



Research Paper

Unlocking deflection: The role of supervisor support in police officer willingness to refer people who inject drugs to harm reduction services

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ABSTRACT

Background: Research is needed that investigates the relationship between police behaviors, attitudes, and perceived supervisor support as an implementation strategy of improving drug policy reforms.

Methods: We hypothesized that officers with more positive attitudes and practices would be more likely to report the perceived support of their supervisors. Data includes a sample of 1227 police officers who completed Project ESCUDO, a police education training program in Tijuana, Mexico. A negative binomial distribution was used to estimate associations between police behaviors and attitudes and perceived supervisor support.

Results: Officers who reported perceived supervisor support accounted for 29.2% (n=470) of the sample. Officers who referred people to social services were more likely and officers who broke syringes were less likely to report perceived supervisor support compared to officers who did not engage in these practices. Officers who believed: MOUD reduced criminal activity, “referring people who use drugs to social services is part of my job”, and “laws that treat addiction as a public health problem make my job easier”, were more likely to report perceived supervisor support. Beliefs that drug addiction is a disease, laws that treat addiction as a public health problem make their job easier, and talking to other law enforcement officers about infectious diseases were not significantly associated with perceived supervisor support.

Conclusions: Our research highlights the importance of incorporating police supervisors as key actors in assuring officers’ practices reflect current drug law reforms as well as embrace patient-centered approaches to managing encounters people who use opioids and inject drugs.

Introduction

Narcomenudeo, Mexico’s sweeping drug law reform adopted in 2009, decriminalized personal possession of small quantities of illicit drugs (Beletsky et al., 2015; Borquez et al., 2018a; Borquez et al., 2018b). Positive progress following the implementation of these reforms has remained slow. Barriers to the implementation of Narcomenudeo were due to lack of education among officers about reforms, lack of willingness to implement the practice of new laws, and reluctance to change organizational structure of police precincts in Mexico (Baker

et al., 2021; Borquez et al., 2018a; Borquez et al., 2018b). Previous research has highlighted the critical role of police in translating drug decriminalization to the street level, and shaping the impact of reforms on the lived experiences of people who inject drugs (PWID) (Arredondo et al., 2018). Police officers possess several legal and extralegal tools that can be deployed in deciding whether to detain or arrest people, confiscate contraband, and engage in other behaviors ranging from embracing harm reduction to perpetuating punitive responses. This brings policing to the fore as an important feature of the environment that shapes the health of PWID.

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Effective approaches to changing attitudes and discretionary behaviors of police to align with public health-oriented policies and goals remain poorly understood (Abdul-Quader et al., 2013; McNeil & Small, 2014; Moore & Dietze, 2005; Rhodes et al., 2012; Rhodes, Kimber, et al., 2006a, 2006b). Literature notes that efforts to reform police practices fall short of taking into account the police organizational context within which supervisor-front line officer relationships occur (MacQueen & Bradford, 2017; Rowe, 2006; Sparrow, 2016). The organizational contexts of police departments are highly hierarchical, in which law enforcement officers are trained to defer to more senior officers in establishing police performance standards and acceptable policing practices (Cockcroft, 2019; Davis, 2018; Policing in America, n.d.; Weisburd & Majmudar, 2017; Willis & Toronjo, 2019; Worden & McLean, 2017). Chan (1996) developed a framework that conceptualizes police culture as an interaction between the field of policing which includes practices and behaviors of police and factors at the organizational level (Chan, 1996). Police culture and structures have remained largely static over the past several decades despite police reforms focused on building strong relationships between local communities and policing (Willis & Mastrofski, 2016). Research has called for more attention to establishing performance criteria for measuring the quality of frontline police officer's interactions with the public (Willis & Mastrofski, 2017b).

Engaging with frontline patrol officers is critical to changing police culture (Dubord & Griffiths, 2021; Leading by Example | 33 | *The Untapped Resource of Front-Line Police s*, n.d.; Rowe, 2006; Willis & Mastrofski, 2017b). Frontline police officers patrol in local communities and are the ones most likely to come into direct contact with PWID. Frontline police officers' referral to social and health care services is a deflection strategy that helps people avoid further involvement in the criminal legal system prior to arrest and potential incarceration (Willis & Mastrofski, 2017a).

Research on occupational cultures of police jurisdictions have consistently found that frontline law enforcement officers respond positively to incentives for promotion and recognition by supervisors engaging in practices that support the mission of police departments. Supervisors are critical change agents within police departments to shape the behaviors of frontline officers (Dubord & Griffiths, 2021; Willis & Mastrofski, 2017b). Perceptions of how supervisors support police behaviors as well as supervisors' attitudes are important drivers of the use of police discretion (Davis, 2018; Schaefer et al., 2020).

Police discretion refers to the capacity of law enforcement officers to choose the most appropriate approach from multiple available options during encounters with PWUD (Gundhus, 2017; Weisburd, 2022). The discretion officers have during encounters with PWUD include whether to arrest, issue verbal warnings, engage in altercations, search, arrest and decide which charges to issue based on the circumstances of the encounter. Supervisors are a critical influence on officer discretion (Bronitt & Stenning, 2011; Davis, 2018). Prior research has found that supervisor's support for training is associated with increased success of trainings on de-escalation (Shachar et al., 2020). The capacity of supervisors to create incentives through rewarding officers for engaging in positive policing behaviors can influence officer discretion to adopt less punitive approaches during encounters with PWID. Harm reduction policing is used by law enforcement officers to humanely mitigate the harms of drug use during encounters with people who use drugs (del Pozo et al., 2021).

Outside of the policing literature, a large body of research in organizational psychology and human resources spanning a range of professional and international contexts has consistently found that workers look to supervisors to identify which discretionary workplace behaviors should be prioritized through incentives and rewards (Aselage & Eisenberger, 2003; Chen & Chiu, 2008; Choi, 2011; Cunningham et al., 2002a; Dawley et al., 2008; DeConinck, 2010; Eisenberger et al., 2002; Erwin & Garman, 2010; Gordon et al., 2019; Khan et al., 2015; Leiter & Harvie, 1997; Maertz et al., 2007b; Rhoades & Eisenberger, 2002).

Employees are more willing to complete undesirable or unfamiliar tasks if they anticipate their supervisor will reward them through an incentive, such as being verbally commended (Chen & Chiu, 2008; Dawley et al., 2008; Maertz et al., 2007a).

Perceived organizational and supervisor support for key discretionary workplace behaviors is associated with greater retention, trust, readiness to change, commitment, and personal satisfaction at work (Aselage & Eisenberger, 2003; Brough et al., 2004; Cunningham et al., 2002b; DeConinck, 2010; Eisenberger et al., 2002; Kuvaas & Dysvik, 2010; Maertz et al., 2007a; Shanock & Eisenberger, 2006; Stinglhamber & Vandenberghe, 2003). Research by Gillet et al. (2013) found that perceived organizational support is associated with greater motivation and engagement in work related responsibilities among law enforcement officers. Greater perceived supervisory and organizational support through incentives such as commendations are associated with greater job satisfaction, and less turnover within police organizations internationally (Armeli et al., 1998; Brough et al., 2004; Gillet et al., 2013). The hierarchical distribution of authority within police departments adds further justification to the hypothesis that greater perceived supervisor support would increase the likelihood of desired behaviors and decrease the incidence of unwanted practices (Westmarland, 2012).

Prior research by our study team found that perceived supervisor support for needle stick injury prevention, a key officer safety concern, was associated with reduced incidence of occupational needle stick injuries (Arredondo et al., 2017; Beletsky et al., 2021; Strathdee, Arredondo, et al., 2015). Cepeda et al. (2017) found that law enforcement officers who perceived that issuing referrals to drug treatment and harm reduction resources were part of their job and held favorable attitudes toward treating addiction as a public health problem were more likely to issue such referrals during contacts with PWID. Research conducted with police officers receiving training with the SHIELD (Safety and Health Integration in the Enforcement of Laws on Drugs) model, a version of ESCUDO (*Shield*, in Spanish) being adopted to domestic settings in Indiana, Missouri, and Massachusetts, revealed that officers perceived their supervisors as highly influential in deciding whether to arrest people for nonviolent misdemeanors, including drug-related offenses (del Pozo et al., 2021; First Responder Safety | SHIELD Training, n.d.).

The role of perceived supervisor support as a potentially useful construct in shaping drug-related policing remains an underdeveloped area of research. Research has yet to examine relationships between police behaviors and attitudes and perceived supervisor support for harm reduction policing. To address these gaps, we examined the extent to which officers' behaviors and attitudes towards harm reduction are associated with self-rated perceived supervisor support. This study aimed to test associations between perceived supervisor support for harm reduction and a number of attitudinal variables (including perceiving harm reduction to be part of the job of police officers) as well as behavioral variables (including confiscation of syringes, breaking syringes, making arrests, issuing referrals, talking to other officers about infectious disease prevention, and detaining PWID for investigation).

Methods

Sample

Data were drawn from a sample of 1751 police officers in Tijuana, Mexico who participated in Project ESCUDO, a clinical trial of a police education program to integrate HIV prevention principles, harm reduction, and occupational safety with police practices. Data here is from the pre-intervention assessment of law enforcement officers' attitudes toward writing referrals for harm reduction services. Data were collected after receipt of the didactic police education program designed to foster this integration (Beletsky et al., 2021; Strathdee, Arredondo, et al., 2015). The Tijuana Police Department employs approximately 2000 police officers, with more than half of them (1400) assigned to

patrol one of Tijuana's 15 precincts. The full sample of officers includes patrol officers, administrators, and supervisors. The inclusion criteria for the final sample, however, consisted solely of front-line, rank and file officers whose assignments were to patrol and who engaged in encounters with PWID. Officers with assignments to desk duty, security guards, and other non-patrol assignments (e.g., processing paperwork) and supervisors up to the rank of chief were excluded, resulting in a sample size of 1,227. For the purposes of this study, supervisors were any officers who self-reported their rank higher than that of "police officer" in the Tijuana Police Department.

The police education program trained police academy Instructors using a trans-contextual model that incorporates the Theory of Planned Behavior (Ajzen, 1991) to change officer attitudes, subjective norms, and self-efficacy to reduce police practices of arrest, physical violence, breaking and confiscating syringes, and increase referrals to health and social services. The study was approved by the University of California San Diego Institutional Review Board #141109.

Measures

All the police behaviors were assessed within the window 6 months prior to undergoing the training. The relevant survey items inquired about knowledge, attitudes, and beliefs about harm reduction and addiction.

Dependent variable

Perceived supervisor support was measured by a dichotomous variable that assessed agreement with the statement 'my supervisor would commend me for referring drug users to health and social services.' The variable was coded to reflect 1= "agree" and 0= "neither agree nor disagree," or "disagree."

Independent variables

Police behaviors

Variables measuring police behaviors (previous 6 months) consisted of 1) confiscating needles or syringes; 2) with and without making an arrest; 3) transporting syringes to present them to the proper authorities; 4) breaking needles or syringes; 5) throwing syringes in the trash; 6) arresting someone for syringe possession; 7) referring drug users to social or health programs, 8) engaging in a physical altercation with a drug user suspect, 9) talking with other officers about the risk of getting an infectious disease while on duty, 10) arresting someone for heroin possession. Question items measuring police behaviors consisted of a Likert scale with all the time (1), sometimes (2), rarely (3), and never (4).

Knowledge and attitudinal items consisted of 1) "methadone reduces criminal behavior," 2) "decriminalizing small amounts of drugs increases occupational risks for the police," 3) "people who are addicted to drugs do not care about their health," 4) "laws that treat addiction as a public health problem make my job easier," 5) "drug addiction is a disease," and 6) "do you know how to refer a person who uses drugs to a health program?" All attitudinal responses were measured on a Likert scale of strongly agree (1), agree (2), neither agree nor disagree (3), and disagree (4). All attitudinal and behavioral measures were dichotomized (1=yes, 0=no).

Control covariates

Potential confounders consisted of age (1= <30 years old, 0= >29 years old), years of experience in law enforcement (years), less than a high school degree (1=Yes, 0=No), and sex (1=female, 0=male).

Table 1

Descriptive statistics of police behaviors, attitudes, and sociodemographic characteristics (n=1227).

	Overall
Perceived supervisor support	25.6(313)
Police Behaviors	
Confiscate syringes	49.6(607)
Broken needle/syringe	27.0(331)
Arrest for syringe possession	43.3(530)
Referred social/health program	37.5(459)
Arrest for heroin possession	22.6(232)
Physical altercation	42.7(521)
Talk to other officers about infectious disease prevention	48.0(588)
Attitudes toward harm reduction	
MMTP reduce criminal activity	29.9(362)
Referring people who use drugs to health and social services is part of the job of police officers	55.3(677)
Know how to refer a person who uses drug to health program	60.3(740)
Laws that treat addiction as a public health problem make job easier	60.1(736)
Syringe exchange programs increase risk of needle stick injury among police	17.5(214)
Decriminalizing small amounts of drugs can increase occupational risks for the police	58.9(718)
People who are addicted to drugs do not care about their health	80.3(982)
Drug addiction is a disease	85.7 (1033)
Drug users do not deserve to be treated like other people	14.5(176)
Covariates	
Women	11.8(145)
Age (<30 years)	16.7(205)
Experience (Years)	12.5(8.1)
Education (Less than high school)	20.2(226)
Methadone Maintenance Treatment Programs (MMTP)	

Statistical analyses

Descriptive statistics for the overall sample as well as stratified by perceived supervisory support included frequencies and proportions corresponding to police behaviors and attitudes as well as socio-demographic characteristics. Officers who perceived receiving supervisory support and those who did not were compared with respect to their attitudes, behaviors and socio-demographic characteristics by using Chi-Square tests. Generalized linear modeling estimated associations between police behaviors, attitudes and perceived supervisor support using a negative binomial distribution and robust standard errors to produce estimates of Relative Risk (RR) (Hole, 2007; Rabe-Hesketh et al., 2004; Skrondal & Rabe-Hesketh, 2004). STATA version 17 was used for statistical analyses in accordance with published literature (Acock, 2008; Palmer & Sterne, 2015; Stata Bookstore: Regression Models for Categorical Dependent Variables Using Stata, Third Edition, n.d.). All multivariable models controlled for age (less than 30 years of age). Alpha of .05 was used in this study to determine statistical significance. Only age was included in the multivariable models because education, and sex were insignificant in our bivariate tests of differences.

Results

Descriptive statistics

In our sample, there was a high prevalence of harmful police practices that drive risk among PWID (Table 1). Nearly half (49.6%, n=607) confiscated syringes, 27.0% (n=331) broke syringes, and 36.3% (n=633) arrested PWID for syringe possession in the past 90 days, 19.4% (n=286) arrested PWID for heroin possession, and 43.3% (n=530) engaged in physical altercations with PWID. A substantial number also engaged in health-promoting practices: 37.5% (n=459) referred PWID to social/health programs and 48.0% (n=588) discussed infectious disease prevention with colleagues. Despite high numbers of harmful practices, only 25.6% of officers (n=313) reported perceived supervisor

Table 2

Differences and chi-squared estimates of significant differences between perceived supervisor support and policy behaviors, attitudes toward harm reduction, female sex, and age.

	Perceived supervisor support (PSS)			
	Yes	No	Chi-2	p-value
Police Behaviors				
Referred social/health program	49.2 (154)	33.5 (304)	24.5	<.001
Talk to other officers about infectious disease prevention	53.7 (270)	42.4 (525)	18.2	<.001
Confiscate syringes	47.3 (148)	50.4 (458)	.938	.336
Broken needle/syringe	22.7 (71)	28.6 (260)	4.1	.042
Discarded syringes	32.6 (296)	29.1 (91)	1.3	.262
Arrest for syringe possession	39.6 (124)	44.7 (406)	2.7	.099
Arrest for heroin possession	19.4 (85)	19.5 (201)	.03	.854
Physical altercation	34.1 (171)	37.3 (460)	1.6	.203
Attitudes toward harm reduction				
MMTP reduce criminal activity	42.7 (132)	25.6 (230)	32.2	<.001
Referring people who use drugs to health and social services is part of the job of police officers	86.9 (272)	44.5 (405)	169.4	<.001
Know how to refer a person who uses drug to health program	77.6 (243)	54.5 (496)	52.4	<.001
Laws that treat addiction as a public health problem make job easier	73.2 (229)	55.6 (505)	30.1	<.001
Syringe exchange programs increase risk of needle stick injury among police	11.9 (37)	19.5 (177)	9.4	.002
Decriminalizing small amounts of drugs can increase occupational risks for the police	58.8 (183)	58.9 (534)	.001	.992
People who are addicted to drugs do not care about their health	81.2 (254)	80.0 (726)	.210	.647
Drug addiction is a disease	91.5 (278)	83.8 (755)	10.9	<.001
Covariates				
Female sex	9.9(31)	12.5 (114)	1.5	.213
Age (Less than 30)	40.0 (9.4)	37.2 (8.4)	21.4	<.001
Experience (years)	14.5 (8.8)	11.8 (7.8)	21.2	<.001
Education (less than high school)	18.3 (152)	25.9 (74)	4.14	.075
Methadone Maintenance Treatment Program (MMTP)				

support for referring to social services. The sample was 11.8% women (n=145) and 16.7% (n=205) were 30 years or less of age (Table 1).

Bivariate analyses found that harmful practices were reported in significantly higher numbers among people who did not report perceived supervisor support compared to people who reported perceived supervisor support using chi-squared tests of differences between the two groups. Significant variables identified in bivariate analyses were included in adjusted generalized linear models. Chi-square test statistics and p-values and provided in Table 2.

Generalized linear modeling regression models

Two models using 1) attitudes toward harm reduction, and 2) police practices, respectively, as primary predictors were ran to produce unadjusted relative risk estimates (uRR), adjusted relative risk estimates (aRR) and 95% Confidence Intervals (CI) of perceived supervisor support as the outcome.

Table 3

Unadjusted and adjusted Relative Risk estimates of attitudes toward harm reduction associated with perceived supervisor support.

	uRR	95% CI	p-value	aRR	95% CI	p-value
Attitudes toward harm reduction						
MOUD reduce criminal activity	1.7	(1.4, 2.1)	<.001	1.4	(1.2, 1.6)	<.001
Referring people who use drugs to health and social services is part of the job of police officers	5.4	(3.9, 7.3)	<.001	4.7	(3.4, 6.5)	<.001
Know how to refer a person who uses drug to health program	2.3	(1.8, 2.9)	<.001	1.9	(1.5, 2.4)	<.001
Laws that treat addiction as a public health problem make job easier	1.8	(1.5, 2.3)	<.001	1.2	(1.0, 1.5)	.065
Syringe exchange programs increase risk of needle stick injury among police	.6	(.5, .9)	.004	.7	(.5, .9)	.012
Drug addiction is a disease	1.8	(1.2, 2.6)	.002	1.3	(.97, 1.7)	.075
Covariates						
Age (Less than 30)	.7	(.5, .9)	.005	.7	(.5, .9)	.037

MOUD: Medication for opioid use disorders; uRR: Unadjusted Relative Risk; aRR: adjusted Relative Risk; 95%CI: 95% Confidence Interval

Attitudes toward harm reduction

Officers who reported believing that Medication for opioid use disorders reduces criminal activity (uRR=1.7 95% CI=1.4, 2.1, p<.001; aRR=1.4, 95% CI=1.2, 1.6, p<.001), referring people who use drugs to health and social services is part of the job of police officers (uRR=5.4, 95% CI=3.9, 7.3, p<.001; aRR=4.7, 95% CI=3.4, 6.5, p<.001), knowing how to refer a person who uses drugs to a health program (uRR=2.3, 95% CI=1.8, 2.7, p<.001; aRR=1.9, 95% CI=1.5, 2.4, p<.001), laws that treat addiction as a public health problem make job easier (uRR=1.8, 95% CI=1.5, 2.3, p<.001; aRR=1.2, 95% CI=1.0, 1.5, p=.065) were more likely to report perceived supervisor support compared to officers who did not endorse these positive attitudes toward people who use drugs (Table 3). Officers who believed that syringe programs increase risk of needle stick injury among police were less likely to report perceived supervisor support (uRR=0.6, 95% CI=0.5, 0.9, p=.004; aRR=0.7, 95% CI=0.5, 0.9, p=.012).

Behaviors during police-PWID encounters

Officers who reported breaking syringes were less likely to report perceived supervisor support compared to officers who did not break syringes (uRR=0.8, 95% CI=.6, .9, p=.047). Officers who referred people to social/health programs (uRR=1.6, 95% CI=1.3, 1.9, p<.001; aRR=1.5, 1.3, 1.9, p<.001) were more likely to report perceived supervisor support compared to officers who did not engage in these positive policing behaviors. Officers who were younger than 30 (uRR=.6, 95% CI=.5, .9, p=.006; aRR=0.7, 95% CI=.5, .9, p=.015) were less likely to report that their supervisors would commend them for issuing referral (Table 3).

Discussion

This cross-sectional analysis of ESCUDO is, to our knowledge, the first to examine the role of perceived supervisor support in shaping police officer attitudes and decision-making as they relate to their discretionary behaviour towards PWID. Our findings suggest that supervisors with more positive attitudes toward PWID, who report fewer incidents of punitive policing behaviors and more referrals to health and

social services are more likely to report perceptions of supervisor support, enhancing our understanding of how perceptions about supervisors are intertwined with the attitudes and beliefs held by the police they lead. Despite this promising research, pathways through which supervisors shape officer-level decision-making remain largely underexplored. There is a significant gap in understanding drivers of police practices that shape health risk among PWID. Identifying pathways through which supervisors influence patrol officers' decisions and attitudes can inform intervention research to improve contacts between PWID and police officers in Tijuana and other parts of the world.

Findings from this study are consistent with other research that officer attitudes and behaviors are associated the support of supervisors (Cepeda et al., 2017; del Pozo et al., 2021). Supervisory personnel should be provided with interventions that increase their support for these attitudes and behaviors among the officers they lead. If supervisors believe they should encourage discretionary linkages to treatment and harm reduction as alternatives to arrest and confiscation among subordinates, they should understand that actively communicating their attitudes and rewarding officers for these actions may increase their acceptability and uptake. Future research should examine how promotions and commendations can be provided along with other more novel forms of incentives to reward positive police practices, and should aim to identify the direction of causality between officer attitudes and practices and perceived supervisor support.

This study has other important implications for public health practice and policy as well as policing. In designing public health-focused laws that seek to improve the health of PWID and other vulnerable groups, policymakers should consider better communication of new norms and practices to police, and particularly supervisors. Research on the rollout of the Narcomenudeo reform and other decriminalization efforts has demonstrated that policies are not self-implementing (Arredondo et al., 2018; Morales et al., 2020; Werb et al., 2015). Improving the policy translation process by influencing police behavior is vital to assuring these reforms effectively benefit vulnerable groups. As more jurisdictions in US and globally undertake drug policy reforms (such as Measure 110 in Oregon, which decriminalized personal drug possession), there is increasing interest in deploying deflection and diversion programs to reduce contact with the criminal legal system and improve access to drug treatment and supportive services (Mastro, 2021; Netherland et al., 2021). Our research highlights the imperative to target police supervisors as key actors in assuring implementation fidelity.

Our study found that many of the officers' attitudes but only a few of the behaviors were strongly associated with perceived supervisor support. Law enforcement attitudes may not translate as readily into behavior in the field because of pressures that include practices of other officers, competing rewards for punitive policing and prior training. Officers who believe that public health responses are more appropriate may not be able to act in a manner in accordance with their beliefs without adequate supports from supervisors and leadership. Future research is needed to examine the role of perceived supervisor support as a mediator between police attitudes toward harm reduction and police behaviors that include harm reduction policing.

As North America and other regions struggle with substance use and its sequelae, there is increasing attention to the role of structural factors in shaping health risk among people who inject drugs. Policing and other elements of the legal environment are principal among these factors, but tools to change police practice has proven difficult. In the context of broader societal discourse with the role of police in shaping health and wellbeing of communities, this research offers additional insight into how public health actors can intervene to reframe police encounters from being a source of harm to a source of harm reduction. A goal of public health should be to shrink the outsized footprint of policing in the lives of PWID while reducing potential harm from police-PWID interactions when necessary. Highlighting the role of police supervisors in police practice opens the door to changing both the frequency and character of police encounters with PWID.

Findings from this study are consistent with a larger body of global literature supporting shifts in policing toward more humane and community-oriented approaches toward PWID (Urbanik et al., 2022). Incorporating perceived supervisor support in harm reduction strategies falls under the promising framework of proactive policing strategies because of its focus on coordinated prevention or reduction of future overdose and drug related harm (Weisburd & Majmundar, 2017; Willis & Toronjo, 2019). The overlap between police attitudes, behaviors and perceived supervisor support found in this study is congruent with prior policing literature underscoring the role of supervisors and ranking officers in sustaining organizational reforms of police agencies (Willis, 2011; Worden & McLean, 2017).

There are several limitations that temper our findings while suggesting fruitful avenues of research. This study is cross-sectional, which precludes our ability to make causal inferences or establish the directionality of the associations we detected. This study modeled perceived supervisor support as an outcome to incorporate attitude and behaviors in a single model. It is not possible to identify whether police officers' attitudes and behaviors influenced perceptions of being supported by law enforcement officers, or conversely, if perceptions of supervisor support influenced attitudes and behaviors. It is likely, however, that a bidirectional relationship exists in which law enforcement officers are influenced by their supervisors' supportive approaches and in turn, the organizational climate is influenced by the attitudes and behaviors of the officers stationed in each of the precincts. Future research warrants longitudinal designs to investigate how these constructs unfold over time. It should also investigate the impact of the police education programs on perceptions of supervisor support and test whether these changes led to changes in police attitudes and behaviors over time. It must also inform the design of programs and policies that generate genuine support among police supervisors. In addition, these interventions should investigate how supervisors can most effectively operationalize and communicate this support to officers in practice.

Our measure of perceived supervisor support was limited to a single question. Dichotomization of a complex construct may overlook important aspects of perceived supervisor support that could be accurately measured through the administration of a validated scale. Future research using adapted scales might better illuminate the nuances and important dimensions of perceived supervisor support not captured by a single dichotomized question. In addition to perceived supervisor support, incorporating scales measuring additional aspects of organizational support such as the features of the built environment, the ease and efficiency of the relevant policies and systems, and an investment in harm reduction equipment and supplies, could yield a better understanding of the discretionary decisions of officers to adopt harm reduction practices and less punitive policing approaches. Data were self-reported introducing some potential for social-desirability bias.

Limitations notwithstanding, our research study offers insights that could be adapted and tailored to other police and criminal justice settings. Training interventions for law enforcement must investigate novel strategies to empower supervisors with the requisite skills to help frontline officers understand the value of improving the health outcomes of contacts with PWID. Findings from this study provide numerous implications for police practices during encounters with people who inject drugs. Most important among them is that police supervisors who wish to align the discretionary behaviors of their officers with the agency goals of linkages to drug treatment and harm reduction rather than arrest and syringe confiscation cannot be tacit in their support, or passive in their evaluations of officer performance. As highly influential actors, police agencies should leverage front line supervisors by actively cultivating them to be street-level champions of innovative police practices.

Conclusion

Supportive leadership and supervision within police precincts may provide promising avenues to affect structural change creating

Table 4

Unadjusted and adjusted Relative Risk estimates of behaviors associated with perceived supervisor support.

	uRR	95%CI	p-value	aRR	95%CI	p-value
Police Behaviors						
Broken needle/syringe	.8	(.6, .9)	.047	.7	(.5, .9)	.002
Referred to social/health program	1.6	(1.3, 1.9)	<.001	1.5	(1.3, 1.9)	<.001
Talk to other officers about infectious disease prevention	1.4	(1.2, 1.6)	.014	1.2	(1.0, 1.4)	.114
Covariates						
Age (Less than 30)	.6	(.5, .9)	.006	.7	(.5, .9)	.015

uRR: Unadjusted Relative Risk; aRR: adjusted Relative Risk; 95%CI: 95% Confidence Interval

organizational climates that foster the more humane treatment of PWID. Supervisory attitudes toward tasks and responsibilities are one aspect of organizational culture that has received increasing attention in social science research on the determinants of police behavior. This study highlights the importance of rewards and encouragement provided by supervisors for officers as an incentive to improve the health outcomes of police contacts with PWID as a strategy of HIV prevention and harm reduction, while simultaneously protecting the human rights of a population that has traditionally suffered at the hands of the police. Creating a climate of support for harm reduction could sustain positive change within police precincts that have otherwise relied heavily on more punitive policing strategies, (Table 4).

Ethics approval

The authors declare that they have obtained ethics approval from an appropriately constituted ethics committee/institutional review board where the research entailed animal or human participation. (please insert name of committee/board and approval number(s)) UCSD IRB

CRedit authorship contribution statement

Phillip L. Marotta: Writing – original draft, Methodology, Data curation, Conceptualization. **Brandon del Pozo:** Formal analysis, Conceptualization. **Pieter Baker:** Data curation. **Daniela Abramovitz:** Formal analysis, Data curation, Conceptualization. **Irina Artamonova:** Conceptualization. **Jaime Arredondo:** Data curation, Conceptualization. **Katie McCreedy:** Data curation. **Steffanie A. Strathdee:** Data curation, Conceptualization. **Javier Cepeda:** Funding acquisition, Conceptualization. **Leo Beletsky:** Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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