

The Effect of Disability Status on Ratings of Platonic Attraction

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Past research has shown that people with disabilities (PWD) face high levels of social isolation, which contributes to several negative outcomes. We consider it is important to determine if bias against PWD contributes to social isolation. The purpose of this experiment was to determine if young adults consider PWD less desirable friends than able-bodied (AB) people. If PWD are seen as less desirable friends, it may be more difficult for them to form relationships with their peers and they may be more isolated. Participants were shown a profile of either a woman in a wheelchair or the same woman without a wheelchair and completed questions measuring their feelings about being friends with the woman. No significant differences were found between groups. Participants may have shown no explicit bias because of social desirability or because of the low level of commitment required by the experiment. Future research should examine implicit bias against PWD and bias in other types of interactions with PWD.

Keywords: disability, friendship, explicit bias, relationships, discrimination

Les études antérieures montrent que les personnes avec un handicap (PAH) font face à des niveaux élevés d'isolement social, contribuant à plusieurs conséquences négatives. Il est important de déterminer si les biais envers les PAH y contribuent. Le but de cette étude était d'investiguer si les jeunes adultes considèrent une PAH comme une amie moins désirable qu'une personne sans handicap. Si les PAH sont perçues comme des amies moins désirables, former des amitiés pourrait être plus difficile pour elles et elles seraient plus isolées. Le profil d'une femme soit sans ou avec un fauteuil roulant a été montré aux participants et un questionnaire mesurant leurs sentiments concernant l'entretien d'une amitié avec elle a été complété. Aucune différence significative n'a été trouvée entre les groupes. Les participants peuvent n'avoir montré aucun biais explicite en raison de la désirabilité sociale ou du faible niveau d'engagement relié à la tâche. Les études futures devraient examiner les biais implicites et les biais dans d'autres interactions avec les PAH.

Mots-clés : handicap, amitié, biais explicite, relations, discrimination

People with disabilities (PWD) are a minority group that faces bias and discrimination in the workplace, in the courtroom, and in other societal settings (Bruyère, 2000; Hahn, 1988; McConnell & Llewellyn, 2000). Bias may be especially present in the interpersonal relationships of PWD, including friendships. PWD consistently report high levels of loneliness. Studies on people with intellectual disabilities have found that they have few friends and experience high levels of isolation both in residential settings and in the community (Duvdevany & Arar, 2004; Rapley & Beyer, 1996). For example, Nosek, Hughes, Swedlund, Taylor, and Swank (2003) found that women with physical disabilities experience greater social isolation than women without disabilities. While the reasons for increased social isolation in PWD have not been extensively studied, one contributing factor could be discrimination by able-bodied (AB) people. If AB people are reluctant to form platonic relationships with PWD, then PWD may

have less access to friendships. Decreased access to friendships could in turn contribute to the social isolation that many PWD experience. The present study examined how bias affects friendships in PWD. More specifically, the study will focus on platonic attraction, which is the initial perception of someone as a desirable friend. The goal of this research is to determine whether AB people show bias in the form of decreased platonic attraction to PWD.

Discrimination Against People with Disabilities

The United States Government defines a person with a disability as “any person who has a physical or mental impairment that substantially limits one or more major life activities” (U.S. Department of Justice, 2009). This is a broad category that includes people with impaired physical functioning, mental illness, and developmental disabilities, although this study will focus primarily on the former.

Many researchers have hypothesized that PWD face both bias and discrimination from able-bodied people (Hahn, 1988; Hughes & Paterson, 1997). Bias is a belief or preference for or against something (Puhl & Brownell, 2001). For example, a person would be

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biased if they believed that PWD are less capable than able-bodied people. There are two forms of bias: explicit and implicit. It is explicit if someone is conscious of holding the biased view (Rojahn, Komelasky, & Man, 2008). The person may be able to openly articulate “I think PWD are less capable”. It is implicit if someone is not consciously aware of the bias (Rojahn et al., 2008). If a person tells themselves that they view PWD and AB people as equally capable, but unconsciously believes that someone at work is less capable because they have a disability, they are demonstrating implicit bias.

Understanding bias is important because it often leads to discrimination, which is when a person treats someone unfairly because of bias they hold toward that person (Puhl & Brownell, 2001). If a person acts on their belief that PWD are less capable, for example, by deciding not to hire someone who uses a wheelchair, then they are discriminating against the person in the wheelchair.

Studies have confirmed PWD face discrimination in many parts of their life (Ali et al., 2013; Bruyère, 2000; McConnell & Llewellyn, 2000). In particular, extensive research has been performed on PWD in the workplace. In a survey administered to a random sample of human resources and equal employment opportunity personnel, 23% of those surveyed in the private sector and 43% of those surveyed in the federal sector thought attitudes or stereotypes among co-workers or supervisors toward PWD were a major barrier for PWD in their own company (Bruyère, 2000). In another survey of almost 30,000 employees from 14 companies, Schur, Kruse, Blasi, and Blanck (2009) found that employees with disabilities had significantly lower pay, job security, and participation in decisions than did their AB coworkers.

There is also evidence that parents with intellectual disabilities are especially vulnerable to discrimination during child protection proceedings. A review paper by McConnell and Llewellyn (2000) showed that stereotypes that portray people with intellectual disabilities as inherently unfit or incompetent to raise children lead to the removal of many children from the care of their disabled parents, even in cases where there was little or no evidence of harm to the child. In a sample of 79 United States parents with intellectual disabilities, the State had removed 103 out of 226 children (45.5%). In some states, discrimination was actually codified into law through statutes that made it easier to terminate the parental rights of individuals with intellectual disabilities.

Bias Against PWD in the Formation of Interpersonal Relationships

Bias against PWD may also impact their ability to form interpersonal relationships. If AB people hold negative views about PWD, they may be less likely to want to form a relationship with PWD. Research on characteristics outside of disability status suggests that bias does have a strong impact on friendship formation. Marsden (1988) examined survey data on romantic and platonic relationships and found that people in close relationships show a high level of homogeneity in their race/ethnicity, religious group, age, and level of education. The authors suggested that this homogeneity reflected a larger preference for people who are perceived as similar to oneself, or as part of one’s “in-group”. It is possible that similar in-group preferences could lead AB people to rebuff potential relationships with PWD.

While Marsden (1988) examined fully-formed friendships, the initial desire to form a friendship may also be strongly shaped by the social perception of someone as a desirable friend. An experiment by Rothbart, Evans, and Fulero (1978) demonstrated that social perception can be strongly influenced by stereotypes when asking participants to recall facts that were given on a projector screen about a group of men. Participants who were led to believe that the men in the group were either friendlier or more intelligent than average had enhanced recall for facts confirming that perception. If adults are influenced by negative stereotypes about PWD, then they may be more cognizant of information that confirms those negative stereotypes when interacting with PWD and be less likely to pursue a platonic relationship with PWD.

Several studies have examined how bias against PWD might impact relationship formation in the context of adult romantic attraction. Romantic attraction is defined as someone’s perceived desirability as a romantic partner (Campbell, 1999). Man, Rojhan, Chrosniak, and Sanford (2006) examined the effect that disability status had on explicit, or consciously held, appraisals of romantic desirability by showing college students photos and profiles of 16 young adults, half of whom were described as having a disability. Participants were asked to rate their romantic attraction to the person in each profile by completing Campbell’s *Romantic Attraction Scale* (1999). Their research revealed that participants rated disabled and non-disabled peers as equally attractive.

The experiment was later repeated by Rojahn et al., (2008), but with a single alteration. In addition to the primary measures of the first experiment, participants completed a test of implicit bias against PWD, which

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was designed to measure participants' unconscious biases rather than their self-reported beliefs. Once again, participants rated the disabled and non-disabled photos as equally attractive. However, the participants showed a clear implicit bias against PWD.

Rojahn and colleagues' (2008) results could indicate that explicit bias against PWD differs from implicit bias. The primary measure of the experiment was an explicit measure because participants were asked to make a conscious decision about their levels of romantic attraction to each profile. In contrast, implicit biases are outside of conscious awareness. The fact that the experimenters found significant results for the implicit but not the explicit bias measure could indicate that adults do hold biases against PWD, but that they are outside of their conscious awareness.

However, the discrepancy between the measures of explicit and implicit bias may also have been affected by the design of the experiment. Participants might have thought that researchers were unlikely to have included eight profiles of PWD simply by chance. The high number of PWD and the fact that participants were asked five explicit questions about their levels of attraction to each individual made it fairly obvious what the experiment was measuring, even if participants were not explicitly informed of its purpose. Participants may have discerned that the true purpose of the experiment was to measure bias against PWD. They could have been motivated by this knowledge and by the social undesirability of appearing prejudiced to conceal potential explicit bias they might have otherwise expressed. In other words, the participants may have had conscious biases against PWD that they were able to successfully hide from the researchers.

Bias Against PWD in Friendships

The same biases against PWD that were found in the formation of adult romantic relationships may also be present in relationships without a romantic component, or platonic relationships. Discrimination against PWD by AB people has also been well documented in the formation of childhood and adolescent friendships. Research performed by Weiserbs and Gottlieb (2000) showed that adolescents discriminated against peers who were perceived to have permanent physical disabilities. In their experiment, adolescents were told that a new student would be joining their class and that the student used a wheelchair either permanently or only temporarily. Students were more willing to befriend a classmate in a wheelchair due to a temporary injury than a classmate who was a permanent wheelchair user.

In another study, Nadeau and Tessier (2006) surveyed children with cerebral palsy and their classmates about who they considered a desirable playmate. Their research found that students with cerebral palsy, especially if they were female, had lower social status and fewer reciprocal friendships than did their non-disabled peers.

Although research in children has found clear evidence of bias and discrimination against PWD, little to no research has examined the impact of bias on friendship formation in adults with disabilities. If bias against PWD does exist, which would impact the formation of friendships, it could contribute to social isolation, or to a severe deficit in contact with other people and the outside world, which researchers have documented in many PWD (Nosek et al., 2003).

Social isolation and bias against PWD in adult friendships is important because platonic relationships are essential for mental and physical well-being. Studies that found high levels of social isolation in women with disabilities also revealed that social isolation can contribute to negative outcomes such as less intimacy and less health-promoting behaviors (Duvdevany & Arar, 2004; Nosek et al., 2003; Rapley & Beyer, 1996). Research on African Americans, another minority group that faces bias and discrimination, found that close and supportive friendship ties are associated with lower rates of depression (Taylor, Chae, Lincoln, & Chatters, 2015). One meta-analytic review even found that people with strong social relationships show significantly decreased risk of mortality (Holt-Lunstad, Smith, & Layton, 2010).

Despite the mental and physical importance of adult friendships, most research on adults with disabilities has focused on romantic relationships (Man et al., 2006; Rojahn et al., 2008). Past research suggests that friendship relationships differ from romantic relationships in both attachment style and the needs satisfied by the relationship (Overall, Fletcher, & Friesen, 2003). The differences between the two relationship types make it difficult or impossible to draw conclusions about one type based on research that has been performed on the other type.

Because of the differences between romantic and platonic relationships and because of the many benefits provided by friendships, it is important to perform research on platonic relationships and how they are affected by bias against PWD. Research on bias against PWD in platonic relationships could help researchers understand how bias differs between different types of relationships and how to design effective interventions that decrease bias and

discrimination by specifically targeting the unique characteristics of each type of relationships.

The Present Research

Whether AB people avoid forming potential platonic relationships with PWD is an important first step in determining if discrimination against PWD contributes to the increased level of social isolation experienced by PWD and potentially to finding avenues to decrease that isolation. The present research focused on the immediate perception of someone as a desirable friend, which is often the very first step in the friendship process. By studying the early steps of friendship formation, it may be possible to understand the factors that push AB people toward or away from forming friendships with PWD. This could lead to the development of interventions that could potentially stop discrimination before it ever begins.

This initial step in friendship formation will be studied using platonic attraction, which is defined as the perception of someone as a desirable friend. If Person One strongly believes that they would like to be friends with Person Two because of Person Two's appearance, hobbies, personal characteristics, or any other combination of factors, then Person One has a high level of platonic attraction toward Person Two. If Person One believes strongly that they would not like to be friends with Person Two, then Person One has a low level of platonic attraction toward Person Two. Platonic attraction is similar to the concept of romantic attraction, which has been extensively studied by researchers interested in romantic and sexual relationships (Campbell, 1999; Feingold, 1990; Fisher, Aron, Mashek, Li, & Brown, 2002; Russell, Franz, & Driscoll, 2001).

A person's initial platonic attraction toward someone is likely an important factor in whether they become friends. Research has shown that people make judgments about characteristics like attractiveness, likeability, and trustworthiness after being exposed to an unfamiliar face for only 100 milliseconds (Willis & Todorov, 2006). If a person's initial impression of a new acquaintance is negative, they are unlikely to pursue a friendship with that person. In other words, if an individual has a low level of platonic attraction to someone, they will less likely become friends.

This initial impression may also be where PWD face the most bias and are the most disadvantaged in forming new friendships. Hahn (1988) identified the importance of personal autonomy and physical attractiveness in western society. Individuals living in westernized nations internalize autonomy and physical attractiveness ideals to the extent that violations of these norms cause Westerners to experience

discomfort. Hahn theorized that PWD, by violating both these norms, cause an instantaneous sense of anxiety, or negative "gut reaction" in AB people who encounter them. In the first encounter, the most salient feature of a PWD according to AB people is often their disability status, especially if the disability involves the person's physical appearance. During the first encounter, AB people have no previous personal experience or familiarity with the person with a disability, their personality, their interests, or any other factors that could counteract initial anxiety based on the physical appearance of the PWD. Their negative gut reaction could therefore play an outsized role in their initial platonic attraction to PWD and reduce the possibility that PWD will be viewed as valuable platonic partners. We hypothesized that AB young adults would give a higher rating of platonic attraction, or someone's perceived desirability as a friend, to other AB people than to PWD.

Method

Participants

The participants were 96 young adults enrolled through convenience sampling. Participants were recruited from an introductory psychology class at a large Midwestern University and through social media. Participants did not receive compensation for completing the experiment. The mean age of the participants was 23 ($SD = 3.23$), and all participants were between the ages of 18 and 30. Seventy-seven participants (80%) identified as female and nineteen participants (20%) identified as male. The majority of the participants identified as Caucasian (82%; $n = 79$), Asian and Caucasian (5%; $n = 5$), or Hispanic (4%; $n = 4$). In addition, three participants identified as Asian (3%), two participants identified as Black (2%), one participant identified as Middle Eastern (1%), and two participants preferred not to respond (2%).

Materials

The experiment was completed using an online Qualtrics survey that participants could access using a computer or smart phone. The survey included the profile of five college students. Each profile included a photograph of the student and a short paragraph about them. The profiles were adapted from Rojahn and colleagues (2008).

Participants answered five questions that were slightly rephrased about their platonic attraction to the person in each profile on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The five rating scales were adapted from the *Romantic Attraction Scale* (RAS) developed by Campbell (1999) and used by Man and colleagues (2006) and Rojahn and colleagues (2008). The scales were altered

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by changing the term “dating partner” to “friend” and the term “date” to “be friends”. For example, the question “*How desirable would you find this person as a dating partner?*” was changed to “*Louise would be a desirable friend.*” The other questions, including “*I would feel good about myself if I was friends with Louise*” and “*My friends would approve of me if I was friends with Louise*”, were also designed to measure aspects of platonic attraction. Chronbach’s alpha for this scale was .86.

Considering one of the goals of this study was to determine why previous studies had not detected explicit bias against PWD (i.e., because of study design or because they were examining romantic, rather than platonic attraction), an explicit measure of discrimination was chosen. In addition, previous experiments on romantic attraction toward PWD used the RAS. Because this study was designed in part to determine whether a more rigorous design would lead to different results, it was decided to hew as closely as possible to the materials that previous studies used as their dependent variable.

Procedure

Participants were randomly assigned to the control or the experimental group. All participants viewed the profiles of five college students that included a picture of the student and a short description about them. The five profiles presented three women and two men of different races. It was expected that the relatively large number of distractor items and that the profiled people varied across several different demographic factors would make it more difficult for participants to ascertain the purpose of the experiment. Therefore, it would minimize demand characteristics. The profiles were shown in a random order to prevent order effects. Four of the profiles that the participants viewed were identical across both conditions and were used as distractor items. For the fifth profile, participants in the experimental group were shown a photograph of a woman in a wheelchair and participants in the control group were shown a photograph of the same woman without a wheelchair. The profile included the same description about the woman, but did not mention a disability.

Immediately after viewing each profile, participants completed five rating scale questions about how they would feel about being friends with the college student in the profile. This experiment was designed to examine participants’ first impressions about PWD when considering forming a potential friendship. Therefore, the rating scales were on a separate screen from the profiles in order to prevent participants from over-analyzing their responses.

After completing the experiment, participants were shown a debriefing form that explained the purpose of the experiment and gave them the option of having their data discarded. No participant chose to have their data removed from the experiment. The experiment was conducted ethically and followed all institutional guidelines for research with human participants.

Results

Our hypothesis was that participants would express lower levels of platonic attraction to a person with a disability than to an AB person. To test our hypothesis, the scores from the five rating scale questions for the wheelchair/no wheelchair profile were averaged to create a platonic attraction score (PAS) for each participant. An independent samples *t*-test was performed to compare the PAS of the experimental and control groups. If participants exhibited disability prejudice, then the PAS of the experimental group should have been lower than the PAS of the control group. The independent samples *t*-test showed no significant differences, $t(94) = .32$, $p = .746$, between the group that saw the profile with the wheelchair ($M = 5.38$, $SD = 0.72$) and the group that saw the profile without the wheelchair ($M = 5.42$, $SD = 0.65$).

An exploratory analysis was performed to determine whether there were any differences between the different “aspects” of platonic attraction, as measured by the five different rating scale questions. A multivariate analysis of variance (MANOVA) was used to compare the experimental and control groups for each of the rating scale questions. If participants exhibited disability prejudice on any individual question, then the average score given for that question should have been lower for the wheelchair group than for the no wheelchair group. There was no significant differences, $F(5, 90) = 1.71$, $p = .141$; Pillai’s Trace = .09, partial $\eta^2 = .09$, between the group that saw the profile with the wheelchair and the group that saw the profile without the wheelchair. See Table 1 for the complete results and descriptive statistics.

It is possible that the condition (i.e., experimental or control) that each participant was assigned to affected their rating of platonic attraction for the control profiles as well as the wheelchair/no wheelchair profile. For example, it is possible that participants in both conditions rated the wheelchair/no wheelchair profile similarly but participants in the wheelchair condition rated the control profiles more highly than participants in the no wheelchair condition. If this were the case, it would support the hypothesis that participants exhibited lower levels of platonic attraction toward disabled than non-disabled profiles.

Table 1

Results of Multivariate Analysis of Variance (MANOVA): Comparing Ratings of Platonic Attraction for the Wheelchair and No Wheelchair Conditions

Question	Condition	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i> ²	<i>F</i>	<i>p</i>
I find Louise attractive	No wheelchair	5.09	0.92	43	4.44	4.28	.041
	Wheelchair	4.66	1.09	53			
	Total	4.85	1.04	96			
Louise would be a desirable friend	No wheelchair	5.60	0.88	43	0.21	0.27	.603
	Wheelchair	5.70	0.87	53			
	Total	5.66	0.87	96			
I would actually like to be friends with Louise	No wheelchair	5.30	1.10	43	0.54	0.53	.470
	Wheelchair	5.45	0.93	53			
	Total	5.39	1.01	96			
I would feel good about myself if I was friends with Louise	No wheelchair	5.47	1.01	43	0.27	0.29	.590
	Wheelchair	5.36	0.92	53			
	Total	5.41	0.96	96			
My friends would approve of me if I was friends with Louise	No wheelchair	5.65	0.87	43	0.10	0.18	.733
	Wheelchair	5.72	0.99	53			
	Total	5.69	0.93	96			

Note. *M*² is the pooled mean.

To test for this possibility, the scores for all the rating scales from the four profiles that remained constant across groups were averaged to create a PAS pertaining to the control profiles for each participant. A 2 (control/experimental condition) X 2 (control profiles/target profile) mixed analysis of variance (ANOVA) test was performed. The within-subject variable of the ANOVA was the PAS (i.e., we compared each participant’s PAS pertaining to the wheelchair/no wheelchair profile with their PAS pertaining to the control profiles). The between subject variable of the ANOVA was the experimental condition (i.e., compared the PAS pertaining to the wheelchair/no wheelchair profile for the wheelchair and no wheelchair conditions). No statistically significant interaction was found, $F(1, 94) = .78$, $p = .381$. Simple main effects analysis showed that participants had a significantly higher PAS pertaining

to the control profiles than PAS pertaining to the wheelchair/no wheelchair profile ($p < .001$), but there was no difference in PAS pertaining to the wheelchair/no wheelchair profile between the wheelchair and no wheelchair groups ($p = .348$). See Table 2 for descriptive statistics.

Discussion

Research has shown that PWD suffer from high levels of social isolation, which in turn leads to negative health outcomes such as less health-promoting behaviors. One factor contributing to social isolation experienced by PWD could be bias by AB people. If AB people are biased against PWD, then they may be less likely to form platonic relationships with PWD, leaving PWD with fewer friends and a smaller social support network. The goal of this study

Table 2

Mixed Analysis of Variance (ANOVA) Comparing Platonic Attraction Score (PAS) of Wheelchair vs. No Wheelchair Conditions and PAS Pertaining to the Wheelchair/No Wheelchair Profile vs. PAS Pertaining to the Control Profiles

	Condition		
	No wheelchair ^a	Wheelchair ^b	Total
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Wheelchair vs. No wheelchair PAS	5.42 (0.65)	5.38 (0.72)	5.40 (0.69)
Wheelchair/No wheelchair vs. Control PAS	5.09 (0.82)	4.89 (0.88)	4.98 (0.86)

Note. ^a*n* = 43, ^b*n* = 53. There was no statistically significant interaction, $F(1, 94) = 0.78$, $p = .381$; PAS pertaining to the control profiles was significantly greater than PAS pertaining to the wheelchair/no wheelchair profile, $p < .001$; There was no difference in PAS pertaining to the wheelchair/no wheelchair profile between the wheelchair and no wheelchair groups ($p = .348$).

was to determine whether bias against PWD exists during friendship formation. We hypothesized that young adults would report lower levels of platonic attraction to a woman in a wheelchair (i.e., rate her as a less desirable friend) than to the same woman without a wheelchair. The hypothesis was not supported by the experimental results. No significant differences were found between the control and experimental groups. The experiment did show a significant difference between the participants' PAS pertaining to the experimental profile and participants' PAS pertaining to the control profiles. Specifically, participants in both conditions gave a higher average rating of platonic attraction to the control profiles than to the wheelchair/no wheelchair profile.

The results were consistent with the findings of Man and colleagues (2006) and Rojahn and colleagues (2008) that young adults do not show an explicit bias against potential romantic relationships with PWD. Although the results of the experiment are in line with Rojahn and colleagues' findings, they contradict Hahn's theory (1988) that bias against PWD is based on a negative gut reaction. Because the present study examined platonic attraction, which is based on an individual's very first impressions about the desirability of friendship, any bias due to a negative gut reaction should have been maximized. No bias was found whatsoever. The results of this experiment also differ from those of other studies that have found that AB people do discriminate against PWD in interpersonal relationships (Nadeau & Tessier, 2006; Weiserbs & Gottlieb, 2000). Discrimination, by definition, is a prejudicial action that is taken because of bias (Puhl & Brownell, 2001). Therefore, findings that show discrimination but not bias appear to create a contradiction.

One explanation for this apparent contradiction could be the social undesirability of most forms of bias. Because most types of bias are considered socially undesirable, people may attempt to maintain a positive self-image by consciously rejecting the possibility that they are biased against someone. A conscious rejection of bias has been supported by research on other marginalized groups. Research on women and people of color has found that people often are not consciously aware of being biased. Instead, they justify potentially discriminatory actions as being based on something other than bias (Barreto & Ellemers, 2005; Gaertner & Dovidio, 1986).

These results could also apply to bias against PWD. In the case of disability, people may consciously believe that they view and treat PWD and AB people equally. Even if people do not hold explicit biases against PWD, they may still discriminate against PWD and simply self-justify their actions as

being based on something other than bias. For example, someone might think, "I do not like to spend time with Suzie because we have different hobbies. Not because she has a disability". If most people are not consciously aware of holding biases against PWD, it would explain why the current study found no bias against PWD. Because the present study only measured explicit bias, only participants' conscious belief that they were not biased against PWD would have been measured. The study did not measure any biases held unconsciously by participants nor if participants discriminated against PWD because both of these measures fall outside the construct of explicit bias.

Strengths of the Present Research

The greatest contribution of the present study was its introduction of the concept of platonic attraction. Romantic attraction has been extensively studied and has been useful in examining a wide variety of subjects including narcissism and bias against PWD (Campbell, 1999; Man et al., 2006; Rojahn et al., 2008). However, no previous research has been done on the parallel concept of platonic attraction. Platonic relationships, like romantic relationships, are an important part of most people's social support networks. By providing a fuller social support network, friendships can reduce social isolation and prevent many of the negative health consequences that social isolation causes. The concept of platonic attraction provides an additional avenue for researchers to study these important yet often overlooked relationships.

Another strength of the present research was its experimental design. The experiment was designed to minimize demand characteristics, which have created problems in previous experiments on bias against PWD in interpersonal relationships. Demand characteristics occur when participants consciously or unconsciously change their behavior to match what they believe the experiment wants them to do. In the case of the present research, participants who guessed that the experiment was designed to examine attitudes toward PWD might attempt to hide any bias toward PWD because bias is generally considered undesirable. It was therefore necessary to obscure the true purpose of the experiment. In post-experiment interviews with several of the participants, most said they had believed that the independent variable was race or physical attractiveness. Therefore, the design seems to have been effective, which would most likely decrease the social pressure that participants felt to rate the woman in the wheelchair condition as a desirable friend.

Limitations of the Present Research

Even though the present study was designed to minimize demand characteristics, it is still possible that participants' responses were affected by social desirability bias. Most types of discrimination are considered socially undesirable, which may have caused participants to alter their responses. Although the anonymous nature of the experiment should have minimized social desirability bias, it may still have been present to some extent.

In addition, despite having successfully obscured the experiment purpose, the study design may also have introduced some uncontrolled bias. In order to hide the focus of the study, only one experimental profile and four control profiles were used. The use of only one experimental profile could have introduced bias because there were differences in the pictures and descriptions of the experimental and control profiles that were not controlled for. The importance of these uncontrolled biases is made clear by only significant results of the study; in both the wheelchair and no wheelchair conditions, the experimental profile had a significantly lower platonic attraction rating than the four control profiles. Because no interaction was found, this difference was most likely due to differences in how the students in the different profiles were described, such as their appearance, hobbies and personalities, and was not related to disability status.

These uncontrolled differences in appearance and personality could have obscured any significant differences that were caused by bias against PWD. Future studies should use a slightly altered design in order to eliminate uncontrolled differences. Studies should continue to use only one experimental profile in order to guard against demand characteristics. However, each picture should have a wheelchair counterpart. Participants would be randomly assigned to a condition in which one of the profiles is the experimental profile (i.e., each profile would be the "disabled" profile for a different group of participants). Because every participant would still see only one picture of a PWD, participants would remain unaware of the study's real goal and the differences between the pictures and descriptions would be controlled.

Uncontrolled differences between the experimental and control profiles were the experiment's most important, but not only limitation. The experiment may also have been limited by ceiling effects. While there was some variation in the responses, both groups rated the person in the wheelchair/no wheelchair profile as an overall desirable friend and responses clustered toward the high end of the seven-point scale ($M = 5.42$, $SD = 0.68$). It is possible that a halo effect caused by the profile's other desirable characteristics

may have eclipsed any effect caused by disability status.

Despite these caveats, it is likely that no significant effect was found because no explicit bias existed in the specific situation the experiment was designed to measure. The sample means for the two groups were almost identical and, because of the relatively large sample size, the similarity most likely was not caused by random error. In addition, results of the study were consistent with other similar studies on explicit bias when rating profiles of college students (Man et al., 2006; Rojahn et al., 2008).

Future Directions

While it is possible that bias against PWD does not exist, it is more likely that the type and amount of bias people show vary within different circumstances. The lack of bias found in this experiment could be a result of the relatively low level of commitment required from participants. Rating someone as a desirable friend is much different than agreeing to actually befriend that person. If participants were asked to make a larger commitment, such as going on a trip or sharing an apartment with PWD, participants might have shown more bias. This would be consistent with the findings of Weiserbs and Gottlieb (2000) that adolescents were reluctant to befriend a disabled peer. More research is needed to determine whether a similar effect exists in adults. Research could also examine whether people's explicit statements about befriending PWD differ from their actual behaviors and whether people demonstrate different amounts of bias or discrimination based on the level or type of commitment that they are asked to make.

It is also possible that, although the study did not find explicit bias against PWD, implicit bias against PWD does exist. This experiment confirmed previous studies that did not observe an explicit bias against PWD on rating of relationship desirability and extended their findings to include platonic relationships. This study suggests that, at the very least, most people are cognizant that they should not express feelings of bias against PWD. However, it remains to be seen if the absence of explicit bias corresponds to an absence of implicit bias. The correlation between measures of explicit and implicit bias is often low, so the fact that this experiment did not find any explicit bias does not preclude the influence of implicit bias (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005).

In contrast to explicit bias, implicit bias is outside of conscious awareness. Even though people are not aware of having implicit biases, they may still act on those biases by performing a discriminatory action. In fact, implicit bias has been shown to reliably predict

behavior (Hoffman et al., 2005; Dovidio, Kawakami, C. Johnson, B. Johnson, & Howard, 1997). For example, Dovidio and colleagues (1997) performed a series of experiments that showed that, while there was little association between Caucasians' explicit and implicit racist beliefs toward Black people, implicit beliefs predicted performance on spontaneous race-related tasks (e.g., completing word stems after a racial prime) and non-verbal behaviors (e.g., blinking and maintaining eye contact) while interacting with a black person. Implicit bias may also predict behavior in the context of friendship. According to Towles-Schwen and Fazio (2003), implicit attitudes toward African Americans predicted white participants' comfort and willingness to interact with African Americans in unscripted settings. Because the majority of platonic interactions occur in unscripted settings, implicit attitudes could impact someone's willingness to repeatedly interact with and/or become friends with African Americans and other marginalized groups such as PWD.

Implicit bias has primarily been studied in the context of marginalized groups such as people of color and women, but it may also affect behavior toward PWD. Tentative support for the existence of implicit bias against PWD comes from Rojahn and colleagues (2008). They did not find explicit bias against PWD in romantic relationships, but did find that college students show an implicit bias against PWD. This implicit bias could impact whether AB people see PWD as desirable friends. For example, someone may tell themselves that they do not spend time with a person with a disability because they have different interests, while in reality it is because the person's disability makes them uncomfortable. The presence of implicit bias could explain why studies have shown discrimination against PWD in interpersonal relationships, but no explicit bias against PWD.

Because studies have now failed to detect explicit bias in several different relationship contexts, it is likely that any potential avoidance of relationships with PWD is largely the result of implicit biases, rather than conscious or expressed beliefs. Future studies should focus on determining whether people do exhibit implicit bias against PWD in the context of platonic relationships and, if so, how implicit bias affects behaviors such as friendship formation. If implicit bias is shown to impact friendship behaviors, research and social interventions should focus primarily on decreasing implicit bias and specific discriminatory actions against PWD, such as exclusion from social activities or other opportunities, rather than on explicit bias.

Conclusion

The purpose of the present research was to examine bias against PWD by AB people. This experiment, which used stricter methodologies than previous studies, was able to replicate the results of experiments finding no explicit bias against PWD in ratings of romantic attraction and expand them to include platonic attraction. This could suggest that implicit biases may play a larger role in discrimination against PWD than do explicit attitudes. For this reason, bias may only become clear when people are asked to make an actual commitment to spend time with PWD, rather than when participants are asked hypothetical questions about whether they would enjoy spending time with PWD. Future research should focus on the use of implicit and behavioral measurements to detect bias, rather than explicit measures. Social interventions should also focus on altering implicit beliefs and on concrete behavioral results, such as increased social time spent with PWD, rather than on people's reported attitudes toward PWD.

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