

College Student Perceptions of Varying Disability Types: Does Contact Experience  
Matter?

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## Abstract

Studies exploring prejudices between groups have suggested that contact is related to attitudes. This relationship has been studied in the context of attitudes toward people with disabilities and has yielded inconsistent results. Other variables, such as gender, type of relationship, and the type of disability, have been studied in conjunction with and distinct from the contact variable. The present study, conducted among college students, investigated if the contact experience or the exposure to a specific type of disability in a vignette individually were associated with the attitude variable of social distance, as well as if there was an interaction between the two independent variables. Contact experience did not significantly predict scores on the social distance measure; however, type of disability was a significant predictor of undergraduate students' social distance attitudes. Specifically, physical disability predicted significantly lower scores of social distance than intellectual disability, Attention-Deficit Hyperactivity disorder, and Autism Spectrum Disorder. The results of this research were consistent with prior studies measuring similar variables, prompting a need for further research on the role of contact experience and disability type in forming prejudices toward people with disabilities. As type of disability seems to play a significant role in attitudes toward people with disabilities, greater efforts should be directed towards educating students and faculty on non-physical disability types.

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**Prejudice towards People with Disabilities**

Over the last several decades, researchers have studied methods to reduce prejudicial attitudes directed toward people with disabilities (PWD) by people without disabilities (PWOD). The Americans with Disabilities Act (ADA; Americans, 1990) defined disability as follows:

A physical or mental impairment that substantially limits one or more major life activities [...which] include, but are not limited to caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working [...and] the operation of a major bodily function. (Definition of Disability section, para. 1(A), 2(A)-2(B)).

However, in studies on disability perception and stigma, researchers have underscored the importance of understanding disability as an experience comprised of the body, identity, culture, and social structure, not solely as a bodily impairment (Gordon, Tantillo, Feldman, & Perrone, 2004; Green, 2007; Hergenrather & Rhodes, 2007).

The way PWOD perceive PWD directly influences how PWD experience society, perhaps more than their disabilities themselves (Barr & Bracchitta, 2015). Prejudice towards PWD has been found to reduce their access to opportunities in education, welfare, the workplace, and the community (Gordon et al., 2004; Hunt & Hunt, 2004; Seo & Chen, 2009). Additionally, prejudice toward PWD may lead to diminished self-evaluations, negative self-esteem, and a sense of disconnect from the broader community

(Green, 2007; Keith, Bennetto, & Rogge, 2015; McManus, Feyes, & Saucier, 2010). The negative impact of prejudice toward PWD emphasizes the importance of uncovering the root causes of negative attitudes in order to reduce discrimination and increase integration of PWD into the community.

### **Research among College Students**

PWD are affected by prejudice at all ages; however, research dealing with attitudes of college students toward PWD is of particular interest. PWD have increased access to post-secondary education (PSE) options compared to those they had in the past, and PSE unlocks potential opportunities for employment and self-advancement (Griffin, Summer, McMillan, Day, & Hodapp, 2012; Keith et al., 2015). Additionally, early intervention and mandated education laws have increased opportunities for students with Autism Spectrum Disorder (ASD) diagnoses to access PSE (Nevill & White, 2011; VanBergeijk, Klin, & Volkmar, 2008). Since young adult cognitions are considered relatively malleable and college enrollment of PWD has increased, many researchers have measured the relationship between the attitudes of college students and their contact experiences with PWD (Barr & Bracchitta, 2012). Additionally, current college-age students have drawn research attention because they belong to the first generation in the United States to have grown up with legally established rights for PWD (Huskin, Reiser-Robbins, & Kwon, 2017). Many studies on attitudes toward PWD have been conducted among undergraduate and graduate students; thus, college students are considered a relevant population for continued research within this field of study.

**Theoretical Framework**

The level of prior interaction between groups has been extensively researched as a factor in predicting attitudes (e.g. Anthony, 1972; Karnilowicz, Sparrow, & Shinkfield, 1994; Yuker & Hurley, 1987). In his research on the relationship between interaction and attitudes, Allport (1954) proposed the theory of intergroup contact, which has been used as a framework for reducing prejudice between PWD and PWOD (e.g. Keith et al., 2015; McManus et al., 2010, Seo & Chen, 2009). This theory stated that intergroup contact between an ingroup and an outgroup under four reinforcing conditions would improve attitudes between the two groups (Allport, 1954). Pettigrew and Tropp (2006) outlined these four optimal conditions in a meta-analysis of studies about contact and prejudicial attitudes among majority and minority groups. The conditions included “equal status between the groups in the situation, common goals, intergroup cooperation, and the support of authorities, law, or custom” (p. 752). They found that intergroup contact and levels of prejudice were inversely related in 94% of the 696 samples considered. They also found that, in situations where Allport’s optimal conditions for contact were met, the effect of the inverse relationship was strengthened significantly; however, they indicated that these optimal conditions were not absolutely necessary to reduce prejudice. The results of this meta-analysis indicated that contact between groups did generally reduce negative attitudes, thus prompting further research seeking the effect of varying types of contact on prejudice.

**Quantity of Contact**

Previous studies measuring the relationship between frequency of contact and attitudes have yielded inconsistent results (e.g. McCallister, Wilson, & Baker, 2014; Seo

& Chen, 2009). Seo & Chen (2009) conducted a study among a sample of 311 students at a Midwestern university measuring the influence of prior instances of contact on attitudes. Using the Attitudes Toward Disabled Persons Scale, Form-O (ATDP-O) and the Contact with Disabled Persons Scale (CDP), they found a significant positive relationship between attitudes toward PWD and the level of prior contact with PWD (Seo & Chen, 2009). McCallister et al. (2014) also used the ATDP to measure attitudes among 589 graduate students at a regional southeastern university. Due to the apparent lack of training to accommodate disability policy at the post-secondary level, their study examined many of the masters and doctoral students who taught introductory courses at the university where they have been completing their coursework and where there was greater opportunity for interaction with students with disabilities. Participants who had contact with a family member, friend, or classmate with a disability scored significantly higher on the ATDP than those with no experience, indicating more positive attitudes. Their findings regarding increased frequency of contact indicated potentially positive outcomes for those who interacted first-hand with undergraduate students with disabilities. These findings also have a role in accommodation policies for PWD at the post-secondary level, as students with disabilities have previously been expected to take personal responsibility to seek out their own accommodations. The results of this study underscored the importance of establishing disability-related training for graduate students, so that they may be more accommodating as students with disabilities make the transition to the post-secondary environment. Rather than adding to the challenges of the transition, increased knowledge and understanding through training may remove some of

the obstacles that arise from negative or indifferent attitudes among educators and instructors without disabilities.

Conversely, McManus et al. (2010) measured quantity and quality of contact among the same sample of individuals and compared the relationship of each measure of contact with attitudes toward individuals with intellectual disabilities. Due to the focus on children in prior research regarding peer relationships, the study was conducted among 125 undergraduate students, with a mean age of 18.91, in order to increase research attention centered on adult perceptions of PWD. With regard to Allport's theory of contact experience, McManus et al. (2010) hypothesized that both increased quantity and improved quality of contact would produce more positive attitudes. However, their findings suggested that self-reported frequency of interaction experiences could not predict more positive attitudes as measured by the Mental Retardation Attitude Inventory- Revised (MRAI-R), which consisted of four subscales measuring Integration-Segregation, Social Distance, Private Rights, and Subtle Derogatory Beliefs. Overall scores on the MRAI-R scale indicated that quality of contact significantly predicted attitudes toward individuals with intellectual disabilities, while quantity of contact and knowledge about disability did not. The results of each of the four subscales indicated the same trend, demonstrating that quality of contact significantly predicted more desirable scores for integration-segregation, social distance, private rights, and subtle derogatory beliefs. It is also worth noting that the researchers utilized the Marlowe-Crowne scale of social desirability to control for impression management.

Furthermore, Keith et al. (2015) performed a study comparing quantity versus quality interactions among 550 respondents between ages 18 and 74, with a mean age of



24.5. They asked questions about seven different settings where participants could rank their contact on five-point scale from “none at all” to “a great deal” to measure quantity of interactions; and, they used the Community Living Attitudes Scale-Mental Retardation form (CLAS-MR) and the Go/No-go Association Task (GNAT) to measure explicit and implicit attitudes, respectively. When controlling for the quality of the interaction, increased quantity of contact predicted more negative attitudes. The results of this study stand in direct contrast to the results of the studies performed by McCallister et al. (2014) and Seo and Chen (2009). Thus, due to the disparities in these results, researchers could replicate this research, as well as consider other factors in addition to quantity of contact in order to more reliably predict attitudes.

### **Quality of Contact**

Corresponding with Allport’s (1954) theory of intergroup contact, researchers have found that improving the quality of an interaction between a PWOD and a PWD may moderate the effect of contact on attitudes. When measuring quality of contact and attitudes toward PWD, many studies have defined quality contact as interactions that are personal, intimate, or rewarding and disconfirm stereotypes (e.g. Barr & Bracchitta, 2012, 2015; Huskin et al., 2017; Seo & Chen, 2009). McManus et al. (2010) also noted that higher quality contact with individuals with intellectual disabilities predicted increased support for their educational and vocational integration as well as their private and civil rights. Higher quality contact was also associated with assigning more positive characteristics to individuals with intellectual disabilities.

In the aforementioned McCallister et al. (2014) study, researchers prompted the surveyed instructors of record and teaching assistants to answer the question, “What type

of information would help you better understand how to work with college students with disabilities?” Instructors of record were categorized as having experienced higher quality interactions with students with disabilities since they directly taught and interacted with them, whereas teaching assistants were categorized as having lower quality interactions since they experienced only indirect interactions with PWD such as through grading papers and exams. Differing responses from each of the two groups qualitatively informed the current understanding of how quality of contact and knowledge of individuals with disabilities improves attitudes. Predominant themes among the instructors of record included the desire for increased training and knowledge as well as a desire for students with disabilities to be successful. Teaching assistants responded with similar themes, but there was also a more negative undercurrent among their responses, including expectations that students with disabilities seek out their own accommodations and misguided perceptions of what students with disabilities require for success in the classroom (McCallister et al., 2014). When the impact of quality of contact was measured through an open-ended question distributed among instructors of record versus teaching assistants, emergent themes indicated more positive attitudes among those who were regarded as having more direct contact and enriching involvement with students, the instructors of record.

The quality of contact, such as engaging in shared activities or developing friendships, is more consistently associated with improving attitudes, in contrast with the effect of increasing sheer quantity of interactions (e.g. Barr & Bracchitta, 2012; Keith et al., 2015; McManus et al., 2010). Barr and Bracchitta (2012) performed a study on relationships between PWOD and PWD and their effect on attitudes among 228 students

at two undergraduate institutions. They administered the Scale of Attitudes toward Disabled Persons (SADP) to collect participants' attitudes and formulated a 12-question survey to measure the PWOD's perceived depth of the relationship with the PWD. Across four relationship categories, they found that increased contact with friends with disabilities or in shared activities with a PWD was associated with more positive attitudes, whereas increased contact with relatives or classmates with disabilities was not associated with more positive attitudes (Barr & Bracchitta, 2012). Thus, the type of relationship within which contact occurs may be a stronger predictor of attitudes than simply increased frequency of interactions between the PWOD and the PWD. However, Barr and Bracchitta (2012) made an important distinction that pre-existing positive attitudes toward PWD may have produced resultingly positive interactions rather than the other way around. This caveat served as a reminder to avoid drawing causal conclusions from correlational studies.

One study measured the nuanced effects of frequency, nature, and closeness of contact with individuals with intellectual disabilities on predicting social distance, in contrast with a dichotomous contact/no contact measure (Blundell, Das, Potts, & Scior, 2016). Frequency was measured through seven categories ranging from daily contact to no contact; closeness of contact was measured through a nine-point Likert scale ranging from not at all close to extremely close; and nature of the relationship was measured in one of three categories: voluntary, involuntary, or no contact. The study, conducted among a sample of 1,264 people from the United Kingdom, ages 16 to 74 with a mean age of 26.2 years, found that closeness of contact was the only variable of the three that predicted social distance. However, all forms of contact were related to increased

understanding of intellectual disabilities, which may be important to lessening stigma directed toward PWD. Thus, general contact between PWOD and PWD may dispel stigma about PWD; however, closeness of the relationship with the PWD is a variable of interest in predicting behavioral intentions toward PWD.

While quality of contact has provided a more thorough explanation of predicted attitudes, it is still insufficient to comprehensively predict attitudes on its own, so researchers are now considering other factors in conjunction with contact that could more reliably reduce prejudice. Some potential factors include type of disability and type of relationship between PWOD and PWD.

### **Type of Disability**

Recent evidence has indicated that attitudes may vary as a function of disability type paired with contact experience (e.g. Barr & Bracchitta, 2015; Huskin et al., 2017; Kowalska & Winnicka, 2013). Much of this research has acknowledged that attitudes are comprised of three distinct components (i.e., cognitive, emotional, and behavioral) that can be distinctively measured. Discrepancies regarding the impact of contact experience on attitudes from earlier studies may be explained by a lack of specificity as to which component of attitudes was being measured (Kowalska & Winnicka, 2013; Huskin et al., 2017). Recent research has mitigated these discrepancies by measuring the effect of contact and disability type on each distinct component of attitudes.

Kowalska and Winnicka (2013) contributed to the developing body of research on the relationship between contact, type of disability, and the multidimensional nature of attitudes. Their study, conducted among 318 university students in Warsaw, Poland, accounted for the different facets of attitudes by using the Social Distance Scale based on

Bogardus's idea (SDSB; 1933) to measure behavioral factors and the Semantic Differential Scale of Osgood, Suci, and Tannenbaum (SDSO; 1957) to measure cognitive factors. The SDSB measured students' willingness to engage with individuals with four different disability types in ten different interpersonal settings with deepening levels of intimacy. Respondents indicated the greatest levels of social distance toward individuals described as having Down syndrome or other intellectual disabilities, as opposed to people described as having a general disability, blindness, or deafness (Kowalska & Winnicka, 2013). Conversely, the SDSO measured respondents' cognitions about PWD through responses on a seven-point subscale between two opposing adjectives. The scale included 42 pairs of adjectives describing the same four disability types as used in the SDSB. Kowalska and Winnicka (2013) regarded the results of the SDSO (the cognitive measure) as more ambiguous than the SDSB (the behavioral measure) because participants assessed individuals with Down syndrome lower overall than those with deafness or blindness and yet evaluated them as being more "friendly, munificent, and truthful" than people with other forms of disability. Thus, although people cognitively assessed specific characteristics of individuals with intellectual disabilities more highly, these cognitions did not translate into self-reported behavior. This disparity between cognition and behavior underscores the importance of understanding the dynamic nature of attitudes.

As mentioned in the research above, PWOD are less likely to participate in activities with people with intellectual disabilities than other types of disabilities such as blindness or deafness (Huskin et al., 2017, Karnilowicz et al., 1994; Kowalska & Winnicka, 2013). Upton, Harper and Wadsworth (2005) continued research on the

relationship between type of disability and attitudes in their study among 923 college students with and without disabilities by measuring attitudes toward educational accommodations for PWD. In scenarios illustrating the functional limitations of 12 differing disability types, they found that students were more likely to view their peers with physical and sensory disabilities as deserving of educational accommodations than their peers with emotional, behavioral, and mental disabilities. Emotional/behavioral disabilities such as ADHD and depression were ranked as the least deserving of accommodations. In a measure of behavioral intentions, conducted among high schoolers, students reported being more willing to participate in activities with peers with physical disabilities than in activities with peers with intellectual disabilities (Brown, Ouellette-Kuntz, Lysaght, & Burge, 2011).

In another study analyzing the relationship between disability type and attitudes, Barr and Bracchitta (2015) measured prior quantity of contact and current attitudes toward individuals with physical, developmental, and behavioral disabilities. In their study, they collected responses from a sample of 238 college students at two undergraduate institutions who were presented written scenarios of one of the three disability types: a person in a wheelchair, a cognitive impairment, and Attention-Deficit Hyperactivity Disorder (ADHD), respectively. They used the Scale of Attitudes toward Disabled Persons (SADP; Antonak, 1982) to analyze three attitude factors: Optimism, Misconceptions, and Hopelessness. Their findings revealed that participants held more negative attitudes (i.e., higher hopelessness, higher misconceptions, and lower optimism) toward individuals with developmental disabilities and more positive attitudes toward individuals with physical disabilities. Furthermore, they found that increased contact with

an individual with a behavioral disability, specifically, was associated with more positive attitudes in future encounters with all disability types (Barr & Bracchitta, 2015).

Generally, studies indicated a relationship between PWOD expressing greater optimism and more positive attitudes toward people with physical disabilities, while they displayed increased social distance and more negative attitudes towards those with intellectual and mental disabilities (e.g., Barr & Bracchitta, 2015; Brown et al., 2011; Huskin et al., 2017). Brown et al. (2011) conducted a descriptive study among college students to qualitatively inform the discussion of why attitudes vary as a result of disability type. Their findings suggested PWOD may be more prejudiced toward people with intellectual and developmental disabilities than people with physical disabilities because they experience greater difficulty finding similarities that could facilitate the development of a relationship, though further research is necessary to test this assumption.

In a continuation of the research on disability type as a predictor of social distance, Huskin et al. (2017) included 10 categories of disability in their study: physical impairment, sensory impairment, chronic illness, HIV/AIDS, mental illness, intellectual disability, learning disability, ADD/ADHD, autism, and visceral disability. The sample was comprised of 766 undergraduate students at a public university in the southwestern United States and included 550 (72%) respondents that identified as Hispanic. A gender division showed that 415 (54%) were female and 351 (46%) were male. The study measured participants' prior contact experiences with PWD through one of three levels of contact: no contact, no regular contact but sometimes meet, and regular contact. Overall, regular contact was associated with lower social distance within each disability type than

sometimes meeting or never having contact with a PWD (Huskin et al., 2017).

Respondents who reported regular contact were also asked to indicate the type of relationship they had with a PWD, as family member, relative, classmate/colleague, or friend. The role of the relationship type was not explicitly discussed; however, the question did subtly address the importance of measuring the quality of the contact relationship in addition to quantity.

Furthermore, their study found that respondents' social distance varied widely based on disability type (Huskin et al., 2017). Social distance was measured using a modified version of Bogardus's (1933) Social Distance Scale. Respondents indicated their willingness to participate in several different social relationships with each of the ten disability types. The social relationships included marriage, close kin member by marriage, next-door neighbor, friend, fellow employee, or avoiding contact. Respondents' scores were summed and weighted based on their willingness to participate in some relationships and the unwillingness to participate in others; higher scores indicated higher levels of social distance. The greatest levels of social distance and the lowest levels of acceptance were recorded towards individuals with HIV/AIDS, mental illness, intellectual disability, and autism. Conversely, the least stigmatized disabilities included learning disabilities, ADD/ADHD, and physical disabilities. The findings of this study were consistent with the findings of prior studies which indicated more positive attitudes toward individuals with physical disabilities (Barr & Bracchitta, 2015; Brown et al., 2011; Upton et al., 2005), but they also provided evidence that nuances within intellectual and cognitive disabilities predicted differences in the relationship between disability type and attitudes toward PWD.



Butler and Gillis (2011) also used a modified version of the Social Distance Scale in their study; however, they specifically measured attitudes towards individuals with Asperger's disorder, now classified as an autism spectrum disorder (ASD) in the DSM-5. The study was conducted among 195 university students who were randomly assigned to read one of three vignettes and were given the label of "Asperger's Disorder" or given no label at all, resulting in six conditions. The researchers modified the Social Distance Scale created by Bogardus (1933) to increase validity among college-aged students. The scale measured whether students' stigma toward individuals with ASD was a function of the label, "Asperger's Disorder" or the behavioral description within the vignette. Labels did not correlate with the level of reported stigmatization; however, descriptions of social behaviors in the vignettes were significantly related to variance in scores on the Social Distance Scale. Thus, the description of specific behaviors is valuable in measuring social distance toward individuals with disabilities rather than providing a label for the disability alone. The study indicated that it is important to address behaviors in both the PWD and the PWOD in order to reduce stigmatization.

Research on attitudes toward PWD has frequently acknowledged the relationship between contact and attitudes. Further, researchers have suggested other factors that may influence this relationship (e.g., type of relationship, and type of disability). The type of relationship a PWOD has with a PWD has been found to predict the quality of contact with PWD. Studies involving disability type have also garnered research attention due to consistent trends predicting more positive attitudes toward individuals with physical disabilities. There is still a need to investigate the relationships between contact

experience and social distance attitudes, disability type and social distance attitudes, and the interaction of contact experience and disability type on social distance attitudes.

Building upon the literature on attitudes toward varying types of disabilities, this study measured attitudes toward a physical disability, an intellectual disability, ADHD, and ASD. The study also addressed inconsistencies in the literature about the relationship between contact experience and attitudes by measuring past contact in relation to current reported social distance attitudes. The following research questions were addressed:

1. Does contact experience with individuals who have a disability affect college students' perceptions of social distance towards an individual with a disability?
2. Does the type of disability (physical disability, intellectual disability, Attention-Deficit Hyperactivity Disorder, or Autism Spectrum Disorder) affect college students' perceptions of social distance towards an individual with a disability?
3. Is there an interaction between contact experience and disability type on college students' perceptions of social distance towards an individual with a disability?

## **Method**

### **Participants**

A total of 150 undergraduate students accessed the survey. Seven participants withdrew prior to completing all questions and were removed from the data set. In addition, only one participant reported experiencing “no contact,” so the respondent was removed from the sample and contact experience was only evaluated at the levels of “no regular contact but sometimes meet” and “regular contact.” The final sample included 143 undergraduate students, ranging from 18 to 27 years, with a mean age of 20.7. One hundred seventeen (81.8%) of the participants were female and 26 (18.2%) were male.

Participants were also asked to identify their ethnicity in order to better represent the demographic breakdown of the sample. The sample was composed of the following: White (80.4%), Hispanic or Latino (4.9%), Black or African American (7.0%), Native American or American Indian (1.4%), Asian/Pacific Islander (2.1%), or other (4.2%). See Table 1 for further demographic representation of the sample. Participants included undergraduate students enrolled in psychology courses at a private southeastern Christian university and were collected through convenience sample by accessing a link on the institution's psychology activity webpage. Additionally, participants were offered course credit for participating in the study.

Table 1

*Demographic Breakdown of Sample*

	Characteristic	Frequency	Percentage
Gender	Male	26	18.2
	Female	117	81.8
Ethnicity	White	115	80.4
	Hispanic/Latino	7	4.9
	Black or African American	10	7.0
	Native American or American Indian	2	1.4
	Asian/Pacific Islander	3	2.1
	Other	6	4.2
Have a Disability	Yes	17	11.9
	No	126	88.1
Psychology Major	Yes	82	57.3
	No	60	42.0

**Measures**

With regard to the aforementioned studies, the present study integrated the vignettes used by Barr and Bracchitta (2015), the modified Social Distance Scale used by Butler and Gillis (2011), and the evaluation of contact experience used by Huskin et al. (2017) in order to measure the social distance attitudes of undergraduate students toward PWD as predicted by their past contact with PWD. The current study incorporated physical disability, intellectual disability, Attention-Deficit Hyperactivity Disorder (ADHD), and Autism Spectrum Disorders (ASD). These were four of the top five most commonly occurring disabilities at the university where the research was conducted according to the Office of Disability Accommodation Support (ODAS; D. McHaney, personal communication, September 13, 2018).

**Contact experiences with individuals with disabilities.** The current study utilized the contact measure used by Huskin et al. (2017) which measured contact experience through regularity of contact with people with disabilities through one of three levels: “never,” “no regular contact but sometimes meet,” or “regular contact.” The responses for frequency of contact were assigned one of three levels to facilitate analysis: “1” corresponded with no contact, “2” corresponded with no regular contact but sometimes met a PWD, and “3” corresponded with regular contact. As previously noted, only one participant reported no contact with PWD, so this level of the contact experience variable was removed from all analyses.

**Social distance toward individuals with disabilities.** Attitudes were measured using the Modified Social Distance Scale (See Appendix B; Butler & Gillis, 2011). The scale was originally developed by Bogardus (1933) to measure social distance attitudes

toward distinct social groups and Butler and Gillis (2011) modified the content for validity among college students. The modified scale has been found to have predictive validity and high internal consistency ( $\alpha = 0.91$ ; Butler & Gillis, 2011). The scale assessed participants' willingness to enter into various levels of social relationships with a PWD. The participant was first exposed to a vignette about a person with a specific disability and then was asked 20 questions related to the character in the vignette (see Appendix A). The modified Social Distance Scale presents each question as a 4-point Likert-scale in order to assess the participants' degree of willingness to engage in each scenario, ranging from 0 (*definitely willing*) to 3 (*definitely unwilling*). One example item from the scale is "How would you feel having a class with someone like Frank?" Total scores were calculated by summing the point values for each item and dividing by the number of questions that a participant answered. Potential scores ranged from 0 to 3, with higher scores indicating higher levels of social distance (i.e., lower willingness to engage in relationships with people with specific disabilities). In the present study, actual scores ranged from 0.00 to 1.85, and the internal consistency reliability was  $\alpha = .917$ .

### **Procedure**

The university's institutional research board approved procedures used in the study. Participants read and agreed to an informed consent form prior to completing the measures. Participants were informed that they would participate in a study on attitudes toward individuals with disabilities. After consenting and answering three demographic questions, they were randomly assigned through Qualtrics to read a vignette describing one of four disability types: physical disability ( $n = 27$ ), intellectual disability ( $n = 31$ ), ADHD ( $n = 46$ ), or ASD ( $n = 38$ ). Vignettes were adopted with permission from Barr and

Bracchitta's (2015) study on the effect of contact with varying disability types on attitudes and included individuals with physical disability (person in a wheelchair), intellectual disability (cognitive impairment), and behavioral disability (ADHD; See Appendix A). It also includes a fourth vignette involving an individual with an autism spectrum disorder (ASD) adapted from the format of the other vignettes from Barr and Bracchitta (2015) and incorporated the features of ASD found in Butler and Gillis's (2011) vignette. A between-subjects design was employed to minimize fatigue and carryover effects, so participants were randomly assigned to view a vignette with only one of the four disability types. After removing the one participant with no contact experience, a 2 (contact experience) x 4 (type of disability) ANOVA was used to test the research questions.

After viewing the vignettes, participants were asked to respond to the modified Social Distance Scale based on the vignette they were given and to report their prior contact experience with people with disabilities. After completing the scale and subsequent questions, participants were debriefed on the true nature of the study: that it was intended to measure their stigmatization toward individuals with a specific disability type rather than measuring their general attitudes toward individuals with disabilities. On the initial informed consent, participants were told that they were answering questions about attitudes toward PWD; however, at the end of the study, they were debriefed and informed that the true nature of the study had been withheld from the study and that the research was specifically focused how disability type and contact experience related to social distance attitudes (amount of stigmatization). After reading the debriefing document, participants were asked to provide consent again. The analysis only included

responses from participants who provided consent at the beginning and the end of the survey ( $n = 100\%$ ).

### Results

A 2x3 factorial analysis of variance was conducted using SPSS (Version 24) to determine whether prior contact experience was associated with respondents' social distance attitudes, if type of disability (physical, intellectual, ADHD, ASD) was associated with social distance attitudes, or whether these variables interacted to predict social distance attitudes.

The initial data screening indicated that the data for the modified Social Distance scale was relatively normally distributed and did not violate the assumption of independence. A Levene's test was done to assess the equality of variances between each of the groups in the sample. The Levene's test indicated no significant violation of the homogeneity of variance assumption,  $p = .070$ . Group sizes were unequal because participants were randomly assigned into groups through Qualtrics and the contact experience was naturally occurring. Table 2 summarizes descriptive statistics for the type of disability and contact experience variables.

Table 2

*Social Distance Attitude Scores by Type of Disability and Contact Experience*

	<u>No regular contact but sometimes meet</u>			<u>Regular contact</u>			<u>Total</u>		
	M	SD	N	M	SD	N	M	SD	N
Physical	.2615	.2335	19	.2250	.1852	8	.2507	.2174	27
Intellectual	.9715	.4777	18	.7654	.4598	13	.8850	.4739	31
ADHD	.8540	.4424	27	.8580	.4620	19	.8557	.4455	46
ASD	.8220	.3948	25	.8962	.3982	13	.8474	.3921	38
Total	.7423	.4710	89	.7491	.4647	53	.7448	.4670	142

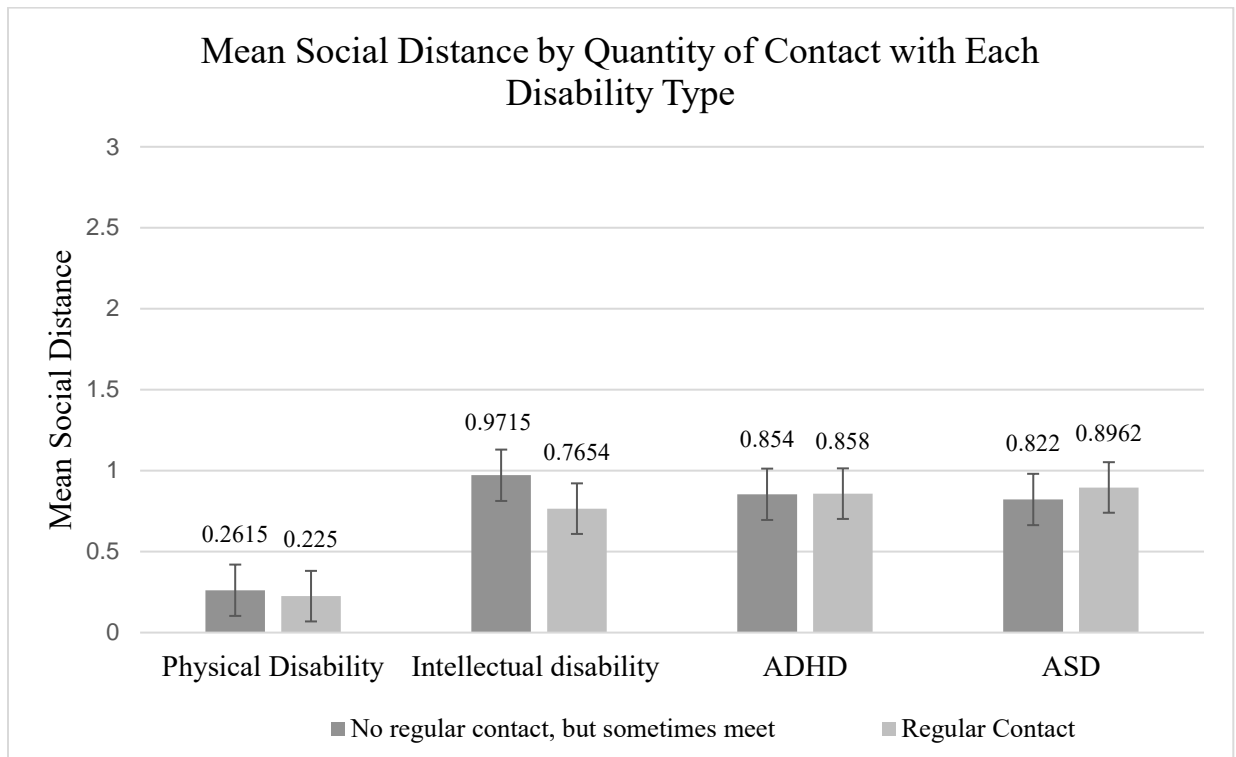
Results of the 2x3 ANOVA indicated that there was a significant main effect of type of disability on social distance attitudes,  $F(3,134) = 14.301, p < .001, \eta^2 = .243$ . The effect for type of disability was significant at the .05 significance level with a large effect size, indicating that social distance attitudes differed based on the type of disability they were exposed to in the vignette. There was no significant main effect for prior contact experience with PWD on social distance attitudes,  $F(1,134) = .315, p = .575$ . There was also no significant interaction between disability type and prior contact experience on social distance attitudes,  $F(3,134) = .683, p = .564$ . See Table 3 for a summary of the ANOVA results and Figure 1 for a graphic depicting marginal means.

Table 3

*ANOVA Results for Social Distance by Type of Disability and Contact Experience*

Variable	Type III Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Disability	7.112	3	2.371	14.301	.000	.243
Contact Experience	.052	1	.052	.315	.575	.002
Vignette x Contact interaction	.340	3	.113	.683	.564	.015
Error	22.212	134	.166			





*Figure 1.* Mean social distance by quantity of contact with each disability type.

This bar graph compares the mean social distance values among 143 participants' quantity of contact and the type of disability to which they were exposed.

As expected from previous findings, post hoc analyses revealed that attitudes toward an individual with a physical disability significantly differed from attitudes toward an individual with an intellectual disability, ADHD, and ASD. The Scheffe's test revealed that physical disability differed significantly from the other disability types at  $p < .05$ . The other groups did not differ significantly from one another at the  $p < .05$  level. See Table 4 for a summary of the post hoc findings.

Table 4

*Post hoc Comparisons Using Scheffe's Test*

		Mean Difference	Standard Error	Significance	CI Lower Bound	CI Upper Bound
Physical	Intellectual	-.6344*	.1072	.000	-.9378	-.3309
	ADHD	-.6050*	.0987	.000	-.8845	-.3255
	ASD	-.5967*	.1025	.000	-.8868	-.3065
Intellectual	Physical	.6344*	.1072	.000	.3309	.9378
	ADHD	.0294	.0946	.992	-.2385	.2972
	ASD	.0377	.0985	.986	-.2413	.3167
ADHD	Physical	.6050*	.0987	.000	.3255	.8845
	Intellectual	-.0294	.0946	.992	-.2972	.2385
	ASD	.0083	.0893	1.000	-.2444	.2610
ASD	Physical	.5967*	.1025	.000	.3065	.8868
	Intellectual	-.0377	.0985	.986	-.3167	.2413
	ADHD	-.0083	.0893	1.000	-.2610	.2444

*Note.* \* =  $p < .05$ 

### Discussion

The current study measured the relationship between past contact experience and social distance attitudes towards PWD, the relationship between type of disability and social distance attitudes towards PWD, and the interaction between contact experience and the type of disability on social distance attitudes toward PWD. Participants who were presented a vignette depicting an individual with a physical disability self-reported lower social distance attitudes than their peers who were presented vignettes portraying intellectual disability, ADHD, or ASD. These results were consistent with prior literature indicating more positive attitudes toward individuals with physical disabilities (e.g. Barr & Bracchitta, 2015; Brown et al., 2011; Huskin et al., 2017). Upton et al. (2005) explained that attitudes may be more positive toward those with physical disabilities because people were more readily willing to accommodate visible disabilities. Moreover,

Brown et al. (2011) indicated people also may experience greater difficulty finding common characteristics with individuals with non-physical disabilities, resulting in more negative attitudes. Future studies may consider involving other visible disabilities beyond physical disability to evaluate whether visibility is a factor that moderates attitudes.

Additionally, there was no link between the contact experience measure and students' scores on the measure of social distance attitudes. This finding echoed prior studies that indicated that quantity of contact alone is inadequate for predicting attitudes (e.g., McCallister et al., 2014; McManus et al., 2010; Seo & Chen, 2009). The interaction between contact experience and type of disability also did not predict reported social distance attitudes.

### **Limitations**

The generalizability of these findings was limited due to the population surveyed for this study. Participants were drawn from the psychology department at a private, Christian university with a mean age of 20.72. The sample was mostly female and White, and it included solely students who were taking classes in psychology, which does not accurately represent the general population. In addition, previous research has suggested that women display greater optimism and acceptance toward PWD (e.g. Barr & Bracchitta, 2012; Griffin et al., 2012; Karnilowicz et al., 1994; Seo & Chen, 2009). It would be beneficial to conduct research among a more diverse sample to broaden the applicability of the data.

Additionally, the nature of self-report measures involves the potential for social desirability bias (i.e., participants' tendencies to present themselves in a positive light). Thus, in the current study, participants may actually hold higher levels of social distance

attitudes toward PWD in a real-life setting than they reported on the social distance scale. Measures were taken, such as the anonymous nature of the responses as well as the use of deception (i.e., withholding the true nature of the study), to minimize participants' impression management; however, the nature of survey research is limited in its capacity to completely eliminate the role of social desirability in participant responses.

In the current study, fewer participants indicated having regular contact with PWD than having some infrequent contact, so it would be beneficial to conduct an oversample among those who report having regular contact with PWD in future studies. Additionally, only one participant reported having no contact, so an oversample could be conducted among a group of individuals who report no to minimal contact with PWD. By conducting future research with an oversampling of these groups, the research could provide a more balanced representation of how PWD are viewed by individuals with lower levels of contact experience. Further, researchers should aim to measure the quality of prior contact in addition to quantity to more extensively inform how contact experiences are related to attitudes.

The study also contained vignettes that were developed to reflect characteristics of four unique disability types; however, the interpretation of each disability may have been limited in light of the brief presentation contained within the vignette. Variations in attitudes may be attributed to individuals' detached responses to the hypothetical vignette and may not have reflected their overall attitude toward individuals with the described disabilities.

While the vignettes in the study were strengthened by portraying a PWD who was the same age as the participant, it is also important to note that the individual was

described as a neighbor, which may have evoked less personal responsibility to the individual than a relationship that involves more frequent encounters. It would be beneficial in future research to change the relationship in the vignette to one that requires continual interaction from the participant, such as a roommate. This role shift may change responses and grant more insight into the factors that impact students' attitudes.

Limitations also may have arisen because participants were only exposed to one disability type rather than all four. This study design diminished the chances of fatigue, order effects, or improvement when exposed to each subsequent condition; however, there may have been reduced statistical power due to between group variability. Future studies should consider using counterbalancing to present participants with all levels of the type of disability variable in order to account for this limitation.

### **Implications**

While this study did include responses from PWD on their attitudes toward other PWD, it did not analyze the differences in their attitudes from those of PWOD.

Evaluating the impact of having a disability on attitudes toward other individuals with disabilities may enrich research on ingroup and outgroup acceptance among PWD.

It is important and necessary to improve attitudes toward PWD, evidenced by nearly all participants having at least some contact with PWD. The apparent frequency in which contact occurs necessitates further research exploring the impact of the style and depth of the contact relationship on attitudes. For example, the type of relationship in which contact occurs has garnered some research attention and may contribute to understanding the nuances of the contact variable in future studies (e.g. Barr and

Bracchitta, 2012; Huskin et al., 2017). As improved relationships are established between groups, prejudices could be minimized toward PWD.

College students have responded most positively toward individuals with physical disabilities. Prior research has suggested students may more easily relate to students with physical disabilities, thus producing more positive attitudes toward this group versus individuals with non-physical disabilities (Brown et al., 2011). The natural tendency to view physical disability more positively calls for continued research exploring why PWOD view individuals with physical disabilities more positively. This research could also lead to a better understanding of how to proactively improve attitudes toward PWD, rather than retroactively correcting improper attitudes.

The current study was conducted among undergraduate students; however, it would be valuable to include other age groups in the sample for future studies. By examining children's attitudes, researchers may be able to evaluate when negative attitudes are introduced. Researchers could also investigate the older adult population to explore if negative cognitions are strengthened or diminished as individuals get older. Perhaps research among varying ages, particularly children, would indicate when social distance toward PWD tends to increase.

Additionally, negative attitudes toward non-physical disabilities have previously interfered with evaluations of accommodation deservedness and have promoted greater stigma in peer relationships (e.g. Blundell et al., 2016; Upton et al., 2005). It would be beneficial for educators and students at institutions of higher learning to combat this tendency in order to provide appropriate accommodations where they are necessary and to improve relationships between PWD and PWOD in the student body. The evident

hierarchy of stigma toward individuals with varying disability types is also important to acknowledge in service environments where there is a greater likelihood of engagement with individuals with disabilities. Attitudes impact how individuals treat their peers, clients, and coworkers, so it is necessary to confront natural inclinations and challenge existing assumptions when engaging regularly with PWD in the work setting.

As more college students who have disabilities enter higher education, it is important to recognize that college students without disabilities continue to hold negative perceptions toward PWD, particularly non-physical disabilities. Continued efforts are required to increase interactions between PWOD and PWD in order to enhance intergroup relationships. Moreover, as students appear to formulate attitudes toward their peers with disabilities through the lens of disability type, perhaps greater education and inclusion practices are necessary to improve understanding of non-physical disabilities.

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## Appendix A

**Vignettes****Condition 1**

You go home for Spring Break and find that there is a new family living next door to you. There is an individual your age that lives there named Frank. One day you notice Frank coming to your door to meet you. You find out that Frank is in a wheelchair. Frank is paralyzed from the waist down and cannot move around without a wheelchair. Based upon this information, please answer the following questions about people like Frank.

**Condition 2**

You go home for Spring Break and find that there is a new family living next door to you. There is an individual your age that lives there named Frank. One day you notice Frank coming to your door to meet you. You find out that Frank has an intellectual developmental disability. Frank has a low intelligence level and has trouble communicating, with personal care, and with doing things independently. Based upon this information, please answer the following questions about people like Frank.

**Condition 3**

You go home for Spring Break and find that there is a new family living next door to you. There is an individual your age that lives there named Frank. One day you notice Frank coming to your door to meet you. You find out that Frank has Attention Deficit Hyperactivity Disorder. Frank does not seem to listen when spoken to, is easily distracted, is often on the go, fidgets with hands and feet, often interrupts and intrudes on

others. Based upon this information, please answer the following questions about people like Frank.

**Condition 4**

You go home for Winter Break and find that there is a new family living next door to you. There is an individual your age that lives there named Frank. One day you notice Frank coming to your door to meet you. You find out that Frank has an autism spectrum disorder. Frank tends to look down when talking to other people, feels anxious when there are changes to his daily schedule, and will often talk about video games even when the other person is not necessarily interested. Based upon this information, please answer the following questions about people like Frank.

## Appendix B

**Social Distance Scale Questionnaire**

Answer the following questions by rating how much you would be willing for that event to occur on a scale from definitely willing to definitely unwilling. Please answer the questions as honestly as possible. Rating: Definitely Willing; Probably Willing; Probably Unwilling; Definitely Unwilling

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1. How would you feel having a class with someone like Frank?
2. How would you feel having someone like Frank in your study group?
3. How would you feel doing a class project with someone like Frank?
4. How would you feel about going to a social event (i.e. a party, movie, or concert) with someone like Frank?
5. How would you feel about going to a sporting event with someone like Frank (i.e. football game)?
6. How would you feel having your sibling marry someone like Frank?
7. How would you feel about having someone like Frank take care of your pet?
8. How would you feel about going on a date with someone like Frank? (If you date females, think of a female with the same personality as Frank.)
9. How would you feel about being a co-worker on the same job as someone like Frank?
10. How would you feel about having someone like Frank as a neighbor?
11. How would you feel about living in the same apartment/house as someone like Frank? (If you are more comfortable living with a female, think of a female with the same characteristics as Frank.)

12. How would you feel having Frank teach one of your college courses?
13. How would you feel about having someone like Frank being the mayor of your community?
14. How would you feel having someone like Frank serving in our Congress?
15. How willing would you be to be supervised by someone like Frank?
16. How willing would you be to carpool with someone like Frank on a daily basis?
17. How willing would you be to have someone like Frank date a close friend or relative?
18. How willing would you be to have someone like Frank participate in community functions?
19. How willing would you be to have someone like Frank drive your bus?
20. How willing would you be to hold a conversation with someone like Frank?