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Towards greater understanding of addiction stigma: Intersectionality with race/ethnicity and gender

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Abstract

Background—In spite of the significant burden associated with substance use disorders, especially among persons who inject drugs (PWIDs), most affected individuals do not engage with any type of formal or informal treatment. Addiction stigma, which is represented by negative social attitudes toward individuals who use alcohol and/or other drugs, is one of the barriers to care that is poorly understood. The current study: a) assessed implicit (indirect and difficult to consciously control) and explicit (consciously controlled) beliefs about PWIDs among visitors to a public web site; and b) experimentally investigated the effects of ethnicity/race and gender on those implicit and explicit beliefs.

Methods—N=899 predominantly White (70%) and women (62%) were randomly assigned to one of six target PWIDs conditions: gender (man/woman) x race/ethnicity (White, Black, Latino/a). Participants completed an Implicit Association Test and explicit assessment of addiction stigma.

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Results—Participants implicitly associated PWIDs (especially Latino/a vs. White PWIDs) with deserving punishment as opposed to help (p =.003, d = .31), indicating presence of addiction stigma-related implicit beliefs. However, this bias was not evident on the explicit measure (p = .89). Gender did not predict differential implicit or explicit addiction stigma (p = .18).

Conclusions—Contrary to explicit egalitarian views towards PWIDs, participants' implicit beliefs were more in line with addiction stigma**.** If replicated and clearer ties to behavior are established, results suggest the potential importance of identifying conditions under which implicit bias might influence behavior (even despite explicit egalitarian views) and increase the likelihood of discrimination towards PWIDs.

Keywords

addiction stigma; persons who inject drugs; Implicit Association Test; intersectionality framework; racial/ethnic bias; gender bias

1. Introduction

Most individuals with substance use disorders (SUDs) do not engage with formal treatment (e.g., outpatient or residential specialty care) or informal help services (e.g., peer support groups), making addressing barriers to care for SUDs a healthcare priority (Grant et al., 2016, 2015). The Affordable Care Act (U.S. federal law enacted by President Obama in 2010) is anticipated to improve access to and quality of treatment for SUDs (Humphreys and Frank, 2014). However, unless directly addressed, barriers such as addiction stigma will continue to impede quality of care and utilization of services (Grant et al., 2016, 2015; Volkow, 2008). Critically, a 10-year-long epidemiological survey suggests that addiction stigma has remained stable over time in the U.S. (Chartier et al., 2016; Pescosolido et al., 2010). Simultaneously, addiction stigma continues to be understudied and poorly understood (Kulesza et al., 2013; Livingston et al., 2011). To address this gap, we assessed implicit and explicit addiction stigma and experimentally evaluated the intersection between addiction stigma and other forms of bias (i.e., racial/ethnic and gender).

Addiction stigma is conceptualized as the endorsement of negative stereotypes, by members of the general public, towards individuals coping with SUDs, including persons who inject drugs (PWIDs); thereby increasing marginalization and discriminatory behavior directed at this stigmatized group (Link et al., 2001, 1989). Addiction stigma is thought to exacerbate both structural and individual-level barriers to treatment and help-seeking (Corrigan, 2004; Hatzenbuehler et al., 2013; Link and Phelan, 2006).

On the structural-level, beliefs that individuals coping with SUDs deserve to be punished rather than helped are related to lower support for public health-oriented drug control policies (funding for SUDs treatment, harm reduction services, etc.), among the general public (Kulesza et al., 2015; Lee and Rasinski, 2006; MacCoun, 2013; Matheson et al., 2013). Thus, moralistic and punitive views towards individuals who use drugs seem to be adversely related to availability of help services for SUDs (Kulesza et al., 2015; MacCoun, 2013). On the individual-level, persons with SUDs might decide against seeking help to avoid anticipated stigma from healthcare providers, employers, and/or neighbors (Link et al.,

2001, 1989). Longitudinal (Chartier et al., 2016) and cross-sectional data (Keyes et al., 2010; Oleski et al., 2010; Radcliffe and Stevens, 2008) indicate that individuals, who perceive high levels of addiction stigma within society, are less likely to access SUDs help and treatment services.

1.1 Implicit and explicit addiction stigma

Stigma is a multi-faceted construct that is optimally evaluated in multiple ways to provide a more comprehensive understanding of its constituent parts. Traditionally, addiction stigma has been assessed with explicit or self-report measures (Kulesza et al., 2013), which capture beliefs and attitudes that individuals are aware of, have conscious control over, and are willing to report. Stigma may also be assessed with implicit measures, such as reaction time assessments. They capture fast, automatic associations between constructs held in memory and may reflect beliefs or attitudes held outside conscious awareness and volitional control (Dovidio and Fiske, 2012).

While the addiction stigma literature has been dominated by the use of explicit stigma assessments (Kulesza et al., 2013), including both forms of assessment has advantages (Rush et al., 2010; van Boeckel et al., 2014). First, implicit and explicit measures predict unique variance in behaviors across many domains (Greenwald et al., 2009), including substance use (Reich et al., 2010), suggesting that these measures are not redundant. Second, notwithstanding valuable contributions from explicit methods, some biases may be unconscious and/or uncontrollable, and therefore may be best assessed by implicit measures (Dovidio and Fiske, 2012). Third, explicit stigma measures might suffer from underreporting due to social desirability bias (Greenwald et al., 2009), while implicit measures are less vulnerable to self-presentation concerns (Nosek et al., 2007) and may be especially valuable for socially sensitive constructs like addiction stigma, gender and racial/ethnic bias (Greenwald et al., 2009; Nosek et al., 2007).

Two studies, which evaluated implicit and explicit addiction stigma, illustrate the utility of these multimodal assessments. In both studies, addiction treatment providers reported high implicit, but low explicit, addiction stigma, highlighting potentially meaningful discrepancies between the two types of assessments (Brenner et al., 2007; von Hippel et al., 2008). Also, implicit, but not explicit, addiction stigma fully mediated the relationship between job-related stress and intentions to quit among providers (von Hippel et al., 2008). Thus, the current study will evaluate explicit and implicit addiction stigma, and extend prior research by assessing the intersection of race/ethnicity and gender of PWIDs on addiction stigma among general U.S. adult population, rather than focusing exclusively on healthcare providers.

1.2 Intersection of race/ethnicity, gender and addiction stigma

Recent theoretical work emphasizes the importance of adapting an intersectionality framework to achieve better public health-related outcomes, such as increased access to healthcare among underserved populations (Earnshaw et al., 2013; Hatzenbuehler et al., 2013; Rosenthal, 2016). Specifically, the causes of disparities may be better understood by describing how the intersection between multiple social identities (racial/ethnic minority,

women) and structural inequalities linked to these identities (racism, sexism) may adversely impact one's life experience (access to healthcare), thereby perpetuating disparity within marginalized groups (Cole, 2009; Crenshaw, 1995). To illustrate, racial bias among healthcare providers has been linked to poorer quality of care and health disparities among racial minority populations (Dovidio et al., 2012, 2008; Hall et al., 2015). In addition, gender differences in life experiences (e.g., work choices, family life) are an important contributor to differential health outcomes, such as higher mortality among men but higher morbidity among women (Bird and Rieker, 2008).

When applied to addiction, an intersectionality framework suggests that addiction stigma may also intersect with other forms of bias, such as racism and sexism. Consequently, individuals with SUDs may be treated less favorably if they also hold other status characteristics that are marginalized. For instance, the greater proportion of individuals with SUDs, who are within the criminal justice versus healthcare system, is often cited as an example of discrimination following from addiction stigma (Bohnert et al., 2011; Degenhardt et al., 2014, 2011; Strathdee et al., 2015). Moreover, although rates of drug use and selling are comparable between racial/ethnic groups, minorities (compared to Whites) are significantly more likely to be arrested and receive harsher sentences for drug-related offenses (Curry et al., 2008; Fielding-Miller et al., 2016; Mitchell and Caudy, 2015). Also, compared to women, men are more likely to be sentenced and receive harsher sentences for drug-related crimes (Cano and Spohn, 2012; Davidson and Rosky, 2015). However, criminal justice-involved women, as compared to men, are more likely to have mental health problems (Kim et al., 2015).

Two evaluations of the relationship between race/ethnicity bias and addiction stigma had conflicting results (Garland and Bumphus, 2012; Lee and Rasinski, 2006). In both studies, participants' perceptions about the involvement of racial/ethnic minorities in drug use and sales were used as a proxy for racial bias. In one study (Garland and Bumphus, 2012), researchers found a positive relationship between endorsements of “minority involvement” and addiction stigma (i.e., endorsement of punitive vs. help-oriented drug policies). However, data from the other study did not support a direct relationship between these two constructs (Lee and Rasinski, 2006). The use of a self-report bias measure could explain the mixed findings (i.e., participants may have desired to appear egalitarian). Thus, the current study will examine implicit and explicit addiction stigma, and consider how race/ethnicity of stigmatized individuals influences them.

Gender of PWIDs, and others with SUDs, may also moderate the expression of addiction stigma. As with race/ethnicity bias, results are mixed. On the one hand, a previous study found participants reported more concern, sympathy, and interest in helping behavior towards women (vs. men) with SUDs (Wirth and Bodenhausen, 2009). However, three qualitative reports suggested that women felt they would be looked down upon by others, more than their male counterparts would be, if their identity of a “drug user” was known to others (Copeland, 1997; Schober and Annis, 1996; Spooner et al., 2015). These accounts are consistent with reports of gender-based, denigrating attitudes towards women with SUDs (i.e., promiscuous, unfit mothers) (Schroedel and Fiber, 2001; Terplan et al., 2015). Akin to

the discussion for race/ethnicity, the current study will assess how gender of PWIDs influences both implicit and explicit addiction stigma.

We are not aware of data examining the intersection between both gender and race/ethnicity in addiction stigma, which will thus be a novel contribution of the current study. Related research in public health indicates that the interaction of racism and sexism predicted increased stress in African-American, women college students (King, 2003). Yet, other research has suggested independent, but not interactive, effects for racism or sexism predicting distress (Stevens-Watkins et al., 2014; Szymanski et al., 2010). Thus, examining interactive effects of gender and race/ethnicity on negative judgments toward PWIDs was exploratory.

1.3 Overview

The current study examined implicit and explicit addiction stigma in a large general public sample, and assessed whether PWID's race/ethnicity, gender, and their interaction would moderate the expression of implicit and explicit stigma. A stronger negative bias effect was expected on the implicit versus explicit measure because implicit measures are less vulnerable to self-presentation. Racial/ethnic minority PWIDs were expected to be more stigmatized than White PWIDs, given documented racial bias and healthcare disparities in the U.S. Differences were not expected for Black compared to Latino/a PWIDs. The investigation of the effects of PWIDs' gender, and the interaction of race/ethnicity and gender on the stigma measures was exploratory.

2. Material and Methods

2.1 Participants

Participants were volunteers at the Project Implicit research website (https://implicit.harvard.edu/implicit/) between July 24 and August 19, 2013. Out of 1,453 individuals randomly assigned to this study, 1,157 consented to participate. The study sample consisted of 899 individuals (88% of consenting participants) who completed at least one measure. Project Implicit is a public website investigating implicit associations across many different topics. There is evidence supporting the validity of Project Implicit's approach to web-based data collection across millions of participants (Nosek et al., 2009, 2007). Participants are volunteers, are not compensated for their involvement in the study, and find the website through multiple sources (e.g., web searches, school assignment). See Table 1 for participant characteristics.

2.2 Procedures

The current study was approved by the University of Virginia's Institutional Review Board. Volunteers provided demographic information after website registration, and were randomly assigned to the present study from the pool of available research studies. Following informed consent, participants were randomly assigned to one of six conditions: Black man/woman PWIDs, White man/woman PWIDs, or Latino/Latina PWIDs. Participants then completed the implicit and explicit bias measures in a random order. Participants saw the same gender and race/ethnicity for both the implicit and explicit bias measures (e.g., if the participant

completed the Latino implicit bias measure, he/she also completed the Latino explicit bias measure). Participants were then debriefed about the purpose of the study, and given the opportunity to receive feedback on their implicit bias measure, as is typical at Project Implicit.

2.3 Measures

2.3.1. Implicit addiction stigma—Implicit addiction stigma was measured by the Brief Implicit Association Test (BIAT; Sriram and Greenwald, 2009). It measured individuals' strength of associations between PWIDs and the concepts of deserving punishment versus help. The BIAT compares reaction times when classifying stimuli as either “belonging” or “not belonging” to categories that have been paired on a computer screen to measure relative strength of associations stored in mind between concepts. During the task, participants see category exemplars (i.e., words and images) one at a time and are asked to press a key on the keyboard indicating whether or not the exemplar belongs to one of the categories presented on the screen as quickly as possible. Images (drawings of individuals injecting drugs or reading a book) were used as category exemplars for PWIDs and non-PWIDs respectively (images were matched across race/ethnicity and gender conditions on all other appearance features - clothing, accessories, etc. - except for gender and facial features/skin tone). Words were used for “Deserves Punishment” (jail, punish, penalty, lockup) and “Deserves Help” (help, assistance, treatment, support) category exemplars.

Six blocks were presented during the task; the first two were practice blocks of 12 trials each. The remaining four blocks of 20 trials each were used for analyses. To assess the relative strength of PWIDs as deserving punishment versus help, time to classify stimuli in the two conditions was compared. Participants were randomly assigned to see PWIDs paired with “Deserves Punishment” first or “Deserves Help” first during the task. Subsequent blocks alternated pairings.

Scoring procedures adhered to the recommendations by Greenwald and colleagues (Greenwald et al., 2003; Nosek et al., 2012). The IAT and BIAT scoring algorithms create a D score, which is the difference between response latencies for the two critical category pairing conditions, divided by the standard deviations across all blocks. The D score is conceptually similar to a Cohen's d effect size. Based on current scoring recommendations BIAT data with high error rates or too many fast trials was excluded. Score of zero reflects no relative implicit addiction stigma bias between PWIDs and “Deserves Help” versus “Deserves Punishment.” Positive scores reflect stronger PWIDs + “Deserves Punishment” associations, indicating higher implicit addiction stigma, and negative scores reflect stronger PWIDs + “Deserves Help” associations. Internal consistency for the 6 different BIAT versions showed some variability: White men=.54; White women=.61; Latino men=.38; Latina women=.59; Black men=.44; Black women=.38.

2.3.2 Explicit addiction stigma—Explicit addiction stigma was assessed via vignette, which was followed by six questions tapping onto the same constructs as the BIAT (PWIDs deserving punishment vs. help), and adapted for the current study from prior stigma research (Cruz et al., 2007; Kelly and Westerhoff, 2010). These items capture the forced choice that

members of a jury, community, etc., are often asked to make (i.e., Do we punish this person or offer help?). Participants were asked to read a brief vignette describing an individual who, after being arrested for heroin possession, awaits a judge's determination of his/her status. Next, participants were asked to indicate their agreement with six statements about the PWIDs using 4-point Likert scale (from 1=strongly disagree to 4=strongly agree).

We calculated mean scores for Punishment and Help subscales. Higher scores on the three items of the Punishment subscale (e.g., He/she should be given some kind of a jail sentence as a “wake up” call) correspond to stronger support for punishment, consistent with higher addiction stigma; Cronbach's alpha was .91. Higher scores on the three items of the Help subscale (e.g., He/she should be helped by social services) correspond to stronger support for help, in line with lower addiction stigma; Cronbach's alpha was .81. To match the BIAT scores, we created a summary score by subtracting the Help subscale from the Punishment subscale. Positive scores indicate that participants felt more inclined toward punishment (vs. help), corresponding to higher addiction stigma, and negative scores indicate that participants felt more inclined toward help than punishment.

2.4 Analytic Plan

To assess whether the race/ethnicity or gender of the PWIDs was associated with significant differences in implicit and explicit addiction stigma, we conducted separate 2 (gender: man/woman) × 3 (race/ethnicity: White, Black, Latino/a) between-subjects analyses of variance (ANOVA) for the implicit and explicit addiction stigma measures. Models included race/ethnicity, gender, and their interaction as predictors. In no case did the bias results change after controlling for participant characteristics. Thus, we report results for the models without including these covariates.

3. Results

3.1 Implicit and explicit addiction stigma bias

See Table 2 for descriptive statistics for the implicit and explicit addiction stigma measures. Collapsing across the 6 race/ethnicity and gender PWIDs conditions to examine bias in the full sample, the mean implicit addiction stigma BIAT D score of .22 indicated a small implicit preference for associating PWIDs with punishment rather than help. In contrast, the full sample's mean score of -1.29 for the explicit addiction stigma measure showed greater agreement with helping vs. punishing PWIDs, indicating low endorsement of explicit addiction stigma beliefs. Notably, both the implicit stigma, $t(503) = -10.15$, $p = .001$, $d = .51$, and explicit stigma, $t(782) = 29.63$, $p = .001$, $d = 1.09$, scores were significantly different from zero, but indicated opposing effects. As reflected in Table 2, the implicit and explicit measures were modestly correlated with each other.

3.2 Effects of race/ethnicity and gender on implicit and explicit addiction stigma

On the implicit stigma measure, there was a significant main effect for race/ethnicity, $F(2, 501) = 4.57$, $p = .01$, $\eta^2 = .02$, but not for gender, $F(1, 502) = 1.81$, $p = .18$, $\eta^2 = .01$, or the interaction, $F(2, 498) = .50$, $p = .61$, $\eta^2 = .002$. Pairwise post-hoc comparisons to investigate the race/ethnicity effect indicated that participants presented with images of Latino/a PWIDs

scored higher on implicit addiction stigma (i.e., more deserving of punishment) than participants presented with the images of White PWIDs, $t(1, 323) = 2.99$, $p = .003$, $d = .31$. No other race/ethnicity comparisons were significant.

On the explicit vignette measure, there were no effects of race/ethnicity, $F(2, 660) = .12$, $p = .89$, $\eta^2 = .0002$; gender, $F(1, 661) = .16$, $p = .69$, $\eta^2 = .0004$; or their interaction, $F(2, 597) = .51$, $p = .61$, $\eta^2 = .001$.

4. Discussion

The current study is the first we know of to investigate whether the race/ethnicity and gender of PWIDs influence participants' implicit and explicit addiction stigma, represented by attitudes regarding help versus punishment towards PWIDs. The overall pattern of responding to the explicit addiction stigma questions suggests our participants self-report believing that PWIDs deserve help rather than punishment. Thus, participants appear to espouse egalitarian, relatively compassionate views towards PWIDs. Still, implicit addiction stigma results indicated participants were faster to associate PWIDs with deserving punishment than help, signifying harsher judgments. These results did not vary based on PWIDs' gender, suggesting minimal influence of gender bias. However, participants were more likely to implicitly associate Latino/a PWIDs with deserving punishment rather than help, compared to White PWIDs, suggesting that race/ethnicity bias may influence the expression of implicit addiction stigma. Unexpectedly, stigma levels did not vary for comparisons between White and Black PWIDs.

Although direct comparison of the implicit and explicit measures is difficult, given the differences in the structure and content of the measures, implicit and explicit beliefs about PWIDs may be discrepant. Specifically, our data suggests a preference for punishment in one case (implicit assessment) but for help in the other (explicit assessment), and only a modest relationship between these assessments. Further, the pattern is consistent with reports of more negative implicit (compared to explicit) addiction stigma among healthcare providers (Brenner et al., 2007; von Hippel et al., 2008). However, it is unclear from the current data, whether the more positive explicit evaluations follow from a desire to either appear or actually be unbiased. In future research, it would be helpful to consider how motivation to control prejudice is related to the findings. Given highly educated and socioeconomically advantaged Whites, who were overrepresented in this study, have endorsed particularly low levels of explicit bias in past research (Bobo, 2001; Dovidio et al., 2008), our findings should be replicated with more diverse samples.

It will also be informative to examine how implicit and explicit measures differentially predict actual behavior that helps or punishes stigmatized individuals. Based on double dissociation models (Ansendorph et al., 2002; Roefs et al., 2011), one would expect the implicit measure to better predict behaviors that are spontaneous or difficult to consciously control, while the explicit measure may better predict slower, more controlled responses. Given the poor rates of treatment access and delivery for this marginalized population (Grant et al., 2016, 2015), we suggest that examining how these biases predict health care policy

decisions will be especially critical to addressing structural-level barriers to engagement in care services among individuals coping with SUDs.

Importantly, the implicit addiction stigma findings suggested that bias toward PWIDs may be sensitive to racial/ethnic bias. In line with extant literature documenting higher implicit racial bias toward Latino/a (compared to White) adults among healthcare providers (Hall et al., 2015), the current study found greater implicit preference for punishment (vs. help) for Latino/a than for White PWIDs. These findings are also consistent with criminal justice statistics, indicating that racial/ethnic minority individuals are more likely to be arrested (Fielding-Miller et al., 2016; Mitchell and Caudy, 2015) and receive harsher sentences (Curry et al., 2008) than White persons for drug-related offenses.

It will be valuable in future work to assess whether the joint implicit race + addiction stigma bias observed in this study can predict (or perhaps even play a causal role in) this discriminatory behavior. Notwithstanding, the same line of reasoning seems like it should also apply to Black PWIDs, but this was not supported by our results. It may be that different factors underlie the harsher criminal sanctions for Latino/a (compared to Whites) drug offenders than underlie the harsher sanctions for Black drug offenders. In light of the aforementioned criminal justice statistics, it will be important to assess other stereotypes related to PWIDs that may plausibly differ across racial/ethnic groups (e.g., beliefs about whether recidivism is likely) in order to explain mixed implicit stigma + race/ethnicity results. Lastly, along with race/ethnicity and gender, theory of intersectionality calls for a consideration of additional factors (e.g., sexual orientation, class, immigration status) to improve our understanding about structural causes of disparities among PWIDs (Cole, 2009; Rosenthal, 2016).

One reason that we may have observed little evidence of different addiction stigma levels as a function of race/ethnicity or gender may be that certain very highly stigmatized populations, such as PWIDs, are likely to be subjected to some level of marginalization and social exclusion regardless of their racial/ethnic background (MacCoun, 1998). Along these lines, Minor and colleagues (2003) qualitatively evaluated the intersection of multiple stigmatized identities and participants' life experiences. Specifically, when Black and Latino/a adults coping with SUDs were asked about their experiences with different sources of discrimination (addiction stigma, race/ethnicity, gender, etc.), addiction stigma was endorsed by 75% of the sample while race/ethnicity and gender-related discrimination were endorsed by 32% and 13.5% of participants respectively (Minor et al., 2003). Likewise, analogous data tied to HIV-related experiences of discrimination was reported (Marsicano et al., 2014). Given this is the first experimental evaluation of these complex relationships, more work is needed to understand how different types of biases and their unique prediction of discriminatory behaviors vary as a function of intersecting marginalized identities.

These results should be interpreted in light of several limitations. First, the study sample was recruited online and does not adequately represent diversity of the U.S. adult population (the majority of participants were well-educated, Caucasian women); thus the generalizability of our data is limited. Second, not all individuals with SUDs are equally stigmatized: PWIDs seem to be judged especially harshly (Mateau-Gelabert et al., 2005; Radcliffe and Stevens,

2008). Hence, this study needs replication using different substance use targets. Relatedly, given the diversity of discriminatory behavior, future qualitative studies are warranted in order to provide greater depth of understanding of individual's "lived experience". Third, due to the cross-sectional nature of our study, longitudinal evaluations are warranted to examine differential changes in implicit and explicit addiction stigma. Fourth, the current study lacked behavioral indicators of punishment and treatment, so it was not possible to evaluate the unique predictive validity of the implicit and explicit measures.

Despite these limitations, the current study makes novel contributions to the literature, including the first multimodal, experimental evaluation of the intersectionality between addiction stigma and other sources of bias. Results indicated more compassionate explicit views, but more punitive implicit views, especially for Latino/a PWIDs. Although preliminary, these results raise important questions for future investigations about the value of targeting implicit addiction stigma to promote better care for PWIDs and others coping with SUDs. In light of research suggesting that moralistic, punitive beliefs are related to lower support for funding of healthcare services for SUDs (Kulesza et al., 2015; MacCoun, 2013), effective strategies to address implicit beliefs that PWIDs (especially Latino/a) are more deserving of punishment than help may one day improve access to help for this underserved population.

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Highlights

- Experimental evaluation of intersectionality between stigma and race/ethnicity and gender
- Divergence between egalitarian explicit views and stigmatizing implicit attitudes towards people who use drugs
- More negative implicit attitudes toward Latino vs. White persons who use drugs

Table 1

Participant characteristics (*n*=899)

Demographic characteristic	
Gender (% women)	62.4
Age (M, SD)	38.97 (13.65)
Ethnicity (%)	
Caucasian	69.9
African American	13.2
Hispanic or Latino	7.3
More than one ethnicity	7.3
Asian	4.2
Other or unknown	3.1
American Indian or Alaskan Native	.7
Native Hawaiian or other Pacific Islander	.7
Did not report ethnicity	.9
Education (%)	
Less than a high school degree	1.4
High school degree, some college, or an Associate's degree	39.2
Bachelor's degree or some graduate school	28.1
Advanced degree (e.g., PhD, MD)	30.4
Did not report	.9
Political ideology (%)	
Strongly liberal	18.5
Moderately liberal	23.5
Slightly liberal	8.3
Moderate or neutral	29.1
Slightly conservative	6.7
Moderately conservative	7.1
Strongly conservative	2.7
Did not report	4.1

Table 2

Descriptive statistics and correlations for addiction stigma measures by study condition

	Race/Ethnicity			Gender		
	Overall	**White**	**Latino/a**	**Black**	**Man**	**Woman**
Means and SDs						
Implicit Stigma [a]	.22 (.49)	.14* (.50)	.29* (.49)	.23 (0.47)	.19 (.48)	.25 (.50)
Explicit Stigma [b]	-1.29 (1.22)	-1.28 (1.24)	-1.31 (1.20)	-1.26 (1.22)	-1.31 (1.22)	-1.26 (1.22)
Correlations						
Implicit-Explicit	.25***	.36***	.11	.26*	.27***	.22**

[a] Implicit Stigma refers to the relative strength of implicit associations on the BIAT, with higher scores indicating greater PWIDs associations with punishment vs. help.

[b] Explicit Stigma refers to the relative strength of self-reported judgments of the PWIDs, with higher scores indicating greater judgments that the PWIDs deserve punishment vs. help.

* $p<.01$,

** $p<.001$,

*** $p<.0001$