined with having a fixed mindset (Aronson et al., 2002). In the same study, interventions aimed to foster a growth mindset within African American participants improved their academic performance and they were more likely to report higher levels of academic satisfaction over time (Aronson et al., 2002). In terms of disengagement and deidentification, Burkley et al. (2010) found that women endorsing a fixed mindset were more

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likely to disengage from math environments and avoid pursuing math-related careers. This finding supports the idea that when an individual is confronted with stereotype threat (e.g., women being less capable than men in STEM-related fields) his/her mindset plays a critical role in how they respond to that threat, and potentially how valid he/she perceives the threat. Therefore, experiencing stereotype threat alone may not be enough to explain the diminished persistence, lower self-efficacy levels, and withdrawal behaviors of individuals within the postsecondary domain and applying this secondary theory seems essential and appropriate when attempting to understanding the experiences of students with disabilities.

Most negative stereotypes about individuals with disabilities are directly ability-related (e.g., intellectual incompetence; dependency). Following the Implicit Theory model, students with disabilities endorsing a growth mindset would be less apt to internalize these harmful stereotypes following failures or challenges that occur within the academic environment and would continue to persist towards their goals. Therefore, examining an individual's implicit growth theory may help explain why certain individuals experience the harmful effects of stereotype threat at greater levels and provide insight into potential interventions that might help individuals change their mindset to buffer the negative relationship between stereotype threat, self-efficacy, and persistence. If a significant moderating effect is found in the current study, these results would encourage educators and academic environments to make a conscious effort to endorse growth mindsets in their teaching strategies, attitudes, and behaviors. This would be especially important for students from marginalized groups that are statistically underrepresented and believed to be inherently "less capable" within these environments.

The Present Study

The purpose of the study is to develop an understanding of the level of stereotype threat

students with diagnosed disabilities experience in postsecondary education domains. Specifically, the current study will evaluate stereotype threat as a predictor of academic self-efficacy, coping self-efficacy, social self-efficacy, and persistence intentions. The model will include campus climate as a control variable and will be analyzed for exploratory purposes. Congruent with research findings which have investigated how one's implicit mindset (Dweck & Elliot, 1983) can buffer the negative effects of stereotype threat, the study will investigate the buffering effect one's mindset has on the relationships between stereotype threat, academic self-efficacy, and persistence intentions. The study will be guided by the following research questions:

Research question 1: What are the relationships among stereotype threat, an individual's implicit mindset, academic self-efficacy, coping self-efficacy, social self-efficacy, and persistence intentions for students with disabilities?

Research question 2: To what extent does one's implicit mindset influence the relationships between stereotype threat, academic self-efficacy beliefs, and persistence intentions?

Consistent with past research which has investigated the effects that stereotype threat and campus climate have on students with marginalized identities' self-efficacy beliefs, implicit mindsets, and persistence intentions, four hypotheses are proposed:

Hypothesis 1: Academic Self-Efficacy will mediate the relationship between Stereotype Threat and Persistence Intentions.

Hypothesis 2: Coping Self-Efficacy will mediate the relationship between Stereotype Threat and Persistence Intentions.

Hypothesis 3: Social Self-Efficacy will mediate the relationship between Stereotype

Threat and Persistence Intentions.

Hypothesis 4: Endorsing a Growth Mindset will buffer the negative indirect

relationship between Stereotype Threat, Campus Climate, and Persistence Intentions

that operates through Academic Self-Efficacy.

A conceptual diagram of the moderate mediation model is presented below in Figure 1. Results from this study hope to aid post-secondary environments in the development of specific cultural trainings and workshops geared towards instructors, professors, staff, and the entire student body to improve the academic environment, graduation rates, and persistence intentions of students with disabilities.
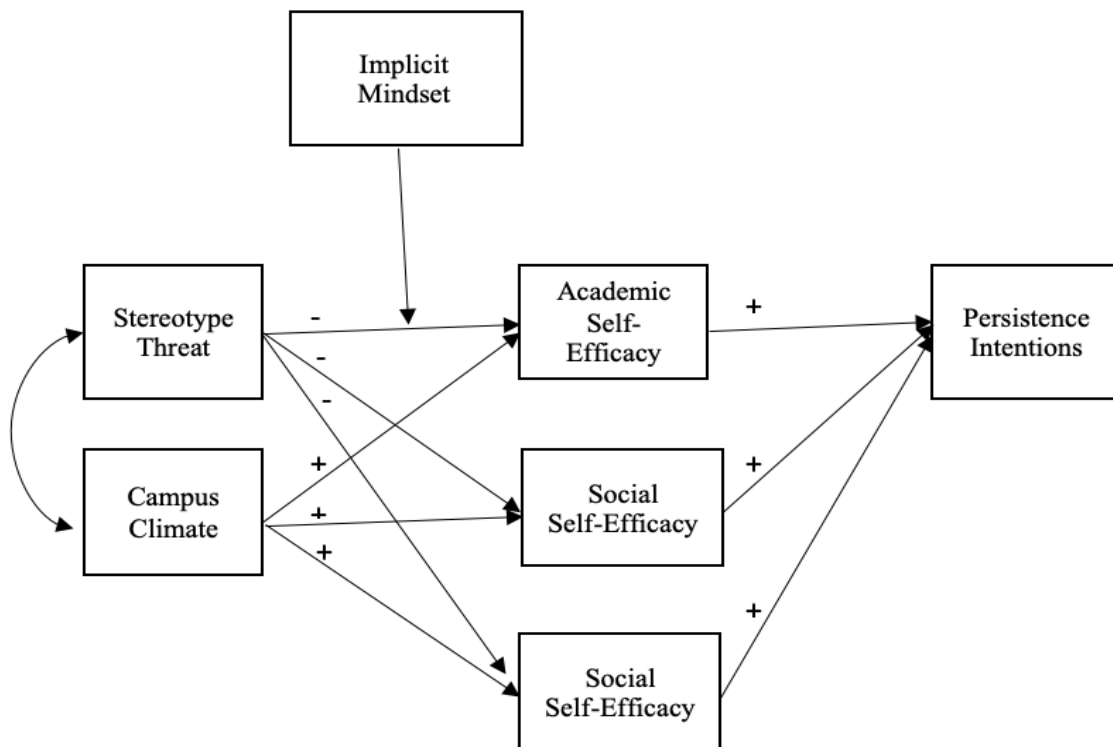

Figure 1. Conceptual model of the study design. Hypothesized valences of the main effect relationship are denoted by +/- symbols.

Method

Power Analysis

A Monte Carlo simulation was conducted to estimate the sample size needed to detect significant effects. Given that there is no prior research on either the moderated mediation model or the coping and social self-efficacy mediators in the present study, I aimed to determine the power needed to detect a significant effect of stereotype threat on persistence intentions via academic self-efficacy (i.e., hypothesis 1). The power analysis and all hypothesis tests were performed using M*plus* 7.4 (Muthén & Muthén, 1998-2015) statistical software. The path coefficients for the power analysis were obtained from the literature and the simulation was performed on 500 randomly generated data sets. The effect of stereotype threat on science self-efficacy (Deemer, Thoman, Chase, & Smith, 2014) was used as a proxy for the hypothesized stereotype threat-academic self-efficacy relationship. Similarly, the effect of academic major satisfaction on persistence (Wierzchowski, 2019) was used as a proxy for the hypothesized relationship between science self-efficacy and persistence. Deemer et al. (2014) obtained a coefficient of -.28 for the relationship between science self-efficacy and stereotype threat but a coefficient of -.26 was used because stereotype threat is likely to be a slightly weaker predictor of academic self-efficacy than science self-efficacy. Wierzchowski (2019) obtained a standardized coefficient of .53 for the relationship between academic satisfaction and persistence. Using these estimates with a simulation sample size of 135 produced a power estimate of 81% to detect a significant indirect effect of stereotype threat on persistence via academic self-efficacy. The mean RMSEA was .029, the mean SRMR was .027, and the mean χ^2 value was 4.23 (df =4). Thus, a sample size of 135 was determined to be sufficient for the analysis.

Participants

The target population included undergraduate students ($N = 156$) who identified as having one or multiple diagnosed disabilities. Convenience sampling was used to recruit undergraduate students who were willing to volunteer and met inclusion criteria to participate in the study. Participants were recruited through the registrar's office at Purdue University as well as the Disability Resource Center. Study demographics are included in Table 1.

Table 1. Demographic Characteristics of the Sample

Demographic Information	*n*	Frequency
Gender		
Woman	94	60.3%
Man	49	31.4%
Genderqueer	4	2.6%
Trans-man	3	1.9%
Gender non-conforming	3	1.9%
Gender not listed	2	1.3%
Prefer not to answer	1	.6%
Disability Type		
Mental Health (MH)	44	28.2%
Specific Learning (LD)	40	25.6%
Chronic Health	28	17.9%
LD + Mental Health	19	12.2%
Vision or Hearing	9	5.8%
Autism Spectrum Disorder (ASD)	9	5.8%
LD + Chronic Health	4	2.6%
Mobility Impairment	3	1.9%
Race/Ethnicity		
White	120	76.9%
Asian	13	8.3%
Multiracial	10	6.4%
LatinX	8	5.1%
African American	1	.6%
Indo-Caribbean	1	.6%
Native American	1	.6%
Middle Eastern	1	.6%
Not answered	1	.6%
Sexual Identity/Orientation		
Heterosexual	92	59.0%
Bisexual	36	23.1%

Table 1. Continued

Gay or Lesbian	9	5.8%
Asexual	6	3.8%
Pansexual	4	2.6%
Prefer not to answer	4	2.6%
Sexual orientation not listed	3	1.9%
Questioning	2	1.3%
Student Year in School		
First Year	27	17.3%
Sophomore	46	29.5%
Junior	36	23.1%
Senior	37	23.7%
Senior +	10	6.4%
Major/College		
College of Engineering	45	28.8%
College of Science	26	16.7%
College of Health and Human Sciences	25	16.0%
College of Liberal Arts	19	12.2%
Purdue Polytechnic	12	7.7%
College of Agriculture	10	6.4%
Krannert School of Management	7	4.5%
College of Education	5	3.2%
Exploratory Studies	3	1.9%
College of Pharmacy	3	1.9%
College of Veterinary Medicine	1	.6%
Served in Armed Forces		
No	155	99.4%
Yes	1	.6%

Note. $N = 156$

Measures

The following section includes a description of the measurements used in the current study. Additionally, the psychometric properties reported in past literature are described and included.

Demographic Questionnaire

Participant demographic information was collected using a 10-item demographic questionnaire (see Appendix A). The questionnaire included: gender, sexual orientation, age, race/ethnicity, university status/academic year, academic major, disability-type, and if the student was a current or past member of the armed forces. Rather than identify a specific academic major, participants selected the college in which their major resides using Purdue's Colleges and Schools catalog. Participants selected from pre-generated choices for each of the demographic items except disability-type and race. Participants identified their disability-type and race using a free-response option. Free-response items were eventually coded into categories prior to the quantitative analysis.

Stereotype Threat

Perceptions of stereotype threat were measured using an adapted version of the Stereotype Threat in Science Scale (STSS; Deemer et al., 2016). The STSS is a 11-item scale using a four-point Likert type scale ranging from 0 (*never*) to 3 (*frequently*) (see Appendix B). Three items from the identity threat subscale were selected and adapted to measure stereotype threat in the current study. The original scale was developed to measure the experiences of perceived gender and racial stereotype threat within STEM environments; however, the scale was adapted to reflect the experiences of stereotype threat for students with disabilities in post-secondary environments. An example of an adapted item, "I am afraid of confirming the stereotype that students with disabilities do not have the skills to be successful in their undergraduate education", modified from the original item, "I am afraid of confirming the stereotype that women do not have the skills to be STEM professionals" (Deemer et al., 2016). The original scale-development study (Deemer et al., 2016) found scores on the STSS were significantly correlated with an individual's identity as a scientist and intentions to persist in

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STEM fields. In the same study, the STSS demonstrated concurrent validity demonstrated by a positive relation with identity threat (β = .75, p = .001) as a positive predictor of stereotype threat, and construct validity represented by the high factor loadings found within a factor analysis. I estimated an internal consistency of α = .91 in the current study.

Mindset of Intelligence

The Theories of Intelligence Scale (TIS) is an eight-item scale measuring individuals' mindsets on a continuum (i.e., entity/fixed versus incremental/growth) using a six-point Likert type scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*) (Dweck et al., 1995; Dweck, 1999) (see Appendix D). An example item is, "I have a certain amount of intelligence and I really can't do much to change it" (Dweck et al., 1995). Dweck et al. (1995) estimated an internal consistency of α = .94 in their original study. Dweck (1999) indicated good discriminate validity showing that scores were unaffected by variables such as academic self-confidence and self-efficacy beliefs. Yaeger and Dweck (2012) investigated how a student's mindset, measured by the TIS, related to academic outcomes during the transition to high school and found that having a fixed mindset was significantly correlated with lower GPAs and final grades in mathematics. The authors estimated an internal consistency of α = .72 for this study (Yaeger & Dweck, 2012). Additionally, De Castella and Byrne (2014) found that high school students that endorsed a fixed mindset on an adapted version of the TIS predicted academic disengagement and truancy. We estimated an internal consistency of α = .95 in the current study.

Self-Efficacy

The Self-Efficacy Scale developed by Lent and colleagues (2005) is a 24-item scale that assesses participants' confidence to perform both academically and socially using a ten-point

Likert type scoring scale. The Academic Self-Efficacy subscale is a five-item scale that assesses participants' confidence in their ability to perform academically in the college environment (Lent et al., 2005a) (see Appendix E). An example of an academic performance-based item is, "how much confidence do you have in your ability to excel in your intended major over the next two semesters" (Lent et al., 2005a). Participants select their confidence level using a ten-point Likert type scoring scale, ranging from 0 (*no confidence*) to 9 (*complete confidence*). The study investigated the experiences of women in STEM majors and found that academic self-efficacy correlated with positive outcome expectations, positive goals related to their major choice, and high levels of interest and motivation towards completing tasks major-related tasks (Lent et al., 2005b). Lent et al. (2005b) estimated an internal consistency of $\alpha = .91$(academic self-efficacy). We estimated an internal consistency of $\alpha = .85$ in the current study.

Academic coping self-efficacy was measured using a seven-item subscale intended to measure a student's perceived ability to cope with academic struggles that typically arise during postsecondary education attainment (see Appendix E). An example item for a coping-based item is, "How much confidence do you have in your ability to cope with a lack of support from professors or your advisor" (Lent et al., 2005a). We estimated an internal consistency of $\alpha = .85$ for the Academic Coping Self-Efficacy subscale in the current study.

Social self-efficacy was measured using the 12-item subscale (see Appendix E). Example items are, "how much confidence do you have in your ability to start up a conversation with a stranger?" and "how much confidence do you have in your ability to disclose information about yourself to a new acquittance?" (Lent et al., 2005a). The developers of the scale reported a moderate internal consistency of $\alpha = .80$. Lent et al. (2005a) found that scores on the measure correlated with positive outcome expectations, life satisfaction, domain satisfaction, and positive

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affect. In the previous study, the researchers reported estimated high internal consistency of α = .89 (social self-efficacy). We estimated an internal consistency of α = .91 in the current study.

Campus Climate

The General Campus Climate (GCC), Racial Climate, Racial Experiences and University Perceptions subscales for undergraduate students were adapted and used to measure participants' perceptions of the postsecondary environment (Reid & Radhakrishnan, 2003). Each subscale is measured by assessing participants' degree of agreement using a seven-point Likert-type scale ranging from 1 (*strong agreement*) to 7 (*strong disagreement)* (see Appendix C)*.* The GCC includes four items that assesses a student's general perception of the university. An example item is "I have found the atmosphere at this university to be very friendly". Reid and Radhakrishnan (2003) estimated an internal consistency of α = .76 for the GCC subscale. The Racial Climate subscale includes items that are intended to capture experiences of racism and the participant's perception of the university's commitment to diversity-related issues. Examples of adapted items include: "I have experienced insensitivity of my disability from other students/faculty," "In my opinion, this campus is more insensitive to disability than most," and "The university has made a special effort to help students with disabilities to feel like they 'belong' on campus." Reid and Radhakrishnan (2003), measured the responses of undergraduate participants and estimated an internal consistency of α = .70 and α = .76 for the Racial Climate and University Perceptions subscale, respectively. I estimated an internal consistency of α = .85 in the current study.

Persistence Intentions

The Intentions to Persist Scale (Lent et al., 2007) was developed to help predict students' academic withdrawal behaviors and attrition intentions through four-items that use a nine-point Likert type scale ranging from 0 (*strongly disagree*) to 9 (*strongly agree*) (Lent et al., 2007) (see Appendix F). Example items include: "I think that earning a bachelor's degree is a realistic goal for me," and "I am fully committed to completing my college degree." Lent and colleagues (2007) found that this measure was a strong predictor of an undergraduate student's actual persistence in their major (engineering). The original study estimated an internal consistency of α = .90 (Lent et al., 2007).

Research Design & Data Analysis

To answer the research questions, I used a cross-sectional, nonexperimental moderated mediation model design. All constructs in the model were estimated as observed variables and the mediation hypotheses were tested in a path analysis framework using a weighted least square mean- and variance-adjusted (WLSMV) estimator. The model specifically examined the moderating role of an individual's implicit mindset in the relationship between stereotype threat and persistence intentions via academic self-efficacy. Academic self-efficacy, coping self-efficacy, and social self-efficacy represented mediators and campus climate represented a control variable in the moderated mediation model. For exploratory purposes, I examined how well campus climate predicted academic self-efficacy, coping self-efficacy, and social self-efficacy.

I used five indices of model fit including: model chi-square test, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). The CFI is an incremental fit index with values ranging from 0 to 1, with CFI = .95 indicating good fit and CFI = 1 indicating best fit (Hu & Bentler, 1999). Similar to the CFI, TLI is an incremental fit index, corrected for parsimony,

with values ranging from 0 to 1, with TLI = .95 indicating good fit. RMSEA values range from 0 to 1 with scores ≤ .06 being the cutoff for good model fit (Hu & Bentler, 1999). SRMR is a residual-based fit index with values ≤ .08 being considered a good fit and ≤ .10 being acceptable (Hu & Bentler, 1999). Conducting these proposed fit analyses ensured that any conclusions drawn from the model were valid.

I then conducted a path analysis to investigate the relationship among the observed variables (Wang et al., 2012). Persistence was regressed on the parallel mediators of academic self-efficacy, coping self-efficacy, and social self-efficacy. Academic self-efficacy, coping self-efficacy, and social self-efficacy were then regressed on stereotype threat, and campus climate for exploratory purposes. I then examined the mediation model to determine if indirect effects were significant for the paths from stereotype threat to persistence via the self-efficacy variables d) academic self-efficacy, and persistence intentions, (e) coping self-efficacy, and persistence intentions, and (f) social self-efficacy, and persistence intentions. Indirect effects were computed using MacKinnon et al.'s (2002) product of direct effect coefficients method. I used a bootstrapping procedure, generating 1,000 random samples from the dataset and computing 95% confidence intervals to determine if the indirect effects were statistically significant (Preacher & Hayes, 2008). I then introduced the moderator of implicit mindsets and determined if the indirect effects were significant at high and low levels (+/- 1 SD above and below the mean).

Procedure

The writer received Institutional Review Board (IRB) approval and recruited participants through the registrar's office and the disability resource center (DRC) at Purdue University via email. Undergraduate student participants were invited to complete a 52-item survey questionnaire. Estimated time of completion of the survey is between 10 to 15 minutes. The

recruitment email (see Appendix G) provided inclusion criterion, and the questionnaire link.

Data was gathered using the Qualtrics online-survey system. Interested participants were directed

to the study and demographic survey following the completion of an informed consent form (see

Appendix H). From there, participants were either directed to the questionnaire or the end of the

survey based on whether they identified as having one or more disabilities within the

demographic survey. Participants who identified as having a disability were then instructed to

complete four scales. The scales were randomized within the Qualtrics system so that the order

of scales presented to each participant varied. This randomization was designed to mitigate

threats to internal validity.

Inclusion Criteria

To be eligible for the study, students must have been registered as an undergraduate

student at Purdue University, be 18 years or older, and self-identify as having one or more

diagnosed disabilities. Since this study is exploratory in nature, students with all disability types

were encouraged to participate and included in our study analysis. For this study, "disability"

was operationally defined using the Individuals with Disabilities Education Act (IDEA), which

defines disability as: a physical or mental condition that impairs or limits participation in at least

one major life activity (IDEA, 2019). Participants were asked to disclose their disability-types

using a free-response survey method. The participants' disclosed disability-types which were

later coded in collaboration with a staff member from the university's Disability Resource

Center.

Results

Data Screening

A total of 559 students responded to the recruitment email. Of the total respondents, 359 were removed for failing to identify as having a diagnosed disability. Of the remaining participants ($N = 200$), we removed participants who only provided demographic data ($n = 28$), had significant amount of missing data ($n = 6$), and participants who did not correctly answer two validity items embedded within two study scales ($n = 10$), leaving a final sample size of 156 participants. There were no outliers detected given that scores on each variable did not exceed 3.29 *SD*s above or below their means (Field, 2013).

I investigated normality for each of the study variables and found that no variables had absolute values of skewness and kurtosis greater than one, except persistence. Stereotype threat, mindset of intelligence, academic self-efficacy, academic coping self-efficacy, social self-efficacy, and campus climate appeared normally distributed based on inspection of histograms and box plots (skewness = -.37, -.60, -.92, -.30, -.17, and -.58, respectively; kurtosis = -.84, -.49., .65, .08, -.89, and .02, respectively). However, persistence appeared to be negatively skewed (skewness = -2.64; kurtosis = 7.39) due to 111 participants having a score of 30. Therefore, I transformed persistence into a binary variable where scores of 30 were coded as 1 and all other scores were coded as 0. The weighted root mean square residual (WRMR) was used as a fit index instead of the SRMR because the SRMR cannot be used with categorical variables. WRMR values of 1.0 or less are considered acceptable, with lower values indicating better model fit (Yu, 2002).

A total of 96% of participants ($N = 150$) had no missing data. We analyzed patterns of missing data using a dummy coded variable to represent participants with and without missing

data. I then correlated the dummy coded variable to the study demographics and each study variable. The dummy coded variable was not significantly related to any of the study demographics nor study variables. Therefore, I determined that cases with missing values were missing at random (MAR). Thus, missing data were estimated with full-information maximum likelihood using the expectation maximization algorithm (Enders, 2010) during the primary analyses.

Bivariate scatterplots were generated and visually analyzed and determined to meet assumptions of linearity and homoscedasticity. Finally, to assess for multicollinearity, I analyzed collinearity diagnostics of each independent variable in relation to the dependent variable. The analysis indicated no tolerance statistics below the 0.10 threshold. Therefore, I determined there were no issues of multicollinearity (Field, 2009). The tolerance values of each independent variable ranged from .50 to .85.

Preliminary Analysis

Prior to our primary analysis we first examined measures of central tendency and descriptive statistics which are displayed in Table 2.

Table 2. Descriptive Statistics of Study Variables

Variable	Observed Score Range	M	SD	α
Stereotype Threat	3-12	8.20	2.51	0.91
Mindset of Intelligence	11-48	34.25	9.06	0.95
Academic Self-Efficacy	14-50	40.99	7.63	0.85
Coping Self-Efficacy	8-70	47.35	11.49	0.85
Social Self-Efficacy	25-117	77.13	22.33	0.91
Campus Climate	19-75	54.03	11.60	0.85
Persistence	16-30	28.80	2.49	-

N = 156

Correlations

Correlations among the eight study variables are displayed in Table 3. Stereotype threat significantly related to campus climate ($r = -.37$, $p < .001$), academic self-efficacy ($r = -.34$, $p < .001$), coping self-efficacy ($r = -.40$, $p < .001$), and social self-efficacy ($r = -.24$, $p < .01$) but was not significantly related to mindset of intelligence ($r = -.12$, $p = .15$) or persistence ($r = -.04$, $p = .59$). Mindset of intelligence significantly related to academic self-efficacy ($r = .22$, $p < .01$), coping self-efficacy ($r = .25$, $p < .01$), and social self-efficacy ($r = .19$, $p = .02$) but did not significantly relate to persistence ($r = .14$, $p = .09$), or stereotype threat ($r = -.12$, $p = .15$). Campus climate significantly related to mindset of intelligence ($r = .35$ $p < .001$), academic self-efficacy ($r = .27$, $p < .01$), academic coping self-efficacy ($r = .38$, $p < .001$), social self-efficacy ($r = .31$, $p < .001$), and persistence ($r = .16$, $p = .04$).

Table 3. Bivariate Correlations Between Variables

	1	2	3	4	5	6	7
1. Stereotype Threat	-						
2. Campus Climate	-0.37**	-					
3. Intelligence Mindset	-0.12	0.35**	-				
4. Academic Self-Efficacy	-0.34**	0.27**	0.22**	-			
5. Coping Self-Efficacy	-0.40**	0.38**	0.25**	0.54**	-		
6. Social Self-Efficacy	-0.24**	0.31**	0.19**	0.21**	0.49**	-	
7. Persistence	-0.04	0.16*	0.14	0.52**	0.15	0.09	-

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

I then conducted a one-way multivariate analysis of variance (MANOVA) to examine if there were differences in each of our study variables based on year in school (e.g., first year; senior). Participants were categorized into five grade-level groupings: first-year ($n = 27$), sophomore ($n = 46$), junior ($n = 35$), senior ($n = 36$), senior + ($n = 10$). Results revealed no

significant differences between grade level and scores on each of the study variables, Pillai's

Trace $V = .241$, $F(32, 580) = 1.16$, $p = .25$, partial $\eta^2 = .06$.

Finally, I conducted an independent samples t-test to examine if there were differences in

each of our study variables based on participants' reported gender. Participants were categorized

into two groupings based on self-report: man ($n = 49$), woman ($n = 107$). Due to low response

rate of genders other than man and woman, non-binary ($n = 10$) and transgender participants ($n =$

3) were not included in the gender analysis. Results from the independent samples t-tests

revealed significant group differences between men and women on stereotype threat, $t(153)=$-

4.47, $p < .001$, and campus climate $t(154)=3.75$, $p < .001$. Table 4 portrays the mean differences

between men and women on each study variable.

Table 4. Descriptive Statistics Grouped by Gender

	Man		Woman		Mean Difference	
Variable	M	SD	M	SD	T	P
Stereotype Threat	6.88	2.54	8.80	2.26	-4.74	< .001
Campus Climate	58.98	10.30	51.77	11.51	3.75	< .001
Academic Self-Efficacy	42.02	7.84	40.52	7.53	1.13	.260
Coping Self-Efficacy	51.41	11.91	45.49	10.85	3.07	.003
Social Self-Efficacy	84.20	20.62	73.90	22.43	2.73	.007
Mindset of Intelligence	34.90	9.32	33.95	8.96	.60	.547
Persistence Intentions	28.87	2.28	28.77	2.60	.26	.797

Analysis of Hypothesized Mediation Model

The hypothesized mediation model was estimated whereby the dependent variable of

persistence was regressed onto the efficacy mediators, which were in turn regressed on campus

climate and stereotype threat. The simple mediation model showed poor fit to the data, $\chi^2(7, N =$

156) = 52.01, $p < .001$, CFI = .73, RMSEA = .20 (90% CI: .15, .26), TLI = .19, WRMR = 1.19.

The predictors explained 39% of the variance in persistence, 14% of the variance in academic self-efficacy, 19% of the variance in coping self-efficacy, and 9% of the variance in social self-efficacy.

Direct Effects

Stereotype threat was a significant negative predictor of academic self-efficacy ($\beta = -.24$, $p < .01$) and coping self-efficacy ($\beta = -.31$, $p < .001$). Academic self-efficacy was also a significant positive predictor of persistence intentions ($\beta = .63$, $p < .001$) and mindset of intelligence ($\beta = .22$, $p < .01$).

Stereotype threat was unrelated to social self-efficacy ($\beta = -.14$, $p = .07$), which in turn was unrelated to both persistence intentions ($\beta = .04$, $p = .63$) and stereotype threat ($\beta = -.14$, $p = .07$). Coping self-efficacy was shown to be unrelated to persistence intentions ($\beta = -.02$, $p = .85$). The direct effects discussed within this section are represented in Table 5 and Figure 2.

For exploratory purposes we analyzed the direct effects of campus climate on our outcome variable of persistence and each of the mediating variables. The results revealed that campus climate was a significant positive predictor of coping self-efficacy ($\beta = .21$, $p < .01$) and social self-efficacy ($\beta = .21$, $p < .01$), but campus climate was unrelated to academic self-efficacy ($\beta = .13$, $p = .14$).

Table 5. Direct Effects of Hypothesized Mediation Model

| Path	B	SE	P
To Persistence from:			
Academic Self-Efficacy	0.63	0.09	<.001
Coping Self-Efficacy	-0.02	0.12	0.85
Social Self-Efficacy	0.04	0.09	0.63
To Academic Self-Efficacy from:			
Mindset of Intelligence	0.22	0.08	0.006
Stereotype Threat	-0.24	0.09	0.007
Campus Climate	0.13	0.09	0.14
To Coping Self-Efficacy from:			
Stereotype Threat	-0.31	0.08	<.001
Campus Climate	0.21	0.09	0.014
To Social Self-Efficacy from:			
Stereotype Threat	-0.14	0.07	0.07
Campus Climate	0.21	0.08	0.006
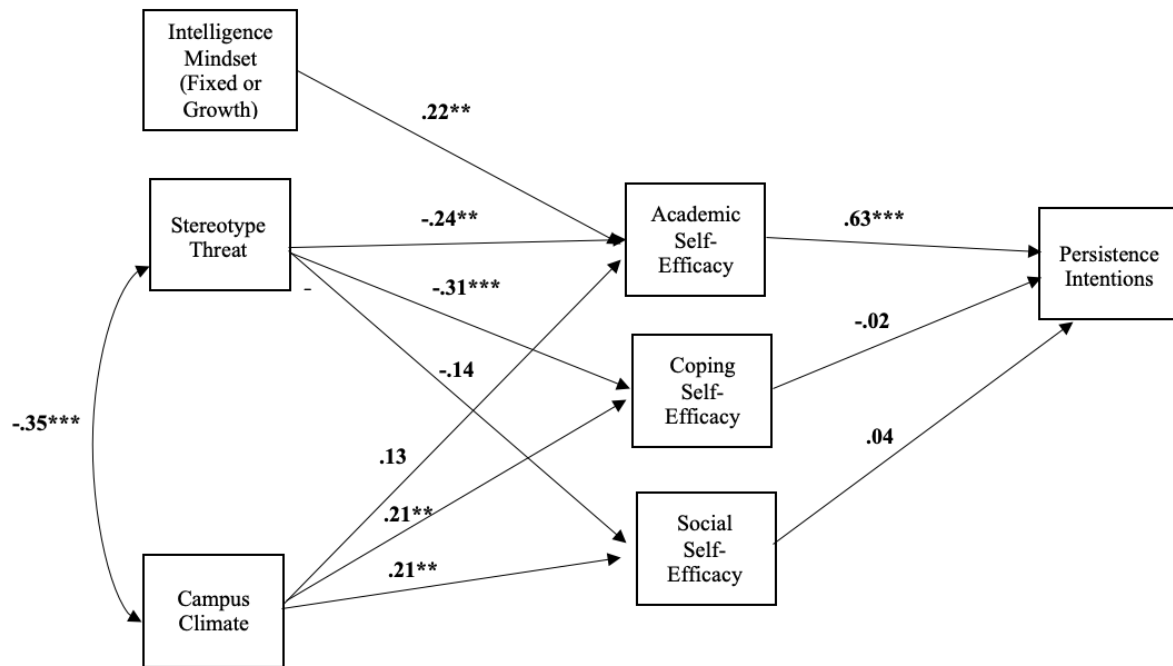
Figure 2. Structural Model of Simple Mediation Model with Standardized Path Coefficients.
Note. *** p < .001; ** p < .01; * p < .05

Indirect Effects

There was a significant indirect effect of stereotype threat on persistence intentions with academic self-efficacy as the estimated mediator, β = -.15 (p = .008, 95% *CI* = -0.26 to -0.05). Therefore, hypothesis one was supported. The indirect effect of stereotype threat on persistence intentions was not significant with either coping self-efficacy (β = .007, 95% CI = -0.07 to 0.09) or social self-efficacy (β = -.006, 95% CI = -0.04 to 0.02) as mediators. Thus, hypotheses two and three were not supported. The exploratory indirect effects involving campus climate and persistence intentions were not significant (see Table 6).

Table 6. Indirect Effects of Hypothesized Model

Indirect Effect	*Estimate*	*Lower 2.5%*	*Upper 2.5%*
Stereotype Threat→ Academic Self-Efficacy→ Persistence	-0.15*	-0.26	-0.05
Stereotype Threat→ Coping Self-Efficacy → Persistence	0.007	-0.07	0.09
Stereotype Threat→ Social Self-Efficacy→ Persistence	-0.006	-0.04	0.02
Campus Climate→ Academic Self-Efficacy→ Persistence	0.08	-0.04	0.21
Campus Climate→ Coping Self-Efficacy→ Persistence	-0.005	-0.05	0.06
Campus Climate→ Social Self-Efficacy→ Persistence	0.009	-0.02	0.07

Note. *95% bias-corrected confidence interval for the parameter estimate does not contain zero.

Analysis of Moderated Mediation Model

To test hypothesis four the mediation model was re-estimated with mindset of intelligence as a moderator in the relationship between stereotype threat and academic self-

efficacy. Adding this interaction term to the model resulted in poor fit to the data, χ^2 (15, $N =$ 156) = 84.56, $p < .001$. Other model-fit tests revealed poor model fit: CFI = .60, TLI = .28, RMSEA = .17 (90% CI: .14, .21), WRMR = 1.40. As Figure 3 indicates, the interaction between stereotype threat and mindset of intelligence in predicting academic self-efficacy was not significant ($\beta = -.02$, $p = .82$). Thus, our hypothesis that mindset of intelligence would moderate the mediated relationship between stereotype threat and academic self-efficacy was not supported. The predictors in the moderated mediation model explained 41% of the variance in persistence, 32% of the variance in academic self-efficacy, 69% of the variance in coping self-efficacy, and 18% of the variance in social self-efficacy.
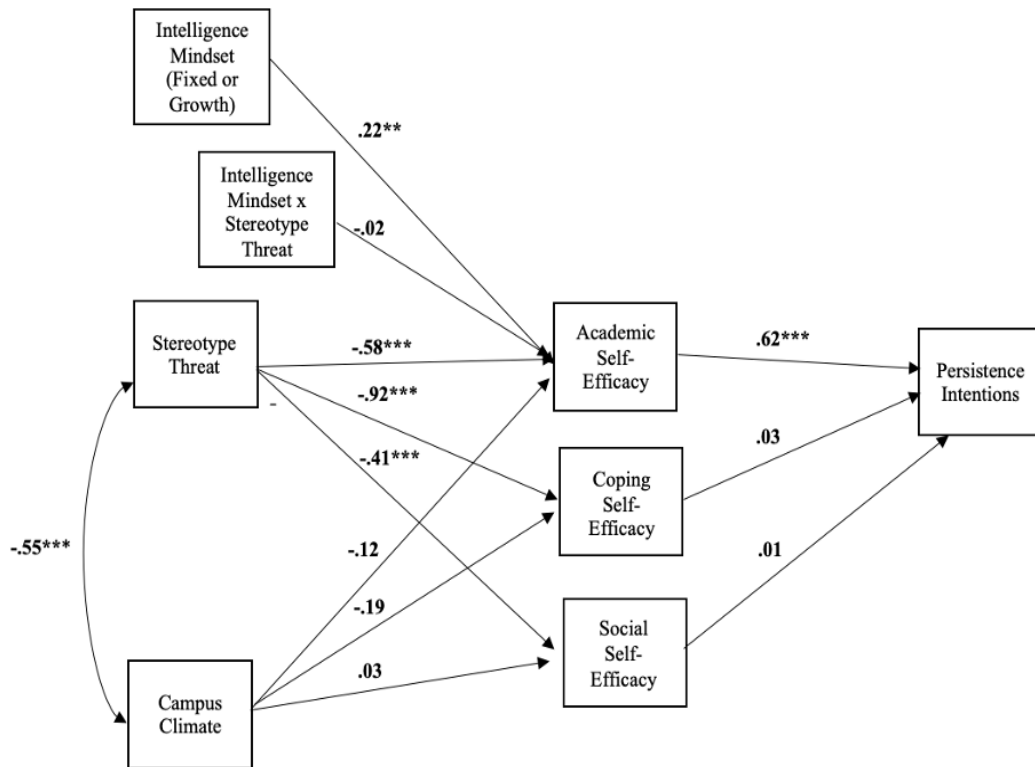

Figure 3. Structural Model of Moderated Mediation Model with Standardized Path Coefficients.
Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Discussion

The purpose of the study was to gain an understanding of the level of stereotype threat that students with diagnosed disabilities experience within a postsecondary environment. Specifically, the current study evaluated stereotype threat as a predictor of academic self-efficacy, coping self-efficacy, social self-efficacy, and persistence intentions. Additionally, the purpose of the study was to examine if one's mindset of intelligence significantly moderated the mediated relationship between stereotype threat, academic self-efficacy, coping self-efficacy, social self-efficacy, and persistence intentions, while controlling for campus climate perceptions.

The expected findings were meant to expand the Social Cognitive Career Theory of Career Self-Management (SCCT-CSM; Lent & Brown, 2013) theory by uncovering mindset of intelligence as an adaptive belief that moderates the negative relationship between stereotype threat and academic self-efficacy. Lent and Brown (2019) conducted a meta-analysis of all SCCT-CSM research and found an absence of research that investigated and tested moderators using the SCCT-CSM framework. Past research has found few significant moderation results within the SCCT-CSM model. However, past research found that perceived social status moderated the relation between self-efficacy and persistence intentions of college students of color (Her & Thompson, 2021), and personality traits such as conscientiousness and extraversion (Lent & Brown, 2013) moderated the relation between self-efficacy and persistence in career goal pursuits. Therefore, this research sought to investigate and analyze an individual's implicit mindset as a moderating factor that helps one maintain self-efficacy beliefs and persistence intentions in the face of negative contextual environmental factors such as stereotype threat and poor campus climates.

First, I predicted a negative indirect relationship between stereotype threat and persistence intentions through the mediating effects of three types of self-efficacy. The study

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results supported my first hypothesis that academic self-efficacy would significantly mediate the relationship between stereotype threat and persistence intentions. It seems that stereotype threat leads to a reduction in academic self-efficacy, and although academic self-efficacy was a positive predictor of persistence intentions, the effect of academic self-efficacy on persistence intentions is likely to be weaker with stereotype threat as an antecedent. This finding supports previous literature which found positive relations between academic self-efficacy and persistence intentions and negative relations between stereotype threat and academic self-efficacy (Usher & Pajares, 2009; Fichten et al., 2014a; Spencer et al., 2016). Additionally, this finding supports previous literature which found a significant relation between stereotype threat, academic self-efficacy, and persistence intentions of other minority identities (Aronson et al., 2002; Gloria & Ho, 2003; Gloria et al., 1999).

The study results did not support my second or third hypotheses that coping self-efficacy and social self-efficacy would significantly mediate the relationship between stereotype threat and persistence intentions, respectively. The current results revealed that high levels of perceived stereotype threat were associated with lower levels of coping self-efficacy and social self-efficacy. However, our results did not support our hypotheses that these mediating factors would significantly influence participants' intentions to persist or withdraw from the academic environment. These findings are inconsistent with past literature that found social self-efficacy to be a positive predictor of postsecondary persistence in students with disabilities (Fichten et al., 2014b; Hartley, 2013). Additionally, these findings contradict past literature that found intrapersonal resilience, or the ability to cope with adversity, was a significant factor in predicting the persistence of postsecondary students with disabilities (Hartley, 2013). A possible explanation for these findings may be that nearly 40% of the study sample identified as having at

least one diagnosis of a specific learning disability. Considering that the population was sampled from an academically rigorous research institution, the participant population might have placed a higher level of attention on their academic achievement and academic skills, rather than their social or intrapersonal skills while reflecting on their persistence intentions. Furthermore, stereotype threat in the current study was specifically measured using academia as the threatening domain and these items assessed participants' perceptions of their academic performance being stigmatized rather than their social performance. Similarly, persistence intentions were measured using three items that assessed a participants' willingness to continue to engage academically rather assessing a participant's overall experience of being a college student. These findings indicate that although students' social self-efficacy and coping self-efficacy negatively correlated with stereotype threat, it was irrelevant to their academic persistence. It may be that students with disabilities continue to persist academically while simultaneously experiencing lower levels of academic satisfaction or psychological well-being because of lower social self-efficacy and coping self-efficacy beliefs. Therefore, future research should investigate the relationship between stereotype threat, social self-efficacy, and outcome variables such as academic satisfaction or psychological well-being rather than persistence intentions. Furthermore, studies should investigate psychological well-being as a mediator between social self-efficacy, coping self-efficacy, and the persistence intentions of students with disabilities.

An additional unforeseen explanation for the non-significant relationship between social self-efficacy and persistence intentions may be the unexplored effect of the COVID-19 pandemic. The participant data were collected during the 2020-21 academic year when undergraduate students across the country were encouraged or mandated to avoid social

gatherings and to adhere to strict social distancing guidelines on college campuses. Additionally, many university-sponsored social events were canceled for the entirety of the 2020-21 academic year. Therefore, it is likely that students did not have typical opportunities to develop their social self-efficacy beliefs and the primary focus of their college experience may have shifted entirely to academics. There is currently no research to support that COVID-19 safety protocols directly impacted individuals' academic persistence intentions or indirectly impacted their social self-efficacy. However, one study found that COVID-19 safety protocols had a significant negative indirect relationship with academic self-efficacy beliefs for undergraduate students (Talsma et al., 2021). Therefore, future research should attempt replicate the current study while including the impact of COVID-19 as an environmental factor within the model.

Second, I hypothesized that one's mindset of intelligence would moderate the negative indirect relation between stereotype threat and persistence intentions that operate through academic self-efficacy. However, this hypothesis was not supported by the study results. This finding contradicts previous studies which found that mindset of intelligence significantly reduced the negative effects of stereotype threat and significantly correlated with higher academic self-efficacy and persistence intentions when studied in other minority groups (Aronson et al., 2002). Results of the simple mediation analysis revealed that endorsing a growth mindset was a positive main effect predictor of academic self-efficacy. However, no significant effect was detected when mindset of intelligence interacted with stereotype threat in predicting academic self-efficacy. Thus, although the participants generally endorsed high levels of a growth mindset, this did not weaken the indirect effect of stereotype threat on persistence intentions. This result contradicts previous studies which found that having a growth mindset buffered the negative effects of stereotype threat on academic self-efficacy (Aronson, 2002).

Because many stereotypes about individuals with disabilities are related to being dependent and academically incompetent (Louvet et al., 2009; Coleman et al., 2015; Descombre et al., 2018), it is possible that these stereotypes tend to have direct effects on students' intelligence beliefs rather than interactive effects with their beliefs about intelligence. Therefore, if a participant with a disability endorses experiencing high levels of stereotype threat, they may be more likely to experience a direct reduction in their belief of the malleability of their intelligence, rather than their mindset serving as a protective personal trait. Future research should therefore investigate the relationship between stereotype threat and persistence with mindset of intelligence re-conceptualized as a dependent variable, perhaps as a stand-alone outcome or as a mediator within a model similar to the one tested here.

Third, although the results only supported hypothesis 1, the zero-order correlation analysis provided additional support for my predications. For example, the correlation analysis revealed that higher levels of perceived stereotype threat were significantly related to endorsing lower levels of academic self-efficacy, coping self-efficacy, and social self-efficacy. This finding supports previous literature that found negative relations between stereotype threat and self-efficacy attitudes (Usher & Pajares, 2009; Spencer et al., 2016). Finally, the expectation that academic self-efficacy, coping self-efficacy, and social self-efficacy would positively predict persistence intentions was only supported for academic self-efficacy.

Finally, our exploratory analysis of campus climate as a covariate and predictor within the model revealed a significant correlation between campus climate and stereotype threat. Given that stereotypical cues arise within threatening environments (Steele, 1997; Steele & Aronson, 1995), it is reasonable to assume that campus climate may better serve as a predictor of stereotype threat rather than a direct predictor of self-efficacy beliefs and persistence intentions.

However, campus climate, broadly measured, may not provide the specificity needed for stigmatization of domain-specific abilities to occur. Future research should nevertheless examine the effect that campus climate perceptions have on stereotype threat.

Practical and Clinical Implications

There are many practical implications for university educators and faculty to address the findings of the current study. Our study is one of the few studies to apply stereotype threat theory to better understand the experiences of college students with disabilities. Our results indicate that stereotype threat is a psychological phenomenon that students with disabilities experience to a significant degree on college campuses. Acknowledging that students experience this phenomenon emphasizes that educators and faculty attitudes towards students with disabilities are crucial in either exacerbating or reducing the effects of stereotype threat. Past research has found that the simple act of educating students on stereotype threat was helpful in reducing its insidious effects (Merillat et al., 2018; Aronson, 2002). Therefore, I propose that universities develop trainings that educate university staff on stereotype threat and practical interventions that have proven to be affective in mitigating the harmful cognitive and psychological effects it has on students with disabilities. Verdinelli and Kutner (2016) indicated that students with disabilities were more likely to withdraw from traditional university settings and enroll in online programs primarily to preserve their academic self-efficacy and improve their overall well-being. Such findings indicate that traditional postsecondary environments need to change in order to foster positive self-efficacy beliefs. Many campuses are implementing diversity training modules and required educational training programs for students and educators to be completed annually. It may be beneficial to include training modules that include disability-related issues and educational material on specific disabilities for educators and peers to recognize their own

disability stereotype beliefs and to mitigate the induction of these attitudes into the campus climate. Such modules would potentially address biases and problematic behaviors that instructor's may be engaging in due to a lack of knowledge or awareness.

Another practical intervention for reducing the negative effects of stereotype threat is educating students on the nature of intelligence being malleable rather than a fixed inherited personal trait (Aronson et al., 2002). Although the current study found that a participant's mindset of intelligence did not buffer the negative relationship between stereotype threat and academic self-efficacy, Aronson and colleagues (2002) found that when students were educated on the malleability of intelligence they experienced less vulnerability to stereotype threat, performed better academically, and increased their academic satisfaction. A practical way of introducing the malleability of intelligence in the classroom is to explicitly introduce assignments, projects, and exams as opportunities to measure growth, and to emphasize these academic markers are challenges rather than evaluations of intelligence (Merillat et al., 2018). Alter (2010) found that even reframing stereotype threat as "a challenge to overcome" led to better academic outcomes for those who identify as having a minority identity. These strategies may be particularly important for students with disabilities because they are commonly perceived by peers and educators as having deficits and impairments (D'Amato et al., 2005), especially when it comes to academic capabilities and skills. Having undergraduate educators acknowledge the reality of stereotype threat and consistently remind students of the malleability of intelligence may be a way of reducing stereotype threat vulnerability of students with disabilities and disavowing deficit-oriented views that many have towards students with disabilities.

An important finding of the current study was that students with disabilities experienced lower academic self-efficacy in relation to increased stereotype threat. Therefore, it is critical for

students to have an outlet to explore this lowering self-confidence and increased negative beliefs about their academic capabilities. Unfortunately, it has been documented that counselors within university counseling centers are undertrained in disability-related concerns (Goad & Robertson, 2000) and many even hold deficit-oriented views towards individuals with disabilities (Smart, 2009). Olkin (2002) highlights that the field of psychology has historically ignored training nondisabled psychologists to work with clients with disabilities while simultaneously not recruiting students with disabilities into the counseling field. This is unfortunate since many counselors receive in-depth training of interventions that have been found to reduce the negative effects of stereotype threat. For example, Taylor and Walton (2011) found that when students engaged in values affirmation interventions they performed significantly better academically regardless of high exposure levels of stereotype threat. Additionally, Weger and colleagues (2012) found that when students were taught to engage in and practice mindfulness-based practices, they experienced significantly less stereotype threat than students who did not learn or engage in mindfulness practices. The unique training of counselors, specifically in mindfulness-based practices, or values-based psychotherapy such as Acceptance and Commitment Therapy, positions the field well to help students with disabilities overcome a loss in self-confidence and academic self-efficacy on college campuses. Considering the results of our study, we suggest that mental health counselors be positioned within Disability Resource Centers (DRC) or at least work in collaboration with professionals that are highly qualified in disability studies and the undergraduate experience of students with disabilities. Additionally, having counselors positioned within DRC offices would uniquely position these individuals to create trainings and outreach programing that can target educators, faculty, and peers and address topics such as ableism, stereotype threat, and issues of self-efficacy and persistence of students with disabilities

on college campuses. This proactive approach would hopefully improve the attrition rates of students with disabilities in postsecondary environments.

Limitations and Future Directions

Several limitations must be taken into consideration when interpreting the findings of the current study. First, despite the first hypothesis being supported, this finding should be interpreted with caution due to the poor model fit. It seems that adding variables such as coping self-efficacy and social self-efficacy may have significantly affected the model fit and interpretability of the results. Therefore, it might be more appropriate for future research to test a more parsimonious model that does not include the nonsignificant effects of coping and social self-efficacy.

A second significant limitation of the study was the sampling of students from only one large university in the Midwest that has a strong emphasis on STEM majors and empirical research. This sampling strategy limits the generalizability of the data to students from all other types of undergraduate institutions across the United States. For example, 77% of the total participant population identified their race as White, which may not represent the undergraduate experience of those that may face additional stereotype threat vulnerability due to their race. Additionally, the inclusion of participants across all major types may have impacted external validity, as these academic environments may be vastly different and present unique challenges or supports that may not have been captured within the study's framework. For example, a majority of participants were represented by either the college or engineering or college of science, which may be environments which emphasize social self-efficacy and social experiences much less than liberal arts or humanities majors. Therefore, future studies should sample from multiple undergraduate institutions in order to gather a large enough sample to take a

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comparative approach across academic majors. Taking a comparative approach in future studies may have implications for identifying academic environments that may present higher levels of stereotype threat and susceptibility to negative disability stereotypes.

An additional limiting factor of the study was the limited sample size and study participation. This restricted the researcher from being able to take a comparative approach when analyzing the results based on factors such as disability-type and academic major. A comparative approach can be critical in achieving the study's purpose of identifying specific interventions that could be applied across different academic environments. Having a limited dataset mitigated the researcher's ability to generalize the study findings and predict with confidence what types of students with disabilities, or academic environments, were more vulnerable to stereotype threat.

Because our inclusion criteria included participants with all disability types, results should be interpreted with caution, as causality of persistence intentions cannot be inferred strictly by self-efficacy beliefs and perceptions of stereotype threat. The sample included a significant number of participants who identified as having mental health-related disabilities ($n = 44$), learning disabilities ($n = 40$) or combined mental health and learning disabilities ($n = 19$), compared to all other disability-types ($n = 53$) (e.g., chronic health, mobility impairment, vision impairments, hearing impairments, autism spectrum disorder). A majority of participants identified as either having a mental health-related disability or specific learning disability makes it difficult generalize the findings to the total population of those who identify as having a disability. For example, it could be that those with mental health-related disabilities (i.e., major depressive disorder, post-traumatic stress disorder) are vulnerable to having lower levels of self-efficacy beliefs and motivation to persist as a symptom of their disability, rather than as a result of stereotype threat perceptions. Additionally, participants with specific learning disabilities may

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be more vulnerable to academic related stereotypes which may have a greater impact on their academic self-efficacy beliefs and academic persistence intentions when compared to those with other disability-types. Following the ANOVA conducted in the primary analysis, the current study planned to conduct a post-hoc analysis to investigate the quantitative difference between students with various types of disabilities. However, sampling from one large undergraduate institution yielded a sample size that was too small to appropriately conduct a host-hoc analysis. Therefore, the researcher implores future studies to apply this study's framework to either a participant population with a specific disability-type or a participant sample from multiple institutions in order to yield a sample size that is conducive to taking a comparative approach. This approach would help improve the generalizability of the findings to the population of undergraduate students that identify as having a disability.

Finally, although the researcher gathered data on identity factors such as race, gender, sexual orientation, and grade level, the study did not take an intersectional approach in its framework or design. Meaning that the research questions, hypotheses, and measures were not formulated specifically to capture the experiences of students with multiple marginalized identities, such as being an African American undergraduate student with a disability. This makes it difficult to confidently generalize our findings on how a disability identity alone predicts persistence intentions, self-efficacy, and experiences of stereotype threat in postsecondary environments. Future research should apply the current study's framework while also taking an intersectional approach to capture the holistic and unique experiences of undergraduate students with disabilities on college campuses.

Conclusion

In summary, although the current study results did not support three of the four hypotheses, the study did show that stereotype threat is a psychological phenomenon that individuals with disabilities experience on college campuses. Therefore, it is important for future research to apply this concept to better identify interventions that might help improve the experiences of students with disabilities and lessen the negative effects stereotype threat is known to have on individuals who identify as part of a minority group. Mitigating the negative psychological and cognitive effects of stereotype threat for undergraduate students with disabilities may help improve the representation of students with disabilities on college campuses and in turn improve campus climates and close the achievement and wage gap between individuals with and without disabilities.

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APPENDIX A. DEMOGRAPHIC QUESTIONS

1. Do you identify as having a disability?
    1. Yes
    2. No
2. What is your disability? _____
3. What is your race/or ethnic identity? _____
4. What is your age? _____
5. What is your gender identity?
    1. *Man*
    2. *Woman*
    3. *Trans man*
    4. *Trans woman*
    5. *Genderqueer*
    6. *Gender non-conforming*
    7. *Gender neutral*
    8. *Two spirit*
    9. Gender not listed
    10. Prefer not to answer
6. What is your sexual identity/orientation?
    1. *Heterosexual*
    2. *Gay or Lesbian*
    3. *Bisexual*
    4. *Asexual*
    5. *Pansexual*
    6. *Questioning*
    7. *Sexual identity/orientation not listed*
    8. *Prefer not to answer*
7. University Status
    1. *Freshman*
    2. *Sophomore*
    3. *Junior*
    4. *Senior*
    5. *Senior +*
8. Academic Major (select college in which your major resides)
    1. College of Agriculture
    2. College of Education
    3. College of Engineering
    4. Exploratory Studies
    5. College of Health and Human Sciences
    6. College of Liberal Arts
    7. Krannert School of Management
    8. College of Pharmacy
    9. Purdue Polytechnic Institute
    10. College of Science

11. College of Veterinary Medicine
12. Pre-Medical Program
13. Pre-Professional Program
14. IU School of Medicine – Lafayette

9. Have you ever served on active duty in the U.S. Armed Forces, Military Reserves, or National Guard?
    1. Yes
    2. No

APPENDIX B. STEREOTYPE THREAT IN SCIENCE SCALE (ADAPTED)

Instructions: Please respond to each item using the scale provided below.

0. Never
1. Very Rarely
2. Sometimes
3. Frequently

1. I feel pressure to do what I can to improve the image of students with disabilities.
2. I am afraid that I will not perform the way I want in college because of my disability.
3. I am afraid that if I do poorly in college, it will confirm the stereotype that students with disabilities cannot perform well in this environment.
4. I fear that my peers will judge me as an incompetent undergraduate student if I do not do well on the assignments and exams.
5. I am afraid that if I perform poorly in my undergraduate education, it will confirm what peers and professors expect of students with disabilities.
6. I feel pressure to do what I can to change the negative stereotype that students with disabilities are not capable of completing their undergraduate education.
7. It is important to me that I represent the interests of other students with disabilities who aspire to receive and undergraduate education.
8. I am afraid of being negatively evaluated by professors due to my disability.
9. I am afraid of confirming the stereotype that students with disabilities do not have the skills to complete their undergraduate education.
10. I feel pressure to represent undergraduate students with disabilities because there are so few of us enrolled.
11. I fear that performing poorly in college will only confirm what peers generally think about a student with a disability's competence in my chosen major.

APPENDIX C. CAMPUS CLIMATE SCALE

0	1	2	3	4	5	6	7

(Strongly disagree)   (Strongly agree)

General Campus Climate
1. In general, I fit in with other students here.
2. If I had to do it all over again, I would still attend the university.
3. I have found the atmosphere at this university to be very friendly.
4. I feel left out of things here at the university.

Disability Experiences
5. I have experienced insensitivity of my disability from other students.
6. I have experienced insensitivity of my disability from faculty.
7. In my opinion, this campus is more insensitive to disability than most.
8. Students without disabilities seem uncomfortable around me.

University Perceptions
9. The university makes a genuine effort to recruit students with disabilities.
10. The university fosters respect for cultural differences.
11. The university has made a special effort to help students with disabilities to feel like they "belong" on campus.

APPENDIX D. THEORIES OF INTELLIGENCE SCALE

The following questions are exploring students' beliefs about their personal ability to change their intelligence level. There are no right or wrong answers. We are just interested in your views. Using the scale below, please indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

1. I don't think I personally can do much to increase my intelligence
2. My intelligence is something about me that I personally can't change very much.
3. I believe I can always substantially improve on my intelligence
4. Regardless of my current intelligence level, I think I have the capacity to change it quite a bit.
5. With enough time and effort I think I could significantly improve my intelligence level
6. To be honest, I don't think I can really change how intelligent I am.
7. I can learn new things, but I don't have the ability to change my basic intelligence.
8. I believe I have the ability to change my basic intelligence level considerably over time.

APPENDIX E. ACADEMIC, COPING, AND SOCIAL SELF-EFFICACY SCALE

Part I. Instructions: The following is a list of major steps along the way to completing an undergraduate degree. Please indicate how much confidence you have in your ability to complete each of these steps in relation to the academic major that you are most likely to pursue. Use the 0-9 scale below to indicate your degree of confidence.

How much confidence do you have in your ability
to complete the following tasks as a college student:

1. Remain enrolled in your intended major over the next semester.
2. Remain enrolled in your intended major over the next two semesters
3. Excel in your intended major over the next semester
4. Excel in your intended major over the next two semesters
5. Complete the upper level required courses in your intended major with overall grade point average of B or better

Part II. Instructions: Here we are interested in knowing how well you believe you could cope with each of the following barriers, or problems, that students could possibly face in pursuing an undergraduate degree. Please indicate you confidence in your ability to cope with, or solve, each of the following problem situations.

How much confidence do you have in your ability
to:

1. Cope with a lack of support from professors or your advisor.
2. Complete a degree despite financial pressures.
3. Continue on in your intended major even if you did not feel well-liked by your classmates or professors.
4. Find ways to overcome communication problems with professors or teaching assistants in your courses.
5. Balance the pressures of studying with the desire to have free time for fun and other activities.
6. Continue on in your intended major even if you felt that, socially, the environment in these classes was not very welcoming to you.
7. Find ways to study effectively for your courses despite having competing demands for your time.

Instructions: Please indicate how much <u>confidence </u>you have in your ability to perform each of the following behaviors in social situations. Use the 0-9 scale below to indicate your degree of confidence

How much confidence do you
have in your ability to:

8. Make new friends
9. Start up a conversation with a stranger
10. Get to know new people at a social event
11. Help other people to feel at ease in a new social situation
12. Disclose information about yourself to a new acquaintance
13. Keep a conversation going with someone you've just met
14. Initiate social activities with friends
15. Work out conflicts or disagreements with a friend
16. Share painful feelings with someone you feel close to you
17. Maintain relationships with old friends who do not live nearby
18. Provide comfort to a friend who is in distress
19. Ask for support from a friend when you could use support

APPENDIX F. INTENTIONS TO PERSIST SCALE

Please indicate how strongly you agree. <u>Please answer all items</u>.

        0   1   2   3   4   5   6   7   8   9
  (Strongly disagree)   (Strongly agree)

1. I plan to remain enrolled in my major over the next semester.
2. I think that earning a bachelors degree is a realistic goal for me.
3. I am fully committed to getting my college degree.

APPENDIX G. EMAIL RECRUITMENT

Dear Student,

My name is Michael Lotz and I am a graduate student in the Department of Educational Studies at Purdue University. You are invited to participate in a study that may contribute to the understanding of factors that affect your well-being and academic development at Purdue University. We are recruiting participants who are (a) age 18 years or older, (b) an undergraduate student, and (c) identify as having a disability.

Your participation would involve taking one 10-15-minute Qualtrics survey at the beginning of the Spring 2021 semester. Your responses will be confidential, and your identity will remain anonymous. Upon completing the Qualtrics survey, you will be asked to voluntarily submit your email address for a chance to win a $25 Amazon gift card from a random drawing. It is possible to complete the Qualtrics survey without entering the gift card drawing. If you wish to submit your email address for the lottery drawing, you will be directed to a separate survey at the end of the study which will not be linked to your individual responses.

Your participation in this study is completely voluntary. You must be over the age of 18, enrolled as an undergraduate student at Purdue University, and identify as having a disability. Only the researchers will have access to the data collected and it will remain confidential.

If you would like to participate, please click the following link to the Qualtrics survey:

If you have any questions, please don't hesitate to contact me.

Sincerely,
—
Michael Lotz
Counseling Psychology Doctoral Student
Department of Educational Studies
Purdue University
West Lafayette, IN 47907
mlotz@purdue.edu

APPENDIX H. RESEARCH PARTICIPANT INFORMATION SHEET

What is the purpose of this study? The purpose of this study is to examine the academic attitudes and experience of students at Purdue University that are (a) age 18 years or older, (b) an undergraduate student, and (c) self-identify as having a disability.

What will I do if I choose to be in this study? If you agree to participate, you will be asked to complete one online survey. Questions will ask about your demographic information, perceptions of your disability, and your academic and social satisfaction at Purdue University. The survey will take approximately 12-15 minutes to complete.

How long will I be in the study? The survey will take approximately 12-15 minutes and will only be taken once by the consenting participate.

What are the possible risks or discomforts? Participation involves minimal risks that are no greater than you would encounter in daily life. There is no expectation of discomfort expected from participation in this research study.

Are there any potential benefits? There are no direct benefits for participating in this research. However, by participating you will have contributed to knowledge about factors affecting the well-being of students with disabilities at Purdue University.

Will I receive payment or other incentive? If you voluntarily choose, you may enter into a gift card drawing for a chance to win a $25 Amazon.com gift card.

Will information about me and my participation be kept confidential? All information in the survey will remain confidential and your identity will be anonymous. Only the researchers will have access to the data, which will be downloaded from a secure internet server (qualtrics.com) and stored on password protected computers. Data will be deleted following the final analysis of the data. Data presented from this research will only be based on average, not individual responses.

What are my rights if I take part in this study? Your participation in this study is voluntary. You may choose not to participate or, if you agree to participate, you can withdraw your participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Who can I contact if I have questions about the study? If you have questions, comments or concerns about this research project, please contact Michael Lotz, (mlotz@purdue.edu), Department of Educational Studies, Purdue University. If you have questions about your rights while taking part in the study or have concerns about the treatment of research participants, please call the Human Research Protection Program at (765) 494-5942, email (irb@purdue.edu) or write to:

Human Research Protection Program - Purdue University
Ernest C. Young Hall, Room 1032

155 S. Grant St.,
West Lafayette, IN 47907-2114

<u>Consent</u>

Click "I agree" in the lower right portion of your screen indicates that you have read and understand the information provided above, that you willingly agree to participate, and that you are aware that you may withdraw your consent at any time and discontinue your participation without penalty. If you choose not to participate, simply close your web browser.