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Explicit and Implicit Attitudes towards People with Disabilities

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Objective: *Explicit and implicit attitudes play a role in disability discrimination. The purpose of this study was to look at the relationship between explicit and implicit attitudes towards people with disabilities.* ***Method:*** *Participants (N = 78) were asked to complete an online survey with 10 questions asking them to rate the extent to which they agree or disagree with questions measuring explicit attitudes. Participants then completed an Implicit Association Test (IAT) looking at disabilities. The IAT measured participants' accuracy and speed when sorting pictures of either abled-body or disabled-body and words associated with "good" or "bad." Participants' scores on each measure were used to run a correlational analysis.* ***Results:*** *The results showed a statistically nonsignificant positive relationship between explicit and implicit attitudes, r(76) = .095, p = .4. Participants who did not know someone with a disability had a stronger correlation, r(76) = .2, p = .2, than those who did, , r(76) = .03, p = .2.* ***Conclusions:*** *Looking at the average explicit score, M = 60, can show that participants explicitly have positive attitudes towards people with disabilities. While the implicit average score, M = -.63, shows participants might implicitly favor people without disabilities over people with disabilities. These scores reveal that people may explicitly act one way but implicitly think the other. Being aware of these attitudes can help us to open up and talk more about the biases people with disabilities face and help reduce the stigma.*

In 2017, the number of people living in the United States with a disability was 40,675,305 (Lauer & Houtenville, 2018). Even though there are many people with disabilities in society, there is still stigma and discrimination surrounding disabilities, which could be due to negative explicit and implicit attitudes some may have towards people with disabilities. Explicit attitudes or biases are ones we are aware of at the conscious level, while implicit attitudes or biases are at the unconscious level; we are not aware of them. These two types of biases can help to explain different behaviors people might have.

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Friedman (2019) conducted a study looking at the implicit and explicit biases family members of people with disabilities might have. To test this, Friedman (2019) used the Disability Implicit Association Test (IAT) (Greenwald, et al., 1998). This version of the IAT measures the response time a person has when answering the questions as well as the accuracy of their responses to detect implicit biases. Friedman (2019) found that while family members of people with disabilities may believe they have no negative explicit biases toward people with disabilities, they still have negative implicit biases towards people with disabilities.

Kallman (2017) looked more in-depth at implicit biases towards people with disabilities and if negative biases were changeable. Using an online participant pool at a university, participants were sorted into either a control group or experimental group. Each group was asked to complete the disability IAT (Greenwald, et al., 1998). The control group took the IAT and completed a survey afterwards to answer more questions regarding explicit attitudes. In the experimental group, participants watched three short videos depicting people with disabilities showing their life and how people with disabilities are not defined by their illness but by their accomplishments and talents (Kallman, 2017). After the videos, the experimental group took the IAT and then followed up with the survey. Kallman (2017) found that there was not a statistically significant difference between the groups. From this study Kallman (2017) seemed to notice that implicit biases are more engrained and difficult to change than explicit biases.

Coleman et al. (2015) wanted to look at whether people with disabilities who have an assistance animal receive less negative implicit bias than a person with a disability without an animal. The participants of this study were 244 college students who first took a survey on animal ownership and then were asked to complete a Disabilities and Assistance Dog IAT. This IAT showed pictures of people with a disability with and without a service animal. Coleman et

al. (2015) found a higher positive implicit bias towards people with disabilities with an assistance animal or dog than without. This study shows that animals can help increase positive interactions with people who are disabled (Coleman et al., 2015). This also shows that environmental factors can increase or decrease discriminatory biases towards people with disabilities.

Another use of a disability IAT comes from VanPuymbrouck et al. (2020). They wanted to look at explicit and implicit attitudes healthcare professionals had towards people with disabilities and how that could determine patients' interactions and decisions when it comes to healthcare. VanPuymbrouck et al. chose to look at existing data from Project Implicit's Disability IAT. From the database, the researchers had chosen 25,006 participants who were healthcare professionals including physical therapy assistants, technicians, nursing and home health assistants, and practitioners. For the explicit measure VanPuymbrouck et al. also used questions from Project Implicit in which participants rated their preference towards people with disabilities and people without disabilities using a Likert scale.

VanPuymbrouck et al. (2020) also looked at different correlates of attitudes towards people with disabilities. These included things like gender, age, ethnicity, political views, and whether they were close to someone with a disability. The researchers found that participants who had a family member or knew someone with a disability had lower explicit scores than participants who did not. VanPuymbrouck et al. found that 83.6% of providers implicitly preferred abled people. When looking at both attitudes, healthcare professionals had low explicit but high implicit attitudes towards people with disabilities (VanPuymbrouck et al., 2020).

One place where explicit attitudes towards people with disabilities can be seen commonly is in the workforce. Some examples could be unfair pay, selection of applicants, harassment, and

neglect of accommodations (McMahon et al., 2008). Many laws have been passed trying to decrease the amount of discrimination that people who are disabled face. The United States passed a law in the 1990s to try and combat discrimination called the Americans with Disabilities Act (ADA). A subsection of ADA specifically protects people from discrimination in job settings. This makes it illegal to deny a person a job, promotion, or accommodations based only on their disability. Companies have to legally grant accommodations for their employees as long as the request is reasonable (McMahon et al., 2008).

Years following the passing of the ADA, there is still discrimination towards people with disabilities. One study found the unemployment rate for people with disabilities was higher than for people without a disability. The rate of unemployment for people with disabilities was 14.2% where for abled people it was 9% (McMahon & McMahon, 2012). The amount of time unemployed was higher as well. For people with disabilities the average number of weeks spent without a job was 25, whereas the average amount of weeks for abled people was 21 (McMahon & McMahon, 2012).

In 1992, Australia passed a Disability Discrimination Act which made discrimination based on a person's disability illegal. This act helped to establish a way to file complaints and reports for people with disabilities who have faced discrimination (Darcy et al., 2016). Darcy et al. (2016) used data from the Australian Human Rights Commission's website to find information on cases and complaints filed. They looked at 987 cases, not only those based on disability discrimination, but other discriminations as well. Of all the cases they analyzed disability discrimination accounted for 37%. Additionally, 33% of these were filed due to unfair conditions in employment and jobs. Most of the cases based on disability discrimination came

from people with mobility disabilities, mental health related illnesses, and HIV/AIDS (Darcy et al., 2016).

While this law played a crucial role in making discrimination illegal, it did not solve the problem. In hopes of solving this issue even more, a law called the Fair Work Act was passed in Australia in 2009. This law was able to help give voices to employees who felt bullied or discriminated against at work (Allen, 2018). There are problems with the Fair Work Act, however; the main issue is the lack of a concrete definition for disability, which can make it easier for cases to be turned down and people to not get the help they need (Allen, 2018).

Graham et al. (2019) looked at pre-existing data from filed complaints of workplace discrimination, specifically discrimination towards people with disabilities. They collected their data from the Equal Employment Opportunity Commission and looked at four different categories regarding the types of disabilities: physical, behavioral, neurological, and sensory impairments. They also separated the allegation types into categories including harassment, suspension and demotion, layoff and termination, and benefits and wages (Graham et al., 2019). People with physical disabilities tended to file the most allegations in all of these categories, except for harassment. People with behavioral disabilities, which the researchers classified as mental illnesses and addiction impairments, had higher allegations in harassment than the other three categories of disabilities (Graham et al., 2019). This study further looks at how people with different types of disabilities might have different experiences with discrimination at their jobs and what discrimination looks like to them.

In Australia, employers can deny accommodation requests for people with disabilities if they think the accommodation will not help productivity, is unreasonable, costs too much, or if they do not think there is a legitimate disability present. Telwatte et al. (2017) asked a sample of

1,598 participants employed as managers or human resources employees to read 12 short stories about fake employees' requests for accommodations. The types of disabilities differed as well as the severity and cost of the accommodations and the researchers used physical and psychological disabilities in their study. The participants had to rate the accommodation request on many different factors, including legitimacy of the perceived disability, if they think the accommodation is necessary, the empathy they felt for the employee, and the perceived cost of an accommodation like the ones presented in real life. They also rated the accommodations on if they were reasonable and if they would grant the person the accommodation in real life (Telwatte et al., 2017). The results showed the greater the ratings for empathy, legitimacy, and necessity, the more likely the participant will accept the request. Telwatte et al. also found requests from those with physical disabilities had higher acceptance rates than requests pertaining to psychological disabilities. This again shows how different types of disabilities might be treated and discriminated against differently.

One study looked at disability discrimination, specifically hiring employees based on the certain type of disability they had (Gouvier et al., 2003). Gouvier et al. had 295 undergraduate participants who were majoring in business or related majors. The participants rated applicants for different jobs on factors such as assumed job performance and employability. The fabricated candidates for each job had similar backgrounds related to the position they were applying for and had a disability in one of four categories: head injury, developmental disability, back injury, or mental illness. Some of the job types this study used for the applicants to apply for included a janitorial job and a phone operator. Gouvier et al. found applicants with developmental disabilities were expected to have higher job performance ratings than those with head injuries or a mental illness. The applicants with back injuries had the highest rate of employment. Overall

results showed across the ratings, physical disabilities received higher scores than mental disabilities or illnesses (Gouvier et al., 2003). While people with disabilities in general can be discriminated against in the workforce, people with certain kinds of disabilities might receive more discrimination.

College students with disabilities can also face large amounts of discrimination. Deckoff-Jones and Duell (2018) looked at the types of disabilities a college student might have and how this can possibly change the accommodations they receive. Participants were 223 college students and were asked to read eight vignettes depicting people with different types of disabilities trying to receive accommodations. The types of disabilities included visible physical disabilities, invisible physical disabilities, psychiatric disabilities, and learning disabilities (Deckoff-Jones & Duell, 2018). After reading about the fake student, participants were asked to rate how appropriate they think a certain accommodation would be for each disability. Examples of some of the accommodations included the use of a handicap parking spot, relocating the class to a lower level, extra time during an exam, and extended time on a project or paper. Deckoff-Jones and Duell found that the appropriateness of an accommodation was impacted by the type of disability as well as the type of accommodation. The vignettes of students with an invisible physical disability or a psychiatric disability were less likely to receive an accommodation even if the symptoms addressed would be appropriate for a certain accommodation (Deckoff-Jones & Duell, 2018). The different type of disability that a person might have can increase the amount of explicit discriminatory biases they might face.

Wilke et al. (2019) also looked at disability discrimination on college campuses. Participants self-reported perceptions of disabilities and students with disabilities on their campus. Wilke et al. interviewed 24 residential students over four different colleges; participants

were asked to rate the degree of accessibility they felt the campus had, the accommodations they use, flexibility, and perceived faculty and staff awareness. The degree of awareness and responsiveness that faculty have can either benefit students or become more of a barrier for inclusivity (Wilke et al., 2019). From this study they found that while colleges are willing to work with accommodations, they seem to be generic and not tailored to the specific student which might not be the most helpful; when working on accommodations, abled faculty might overlook issues that people with disabilities might need (Wilke et al., 2019).

The present study aimed to determine the differences between explicit and implicit biases and their relationship with discriminatory attitudes towards people with disabilities. To measure explicit attitudes, this study used the Disability Rights Attitude Scale (Hernandez et al., 1998). Implicit attitudes towards people with disabilities was measured with an IAT (Greenwald, et al., 1998). I hypothesized that there would be a positive correlation between participants' discriminatory explicit attitudes towards people who have a disability and their discriminatory implicit attitudes towards those with a disability. That is, I predicted that as explicit attitudes increase so will implicit attitudes; and if explicit attitudes decrease, implicit attitudes will as well. I also predicted a stronger correlation between explicit and implicit attitudes if participants have or are close to someone with a disability than those who do not know someone with a disability. I predicted this because if a person has or is close to someone with a disability their explicit and implicit belief might be more similar due to being around someone with a disability.

Method

Participants

This study was been approved by the Psychology Program Scientific Review Committee and Lindenwood University's Institutional Review Board before being posted on the internet. Participants were recruited from two social media sites, Facebook and Reddit, as well as the Psi Chi website and through Jennifer Spellazza and the Center for Diversity and Inclusion at Lindenwood University. On Reddit, the survey was be shared via the subreddit, r/samplesize. This subreddit allows students to share their survey projects with other members of the subreddit. To take the survey, participants had to be on a computer with a keyboard and not a mobile device or tablet. If participants were on a device that was not compatible, a screen would pop up asking them to take the survey on a compatible device because of the IAT used.

There were 196 participants in the study; however, only 78 were usable. The other 110 participants did not complete the whole survey and their data could not be used. Out of the 78 participants whose data were usable, 55 identified as female, 22 identified as male, and 1 participant identified as nonbinary. The oldest participant in the study was 69 years old and the youngest was 19 years old, with an average age of 35. There were 47 participants who claimed themselves or somebody very close to them has a disability, where the other 31 said they did not have or know someone close with a disability.

Materials

The survey was created using Qualtrics. The survey contained an informed consent, which was the first thing the participants saw, the explicit and implicit measures, demographic questions, and a thank you statement.

Explicit Attitude Measure

The explicit measure looking at the attitudes towards people with disabilities came from the Disability Rights Attitude Scale (Hernandez et al., 1998). This scale asks questions about people with disabilities and the participant's beliefs towards them and accommodations. This study took 10 questions from the scale to incorporate into it. To answer these questions, a 7-point Likert scale, instead of 6-point like the original (1 is Strongly Disagree, to 7 which is Strongly Agree) was created. A point was added in this study to give participants a neutral choice; neither agree nor disagree. This scale was chosen because it specifically asked questions pertaining to explicit attitudes towards people with disabilities.

Implicit Attitude Measure

For the implicit attitude measure the study used an IAT (Greenwald et al., 1998) with the help from IATgen (Carpenter et al., 2019), a website that helps make IAT tests which can be inserted into Qualtrics. This website also has YouTube videos (Carpenter, 2017a, 2017b, 2017c, 2017d) showing how to make the IAT in more detail.

The test was broken down into targets and attributes. Targets are the two attitudes measuring implicit biases. The attributes are the stimuli which is either pleasant or unpleasant. These appeared on the IAT either alone or with the target biases measured. For this test, the attributes are called good or bad. The words chosen for good were adore, beautiful, friendship, joyful, kind, and lovely. The words chosen for bad were awful, detest, disgust, horrible, sadness, and tragic.

Demographic Questions

The survey asked three demographic questions. One of the questions asked was whether the participant or a loved one has a disability. This question was answered in yes or no form. This question was asked to answer one of my research questions. Other demographic questions included asking the participant's gender identity and age.

Procedure

Creation of the IAT for Disabilities Measure

Targets. The IAT uses targets to determine implicit biases, these are labeled as target A (abled) and target B (disabled) (Carpenter et al., 2019). For this test, instead of words, pictures were selected for the target categories. The disabled target had four pictures: crutches, a person in a wheelchair, a symbol for people who are deaf, and a person who is blind using a walking stick. The abled target had four pictures of a person golfing, a person walking, a person standing, and two children walking (see Appendix A for disabled and abled target pictures). The pictures were taken from Clker.com which has free clipart people can use (Clker).

IATgen (Carpenter et al., 2019) and Shinyapps (Applibs, 2019). When using IATgen it directs users to an app called Shinyapps to start making the test (Applibs, 2019). The page contains information to fill out including the test or survey's name and the attributes and targets. While working on this part of the survey, the YouTube video called "01- Building with Shiny." was used to understand everything (Carpenter, 2017a). After filling everything out on Shinyapps (Applibs, 2019), the survey was downloaded and created in a format compatible with Qualtrics.

Creation of the Qualtrics Survey

To import the IAT into Qualtrics the Qualtrics survey file button, which transfers the information into a QVF file, has to be checked. Once imported, the rest of the survey on was created. The informed consent was then created that will appear at the beginning of the survey. Afterwards the explicit measure was added which will come before the IAT. The last step was to create the demographic questions that succeeds the implicit measure as well as the thank you statement.

Study Procedure

If participants were on a device without a keyboard, they were shown the screen to take the survey on a compatible device. If participants were on a compatible device once they clicked on the link to the survey, they were shown the informed statement. Upon being shown the informed consent form, participants had the option to agree to participate or decline. If agree was selected, participants would be sent to the next part of the survey. If do not agree was selected, participants would be sent to the end of the survey and shown the thank you statement.

After they agreed to participate in the study, participants were met with the explicit measure questions. There were 10 questions total and they rated each question by how much they agreed or disagreed with the given statement. Once participants completed these questions, the disability IAT began. The IAT consisted of four trials where each trial showed different combinations of pairings between the target and the attributes as well as the position of the keys associated with each pairing. The screen that popped up had instructions for the participant to read on how to take the IAT. It asked the participants to place their left and right index fingers on the “E” and “I” keys. It mentioned there are two categories at the top of the screen, and that they

would have to use the keys to put an image or word in the correct category. If participants made a mistake a red X would appear, and they had to fix it to continue.

To begin, participants pressed the space bar, as mentioned on the screen, and were asked to complete it as fast as they could while making the least amount of errors. The first category they saw were the targets, disabled or abled, and they had to place the pictures in the correct categories. The next section was separating words into the two different attribute categories: good and bad. After doing this, the participants had both the targets and attributes at the same time (see Appendix B for an example). After completing the IAT, participants were asked to complete some demographic questions.

Once they had done all this, the survey was completed and the thank you statement appeared. This thanked the participants for being a part of the survey and explained the hypotheses of the study. This also included the primary investigator's contact information if participants were interested in learning more or would like to see the finished paper.

Scoring

Explicit Attitude Measure. To score the explicit attitude measure, I took each participant's answers and summed them up to get a number which would be considered the participant's explicit attitude score. If a person did not answer a question, it would result in a score of zero. Lower scores indicated higher explicit prejudicial attitudes than higher scores.

Implicit Attitude Measure. To score the implicit attitude measure, I went onto Qualtrics and clicked on the Data & Analysis tab. Once there I clicked export data and then selected the button "Use Legacy Exporter" and made sure the "CSV" button was checked. From there I clicked download and opened the IATgen website to get to the Shinyapps (Applibs, 2019).

When the Shinyapps (Applibs, 2019) loaded, I clicked the "Analyze IAT" tab. Next, I clicked the browse button and uploaded the file I got from Qualtrics containing the data. This gave a lot of information including the number of participants, *d*-score mean and standard deviation, *p*-value, and Cohen's *d*. It also gave participants' individual *d*-score means which is how I got their implicit measures score. If the score was positive then it means the participant had a preference towards target A, or the disabled target. If the score was zero, the participant had no preference and if the score was negative then the participant had a preference towards target B, or the abled target.

Data Analyses

To analyze the data, I used Excel and ran three different correlations. The first correlation I ran was on the sample's overall implicit and explicit scores. The next correlation was on the implicit and explicit scores of participants who said yes to having or knowing someone with a disability. The third correlation as on implicit and explicit scores of participants who said they do not have or know anyone with a disability.

Results

Among the participants in the study, a positive relationship was found between explicit attitudes and implicit attitudes, $r(76) = .095$, $p = .4$, however it was not significant. The correlation run for explicit and implicit attitudes of participants who have or know someone with a disability was positive, $r(76) = .03$, $p = .2$, this correlation was not significant as well. The last correlation run was on participants who did not have a disability or knew someone with a disability and there was a positive relationship between their explicit and implicit scores, $r(76) = .2$, $p = .29$, this was not significant.

Discussion

The first hypothesis for this study was a positive correlation between explicit and implicit attitudes towards people with disabilities. While the results of the study supported this hypothesis, the correlation was not significant. The second hypothesis was that the correlation between explicit and implicit attitudes would be stronger for people who have or are close to someone with a disability than those who are not. This hypothesis was not supported by the results, meaning that implicit and explicit scores were more closely related for people who did not know someone with a disability or have one themselves, than for people who did. These correlations were, however, weak as well.

The average explicit score was 60, which means that the participants had more positive explicit attitudes than negative. However, the average implicit score was -.63, meaning participants favored abled-body over disabled-body. This is different than what I hypothesized, which was that as explicit scores became more positive or higher, so would implicit. This might explain the weaker correlations that the study found. It also can show that people might explicitly act a certain way but implicitly think another which was found in other studies. Friedman (2019) used an IAT to look at family members of people with disabilities implicit attitudes. While people who are close to those with a disability might believe they have no explicit attitudes or biases, there still might be some implicit attitudes they are unaware of.

Another reason for these results could be the explicit measure. These questions could have given away the researcher's intended outcome and led the participants to answer a certain way and not how they really felt. This could explain why there were so many high positive explicit attitudes without flexibility and variability in scores.

For future studies, I would recommend using a different explicit measure that is more subtle and can make participants feel more welcomed in answering how they feel. There were also issues with the implicit measure. Because of the IAT, participants had to use a computer with a keyboard, which narrowed down the number of participants who took part in the study. It made it hard to get participants and I would recommend using a measure that is mobile friendly as well if wanting to do an online study. Since the sample was a smaller sample, the results might not be found in the population. This survey can contribute to current research by having both an explicit and implicit measure on discriminatory attitudes towards people with disabilities in one study.

This study can help to try and decrease negative attitudes towards people with disabilities. It seems that people who are close to someone with a disability might still have negative implicit attitudes. If aware of this, it can help to alter these biases. Providing the public with knowledge regarding disabilities and informing them on stereotypes and biases that are incorrect can change how society views people with disabilities.

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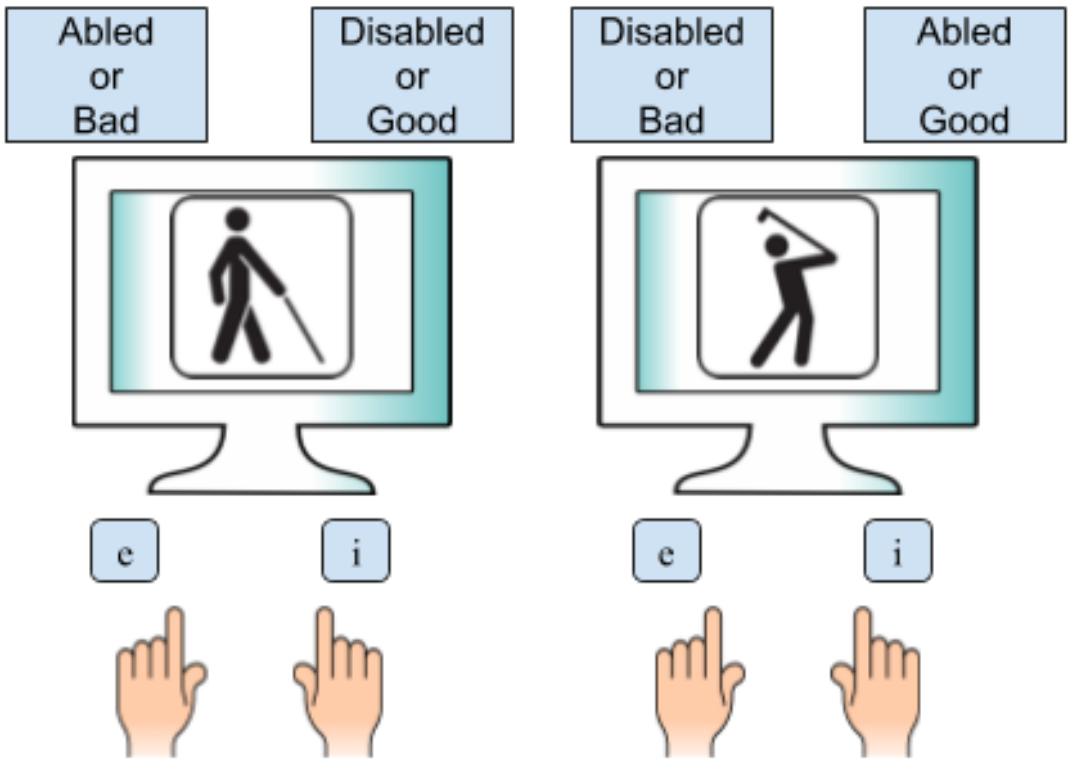
Appendix A

Disabled Target Pictures

Abled Target Pictures

Appendix B

Example of the IAT (Clker)



FIN.

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