

Research Report

Implicit Prejudice Toward Injecting Drug Users Predicts Intentions to Change Jobs Among Drug and Alcohol Nurses

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ABSTRACT—*The meaning and importance of implicit prejudice is a source of considerable debate. One way to advance this debate is to assess whether implicit prejudice can predict independent variance, beyond that predicted by explicit prejudice, in meaningful and unambiguous behaviors or behavioral intentions. In the current research, drug and alcohol nurses reported their level of stress working with injecting drug users, their job satisfaction, their explicit prejudice toward injecting drug users, and their intentions to leave drug and alcohol nursing. The nurses also completed the Single Category Implicit Association Test, which measured their implicit prejudice toward injecting drug users. Analyses revealed that implicit prejudice was a significant mediator, beyond explicit prejudice and job satisfaction, of the relation between job stress and intention to change jobs.*

The advent of techniques that enable researchers to measure implicit (or unconscious) attitudes has led to an explosion of research and theory across nearly all the subdisciplines of psychology. Research in social psychology (Richeson & Shelton, 2003), clinical psychology (Teachman & Woody, 2003), consumer psychology (Maison, Greenwald, & Bruin, 2004), organizational psychology (von Hippel, 2006), and cognitive neuroscience (Cunningham et al., 2004) has relied on measures of implicit attitudes to examine issues that were difficult to address with traditional measures of attitudes. The area that has seen the most

activity is implicit prejudice,¹ because people are often unwilling or unable to report their prejudicial feelings (Dovidio & Gaertner, 1998), and implicit measures allow researchers to circumvent problems associated with self-report.

Despite (or perhaps because of) this burgeoning research literature, there remains substantial controversy over whether implicit-prejudice measures really tap prejudicial feelings. In large part, this controversy has centered on whether implicit-prejudice measures can predict independent variance in behavior that is consequential and unambiguous (Arkes & Tetlock, 2004). Indeed, this controversy has even moved into law and human resources, where proponents and opponents of the construct of implicit prejudice debate its applicability to equal-employment-opportunity practices (Greenwald & Krieger, 2006; Kang & Banaji, 2006; Mitchell & Tetlock, in press; Tetlock & Mitchell, in press).

At the moment, this debate appears to have reached an impasse, as proponents of implicit measures argue that they predict a number of important behavioral outcomes, whereas skeptics argue that these behavioral outcomes are themselves ambiguous. For example, a number of studies show that implicit prejudice predicts nonverbal distancing (e.g., minimal eye contact; for a meta-analysis, see Poehlman, Uhlmann, Greenwald, & Banaji, 2007), but nonverbal distancing could be a sign of animosity, distaste, nervousness, unfamiliarity, or even concern that one might be regarded as prejudiced (Arkes & Tetlock,

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¹We use the term *implicit prejudice* to refer to implicit attitudes toward members of different groups. Although prejudice is typically conceived as a negative attitude, at this point one can only assess an individual's relative position on the continuum from positive to negative implicit attitudes, as the psychometrics of implicit measures are insufficiently established to allow identification of a particular individual as implicitly prejudiced (Blanton & Jaccard, 2006).

2004; Tetlock & Arkes, 2004). Many other behaviors have been predicted by implicit-prejudice measures, but in all cases this basic concern applies (see Arkes & Tetlock, 2004; Tetlock & Mitchell, in press). Thus, one way to move this debate forward would be to assess whether implicit prejudice can predict independent variance—beyond that explained by explicit prejudice—in meaningful and unambiguous behaviors or behavioral intentions.

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Because prejudiced thoughts conflict with universally held egalitarian beliefs, people are typically unwilling to acknowledge their own prejudices, and are thought to push them into unconsciousness (Dovidio & Gaertner, 1998). For this reason, implicit and explicit prejudice should frequently be dissociated, and this is often the case (Poehlman et al., 2007). As a consequence, prejudice is a domain in which implicit attitudes are (theoretically) likely to predict independent variance in behavior, and indeed implicit-prejudice measures have been found to predict behavior better than explicit-prejudice measures do (Poehlman et al., 2007). Again, however, there is controversy about the meaning of the behaviors examined in this research (Arkes & Tetlock, 2004; Tetlock & Mitchell, in press).

In the research reported in this article, we extended previous research by examining whether implicit prejudice can predict unambiguous and important behavioral intentions that theoretically and logically follow from prejudicial feelings. We did so by assessing whether implicit and explicit prejudice toward injecting drug users (IDUs) can predict drug and alcohol (D&A) nurses' intentions to leave D&A nursing. Although intention to change jobs is not an actual behavior, it served as our primary dependent measure for two reasons. First, responses to the specific question regarding intentions to change jobs remain the best predictor of voluntary job turnover (van Breukelen, van der List, & Steensma, 2004). Second, intentions to change jobs have an advantage over actual turnover in that they are less influenced by environmental factors such as the availability of alternative employment (Gerhart, 1990).

D&A nurses provide a prototypical case of modern prejudice. On the one hand, IDUs can be challenging clients (e.g., Sylvestre, Litwin, Clements, & Gourevitch, 2005), and medical contact with them might sometimes reinforce stereotypes that this group is chaotic and unmanageable. On the other hand, medical models of drug use as a disease promote sympathy for IDUs. Such feelings of sympathy might be particularly widespread among D&A nurses, who have chosen to focus their careers on helping people with D&A problems. Thus, D&A nurses might be particularly likely to have negative implicit attitudes that are not mirrored by their explicit feelings.

This logic suggests that implicit attitudes among D&A nurses might independently predict burnout and turnover, which are prevalent problems in this subfield of medical care (Duraising-

am, Pidd, Roche, & O'Connor, 2006; Gallon, Gabriel, & Knudsen, 2003). That is, D&A staff might continue to believe explicitly that IDUs are worthy of care and sympathy, but might nevertheless harbor negative implicit attitudes toward these clients that could eventually induce them to leave D&A nursing. Accordingly, we propose the following model: First, challenging behaviors on the part of IDU clients will lead to feelings of job stress among D&A nurses. Second, stress, in turn, will predict the nurses' intentions to leave D&A nursing. Third, the effect of stress on intentions to change jobs will be mediated by implicit prejudice toward IDUs, and this effect will be independent of the effect of stress on explicit prejudice and job attitudes. The goal of the current research was to test this model. We emphasized the mediating role of implicit prejudice, as the other components of the model are supported by previous research (e.g., Blegen, 1993; Borda & Norman, 1997; Bourbonnais, Comeau, Vézina, & Guylaine, 1998; Duraisingam et al., 2006).

METHOD

Participants

Forty-four D&A nurses in the Sydney metropolitan area participated in this experiment in return for a gift voucher of 25 Australian dollars (~\$20 U.S.). Nurses were recruited from D&A treatment facilities, needle and syringe exchange programs, and primary-care facilities that cater to IDUs.

Materials and Procedure

The nurses completed the various scales and tasks on a laptop computer. First, they completed a 9-item scale measuring prejudice toward IDUs (e.g., "People should feel sympathetic and understanding of injecting drug users"; positive items were reverse-scored; Brener & von Hippel, in press).² Next, they completed a 4-item abbreviated measure of job satisfaction (e.g., "I feel satisfied with my present job"; Brayfield & Rothe, 1951) and then responded to a single item assessing intentions to change jobs ("During the next year, I will probably look for a new job in another area of nursing"; Price & Mueller, 1986). Responses to the prejudice, job-satisfaction, and job-intentions items were provided on 5-point scales, anchored by *strongly disagree* and *strongly agree*.

Participants then completed a 12-item challenging-behaviors scale assessing the frequency with which their IDU clients exhibited a variety of negative behaviors (e.g., verbal abuse or stealing) and positive behaviors (e.g., appreciation or following their treatment regimen) during treatment (positive items were reverse-scored). Answers to these questions were provided on 4-point scales, with the verbal labels of *never*, *rarely*, *sometimes*,

²This measure of explicit prejudice is well suited for the current research, as it predicts discriminatory treatment of IDU clients by health care workers (Brener, von Hippel, Kippax, & Preacher, 2007).

and *often*. The nurses then responded to 2 items indicating how frequently they were stressed by their experiences working with IDU clients (“Working with injecting drug users is really a strain for me,” “Working with injecting drug users directly puts too much stress on me”). Answers to these questions were provided on a 6-point scale ranging from *never* to *every day*.

After finishing these self-report items, participants completed the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2007), which measured implicit attitudes toward IDUs. The SC-IAT is a timed procedure adapted from the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998). Participants first used one key on a computer keyboard to respond both to words referring to positive attributes and to words referring to IDUs and used a different key to respond to words referring to negative attributes, and then this pattern was reversed so that one key was used to respond to negative attributes and to IDUs and the other key was used to respond to positive attributes. In this procedure, implicit attitudes are assessed as the relative ease (i.e., speed) with which positive versus negative attributes (e.g., *wonderful* vs. *awful*) are paired with the attitude concept (in this case, IDUs, as represented by terms such as *heroin injector*, *speed injector*, and *cocaine injector*). Terms for IDUs were paired with positive attributes in the first block of 72 trials and with negative attributes in the second block of 72 trials, and participants completed 25 practice trials prior to each set of 72 critical trials. The SC-IAT has an advantage over the IAT in studies such as this one, in that there is no category that contrasts clearly with IDUs. Finally, the nurses indicated how many hours they had worked with IDUs in the past week.

RESULTS

The two self-report stress items were highly correlated ($r = .82$, $p < .001$), so they were collapsed into a single measure. Likewise, the reliabilities of the challenging-behaviors scale ($\alpha = .74$), the job-satisfaction scale ($\alpha = .83$), and the prejudice-toward-IDUs scale ($\alpha = .83$) were adequate. Finally, the SC-IAT was scored by subtracting the response times when IDUs were paired with negative attributes from the response times when IDUs were paired with positive attributes, and this difference score was divided by the standard deviation of the response times (after eliminating error trials and trials with very slow and fast responses, as in Karpinski & Steinman, 2007).³ Reliability of the SC-IAT was computed (as in Karpinski & Steinman, 2007) using the Spearman-Brown correction, which revealed adequate reliability ($r_{\text{adjusted}} = .74$). Higher SC-IAT scores indicate

TABLE 1
Descriptive Statistics

Variable	Minimum	Maximum	Mean	SD
Frequency of challenging behaviors	1.50	2.83	2.26	0.32
Self-reported stress	1.00	4.00	2.08	0.77
Job satisfaction	1.50	5.00	3.78	0.75
Explicit prejudice	1.00	3.44	2.16	0.60
Implicit prejudice	−0.74	1.12	0.26	0.41
Hours worked with injecting drug users	1	40	20.61	12.08
Intention to change jobs	1.00	5.00	2.45	1.23

greater implicit prejudice toward IDUs, and the SC-IAT score can be considered a measure of effect size as it is in standard-deviation units (see Table 1 for descriptive statistics for all variables). As Table 1 shows, SC-IAT scores were greater than zero, $t(42) = 4.16$, $p < .001$, although whether this finding indicates that the nurses on average exhibited implicit prejudice toward IDUs is unclear, as the zero point may or may not reflect the cutoff between prejudiced and nonprejudiced responses (Blanton & Jaccard, 2006).

We computed bivariate correlations between all of the variables (see Table 2) and then estimated a regression-based causal model (see Fig. 1). The model included number of hours worked with IDUs as a control variable, although it did not have a discernible effect on any of the relationships. As Figure 1 shows, challenging behaviors by IDUs predicted self-reported stress of nurses working with these clients. Stress, in turn, predicted intention to change jobs. This relation between stress and intention to change jobs was significantly mediated by implicit prejudice (indirect effect = .175, $SE = .098$, 95% confidence interval: .053, .490) but not by explicit prejudice (indirect effect = .013, $SE = .218$, 95% confidence interval: −.355, .520) or job satisfaction (indirect effect = .258, $SE = .192$, 95% confidence interval: −.087, .686).⁴ Furthermore, with the mediators in the model, the direct effect of stress on intention to change jobs was no longer significant (see Fig. 1).

To further establish the validity of the model presented in Figure 1, we explored various competing models. First, when job satisfaction was removed from the model, implicit prejudice remained a significant mediator, and the direct effect of stress on intention to change jobs remained nonsignificant ($\beta = .27$, $p > .10$). In contrast, when implicit prejudice was removed from the model and job satisfaction left in, the direct effect of stress on intention to change jobs was significant ($\beta = .37$, $p < .05$). In neither of these alternative models was explicit prejudice a significant predictor of intention to change jobs. Next, when the model was rearranged, and either stress or implicit prejudice

³To ensure that these data-preparation procedures were not responsible for any of the results, we also conducted all of the analyses using the original SC-IAT response times, without removing excessively fast or slow trials and without removing incorrect responses. These “raw” SC-IAT scores were correlated ($r = .96$) with the “corrected” scores, and all analyses with the corrected measure remained significant when this raw measure was used instead.

⁴To obtain accurate confidence limits, we computed indirect effects from unstandardized regression weights with 10,000 bootstrap resamples, following the syntax provided by Preacher and Hayes (2007).

TABLE 2
Correlations Between Measures

Variable	Frequency of challenging behaviors	Self-reported stress	Job satisfaction	Explicit prejudice	Implicit prejudice	Hours worked with IDUs
Self-reported stress	.44**					
Job satisfaction	-.19	-.45**				
Explicit prejudice	.13	.60***	-.59***			
Implicit prejudice	.17	.40**	-.33*	.26		
Hours worked with IDUs	.32*	.14	.24	.13	.01	
Intention to change jobs	.16	.51**	-.53***	.45**	.51**	.04

Note. IDUs = injecting drug users.
* $p < .05$. ** $p < .01$. *** $p < .001$.

was treated as the criterion variable, none of the possible mediational models were significant. Next, we calculated the partial correlation between implicit prejudice and intention to change jobs while controlling for explicit prejudice; this analysis revealed that implicit prejudice predicted independent variance in intention to change jobs ($pr = .45, p < .01$). Finally, to ensure that outliers were not responsible for the relation between implicit prejudice and intention to change jobs, we calculated a series of correlations and partial correlations (controlling for explicit prejudice) between implicit prejudice and intention to change jobs after removing the three lowest and three highest values on the SC-IAT one at a time, beginning with the most

extreme values, and after removing the single person who responded “strongly agree” to the item assessing intention to change jobs. These correlations and partial correlations fluctuated slightly up and down with removal of the various scores, but were all significant.

DISCUSSION

The results of the current study have direct bearing on the debate concerning the meaning of implicit prejudice (and implicit attitudes more generally). In the current research, D&A nurses reported more frequent experiences of stress if they experienced

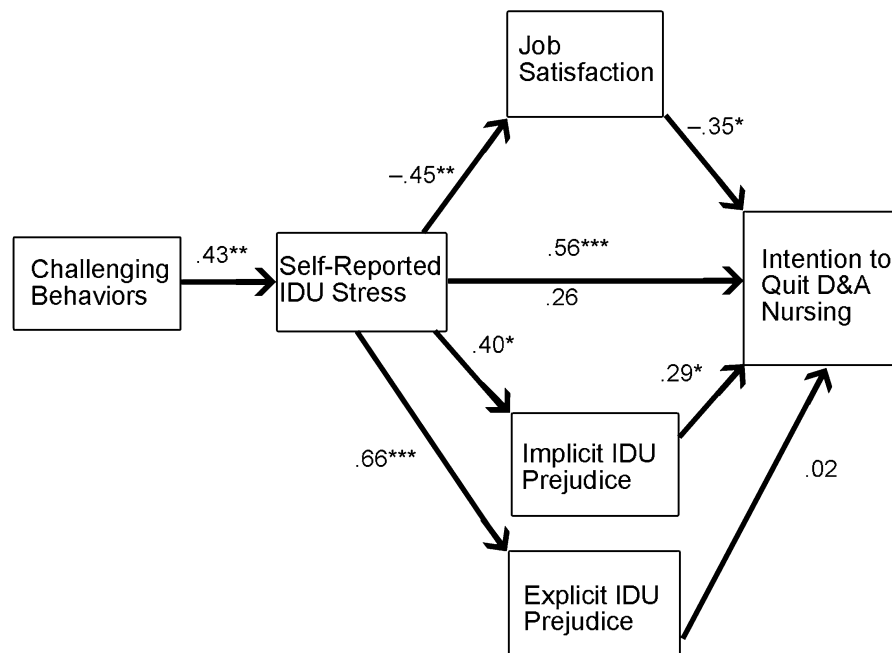


Fig. 1. The mediated effect of stress on intention to change jobs among drug and alcohol (D&A) nurses. Path coefficients represent standardized regression weights. Stress was measured as the stress the nurses experienced working with injecting drug users (IDUs) as clients. The coefficient above the path from self-reported stress to intention to quit D&A nursing represents the direct effect with no mediators in the model; the coefficient below this path represents the direct effect when the mediators are included in the model. Coefficients significantly different from zero are indicated by asterisks, * $p < .05$, ** $p < .01$, *** $p < .001$.

a greater frequency of challenging behaviors from their IDU clients. These experiences of stress, in turn, were predictive of intentions to change jobs, with nurses who reported greater stress also reporting a greater intention to leave D&A nursing for another area of nursing in the upcoming year. Most important, the relation between experiences of stress and intentions to quit D&A nursing was mediated by implicit prejudice, but not by explicit prejudice. Indeed, in this study, implicit prejudice played a clearer role than job satisfaction in mediating the relation between stress and intention to change jobs. Thus, the current results provide the clearest evidence to date that implicit attitudes predict independent variance—beyond that predicted by explicit attitudes—in a behavioral intention that is both important and unambiguous in meaning. In so doing, the current results demonstrate that implicit attitudes can independently motivate important, life-changing behaviors. It remains for future research to assess whether these results generalize to domains that do not involve such a potent mix of sympathy and challenging behavior.

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