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POLICE KNOWLEDGE, ATTITUDES, AND BELIEFS ABOUT OPIOID ADDICTION TREATMENT AND HARM REDUCTION: A SURVEY OF ILLINOIS OFFICERS

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Abstract: Police encounter individuals with opioid use disorder (OUD) during their routine work and are often called to the scene of overdoses. Despite this frequency, officer knowledge and attitudes about addiction, treatment, and harm reduction vary. Views held by officers, and the extent of their knowledge, can impact the decisions they make regarding people with OUD, yet our understanding of these factors is limited. Using stratified random sampling, we surveyed 248 officers from 27 Illinois police departments on their knowledge of addiction and the means to address it. We performed descriptive and regression analyses to examine differences based on officer characteristics. We found a high proportion of officers lacked knowledge of addiction, treatment, and harm reduction. Our findings suggest the need for police training to improve understanding of addiction. Community collaboration and coordination of resources may give officers the tools to better address OUD, reduce harm, and decrease overdose.

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Introduction

The number of Americans who have died due to drug overdose has increased fivefold over the past 20 years; in 2021 over 100,000 such deaths were reported.[1] Police and other first responders find themselves on the front lines of this overdose crisis. However, officer views, knowledge, training, and police department support may vary greatly[2] and considerable myths and misconceptions persist regarding substance use disorders (SUD), treatment, recovery, and harm reduction.[3] Officers' views about SUD's can directly impact how they interact with people who use drugs.[4] A lack of understanding of evidence-based public health approaches among police can have real consequences that negatively affect the health outcomes of individuals and communities.[5]

Officer Knowledge of Addiction

Police officers' knowledge of addiction varies greatly and may be guided by personal beliefs about addiction. Due in part to pervasive stigma against people who use drugs, many believe that people with SUD are to blame for their addiction and will not want to interact with, or assist, them.[6] These individuals may be more likely to be unsupportive of policies to expand treatment, decrease criminal punishments for drug use, or increase access to life saving medications like the opioid overdose reversal drug naloxone. In particular, police officers who view substance use under a moralistic framework are less likely to support treatment and harm reduction policies.[7] Conversely, officers who do not view SUD as a moral failing are less likely to place blame on the user and believe that people can successfully recover from opioid use disorder (OUD).[8]

Officer Views on Resources for SUD's

Many police departments now offer training in overdose response and naloxone administration. Although there is widespread public support for use of naloxone, officers' views of its use are complex. While officers may feel adequately trained and willing to use naloxone, many still believe that its use should be limited, based on a belief it gives opioid users a reason to continue drug use and risky behavior, even though it can allow them to survive an otherwise fatal overdose. [9] In addition, despite their proven effectiveness, one study of first responders revealed overall negative attitudes toward medications for the treatment of opioid use disorder (MOUD), characterizing them as a poor societal investment that "puts more drugs on the streets".[10]

This study further examines officer knowledge and viewpoints on opioid addiction by exploring their knowledge and beliefs in Illinois. We sought to answer the following research questions:

- To what extent do officers have evidence-based knowledge of opioid addiction?
- What were officer views on opioid addiction-related resources (e.g., treatment, MOUDs, harm reduction, training)?
- To what extent were demographic differences associated with different levels of knowledge and views of opioid addiction?

Methods

Sample

The survey sample for this study included 248 police officers from 27 Illinois police departments recruited with permission and assistance from each department's chief of police; this, and the descriptions and methods that follow, have been reported in a published companion study on police stigma toward people who use drugs.[11] The departments who assented to participate had a range of 2 to 298 full-time sworn officers (M = 13.57, SD = 85.5). We attempted to recruit 48 police departments, and 20 agreed to participate—a 41.7% participation rate among targeted agencies. Officer participation from each agency varied from over half of officers (55.6%) to less than 1% (0.03%) (M = 24.4%). We are unable to know, with certainty, the number of officers provided the opportunity to take the survey by department's chiefs. Our recruitment process provided participating chiefs with a script eliciting voluntary participation and a request to provide all officers with a link to the online survey. Police officer participation in survey research varies widely,[12] but officer participation in this study was slightly better than prior statewide surveys of police on SUD topics.[13]

Table 1 displays the demographics of respondents. A majority of our respondents were White, male, had earned a bachelor's degree or higher, and had worked eight or more years in policing. About half of the sample were at the entry-level rank of police officer and over half were assigned to patrol.

Table 1
Demographics of Respondents

	n	%
Gender		
Female	31	12.5
Male	209	84.3
Other/ prefer not to say	8	3.2
Race/ethnicity		
Asian	2	0.8
Black	13	5.2
Latinx	10	4.0
White	205	82.7
Other or multiple race/ethnicity	16	6.5
Unknown	2	0.8
Highest level of education		
High school	5	2.0
Some college	35	14.1
Associate degree	30	12.1
Bachelor's degree	150	60.5
Master's degree or higher	28	11.3
Rank		
Captain/equivalent or above	16	6.5
Lieutenant	10	4.0

Sergeant	42	16.9
Detective	46	18.6
Police officer	126	50.8
Non-sworn employee	7	2.8
Unknown	1	0.4
Years in policing		
0-3 years (new)	24	9.7
4-7 years (early career)	32	12.9
8-15 years (mid-career)	52	21.0
16-25 years (senior)	100	40.3
More than 25 years	40	16.1
Primary policing position		
Administration	22	8.9
Community affairs/outreach	14	5.6
Detective (investigatory)	45	18.1
Narcotics	11	4.4
Patrol	137	55.2
Other/unknown	19	7.7
Career overdose response		
0-5	31	12.5
6-10	39	15.7
11-25	58	23.4
26-50	45	18.1
>50	75	30.2
Someone you care about is/was addicted to opioids		
Yes	72	29.0
No	146	58.9
Don't know	30	12.1
Someone you care about died of opioid overdose		
Yes	34	13.7
No	214	86.3

Note. *N* = 248. Percentages may not equal 100% due to rounding. Race and gender were self-identified.

Measures

The survey instrument administered to Illinois officers in this study was closely based on items utilized by two large, rigorous studies. One was the Criminal Justice Drug Abuse Treatment Studied-II clinical trial, a multisite intervention that measured changes in knowledge, attitudes and beliefs about SUD, treatment, and recovery among community corrections officials.[14] This study directly utilized validated items about addiction and treatment that were adapted for use in our study. The other principal source of items was the study of what influences an officer's intention to refer a person suffering from a mental illness to psychiatric treatment as an alternative to arrest. Compton and colleagues derived survey items from elicitation interviews of

26 police officers and two people with lived experience, then administered the resulting survey to 581 police officers from six police departments in Georgia.[15] Analysis confirmed that the constructs measured by the items, which were based on the Theory of Planned Behavior, fit the data well.[16] The present study maintained the key psychometric aspects of our selected items while adapting them to substance use, addiction, and treatment.

Procedure

We recruited municipal Illinois police departments to take our survey and to ensure specific subtypes of police departments would be adequately represented in our analytic sample, we employed a stratified sampling strategy. We created five strata based on police department location type (urban or rural) and department size (small, medium, and large) based on a count of full-time sworn officers (Table 2). We characterized police departments as rural or urban based on the county-level classifications utilized by the U.S. Census Bureau (n.d.). The number of staff were obtained from state public records.[17] Rural/small police departments employed less than 15 full-time sworn officers; rural/large departments employed 15 or more officers; urban/small departments employed 1-100 officers; urban/medium departments employed 101-249 officers; and urban/large departments employed over 250 officers. We excluded non-municipal police departments such as the state police, county sheriffs, college/university police, railroad police, and park/forest preserve police because their duties often differ from municipal departments which would reduce generalizability of our findings.

Table 2

Police Department Survey Participation by Strata

Police department strata	Departments in the state	Police departments recruited	Police departments in study	Police departments not in study	Response rate by department	Officer sample
					%	*n*
Rural, small	85	20	5	15	25.0	14
Rural, large	11	5	0	5	0.0	0
Urban, small	340	8	5	3	62.5	33
Urban, medium	19	10	6	4	60.0	98
Urban, large	8	5	4	1	80.0	54
Unknown strata		--	--	--	--	49
Total	463	48	20	28	41.7	248

Note: The police departments "not in study" include those who did not respond to recruitment efforts or who were contacted but declined to participate. The rural/urban designation was from 2010 U.S. Census Bureau data and based on county of the police department. The department size was based on the number of full-time sworn officers from the Illinois State Police.

Once police departments were randomly selected from a stratum, we contacted their police chiefs via email to explain the purpose of our research and ask for their department's participation in our online survey. If the police chief agreed, we sent them a brief study description to share with officers, and a link to the consent form and the survey. The survey was administered via Qualtrics, a web-based software that can generate online surveys and collect survey data. We sent up to four follow-up phone calls or emails to the police chiefs if there was no response to our initial email requests to participate in the study. The survey collection occurred from

February to October 2021. The study was evaluated by the IRBs of the Illinois Criminal Justice Information Authority and Lifespan and with minimal risk to human subjects, it was designated exempt.

Imputation of Police Department Location

Using the name of the police department and checking state records, we were able to code the agency as an urban or rural agency and determine the size of the department based on the number of officers (small, medium, and large). Since several respondents declined to enter their police department, we imputed that data for 46 respondents. Qualtrics records respondents' Internet Protocol (IP) address and provides the associated latitude and longitude. We used this data to impute location, a method accepted as a reliable way to gather geographical locations;[18] however, it can only suggest the location where the survey was completed by computer, which may not accurately reflect a respondent's police department. Therefore, we only data where the geographic coordinates of municipalities matched that of a participating department and the dates of its participation. A total of 49 responses did not have latitude and longitude provided by Qualtrics, nor did the respondent indicate their police department; therefore, their police department, urban/rural designation, and agency size remained unknown. We performed a sensitivity analysis to examine differences in results based on imputing data. We found similar results whether we utilized imputed data or not.

Analytic Strategy

We analyzed the data using descriptive statistics and regression analyses with IBM SPSS 23 (Statistical Package for the Social Sciences). For the regression analyses, we examined subscales and the "treatment resources" subscale had four items and acceptable internal reliability (Table 3). The other three subscales, "addiction knowledge," "harm reduction resources", and "officer resources" had low internal reliability scores and were thus treated as ordinal variables. We used Ordinary Least Squares (OLS) regression for "treatment resources," considering the treatment score as a continuous dependent variable and used ordinal regression for the other three subscales. We dichotomized variables of officer characteristics including gender (0 = female, 1 = male), race (0 = Other race, 1 = White), highest academic education (0 = bachelor's degree or higher, 1 = less than bachelors), rank at time of survey [(0 = supervisory (lieutenant, captain, or above); 1 = non-supervisory officer (officer or detective)], years in policing [(0 = late career (7 years or more); 1 = early career (0-7 years)], urban or rural departments (0 = rural, 1 = urban), , knowing someone they cared about is or was addicted to opioids (0 = no, 1 = yes), and knowing someone they cared about died of an opioid overdose (0 = no, 1 = yes). We dichotomized the number fatal and nonfatal drug overdoses encountered in career (0 = 26 or more overdoses, 1 = 0-25 overdoses). We chose that cutoff because our sample was evenly distributed with 128 officers (51.6%) who encountered less than 26 overdoses and 120 officers (48.3%) who encountered more than 26 overdoses. Moreover, there comes a point at which the number of overdoses encountered is large enough that additional overdoses may have a small marginal effect on officer attitudes and beliefs. Although it is inexact, after encountering over two dozen overdoses, additional overdoses may only make a small marginal difference. We categorized department size as small (0-100 officers), medium (101-249 officers), and large (250 or more

officers). We then dichotomized small department size as 1 = small and 0 = medium/large and medium department size as 1 = medium and 0 = small/large.
We reverse scored two survey items before statistical analyses. The reverse scored items were "People illegally use buprenorphine because it gives them a high" in the addiction knowledge subscale and "Harm reduction services that distribute items such as syringes and naloxone can prolong a person's addiction" in the harm reduction resources subscale.

Table 3
Subscales of Officer Knowledge and Views on Opioid Addiction, Treatment, Harm Reduction, and Officer Resources

Subscale	Number of items	*n*	*M*	*SD*	Cronbach's α
Addiction knowledge and views	4	102	17.74	2.371	.216
Opioid addiction treatment	4	244	17.26	3.549	.762
Harm reduction	3	222	11.05	2.616	.351
Officer resources	2	224	7.97	2.017	.433

Note. *N* = 248. Two items were reverse coded, so higher scores on all items of our 6-point Likert Scale indicated more knowledge or positive views of resources.

Results

Officer Opioid Addiction Knowledge and Views

Four questions gauged officer knowledge of opioid addiction (Table 4). A majority of officers "agreed" to "strongly agreed" (i.e., rather than "somewhat agreed" or disagreed) that opioid addiction controls a person's priorities (81.5%), and that people can successfully overcome opioid addiction (63.8%), Most officers were more equivocal about having enough knowledge to make appropriate decisions about people with opioids, however: 50.4% either only "somewhat agreed" or "somewhat disagreed," while 38.8% "agreed." A majority of officers at least "somewhat agreed" that people use buprenorphine because it gives them a high (81.8%). Buprenorphine is an FDA-approved MOUD.

Table 4
Officer Responses on Opioid Addiction Knowledge and Views

Survey items	*N*	Strongly disagree		Disagree		Somewhat disagree		Somewhat agree		Agree		Strongly agree		Mean score
		n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Opioid addiction takes over a person's brain and controls their priorities.	206	3	1.5	2	1.0	2	1.0	31	15.0	67	32.5	101	49.0	5.23
I have enough knowledge to make appropriate police decisions about people with opioid addiction.	224	5	2.2	14	6.3	16	7.1	77	34.4	87	38.8	25	11.2	4.35
People illegally use buprenorphine because it gives them a high. (RC)	104	2	1.9	8	7.7	9	8.7	34	32.7	42	40.4	9	8.7	2.72

People can successfully overcome an opioid addiction.	216	5	2.3	9	4.2	18	8.3	46	21.3	10 4	48.1	34	15.7	4.56

Note. RC = reverse coded for mean score. On a Likert scale from Strongly disagree=1 to Strongly agree=6.

Differences in Officer Knowledge and Views on Opioid Addiction

Ordinal regression analyses were performed to examine differences in responses to knowledge of addiction items by respondent characteristics (Table 5). Results indicated that male officers were 2.1 times more likely to agree that addiction takes over the brain compared to female officers ($\chi 2 = 3.893$, $p = .048$). Results further revealed that officers who had someone they cared about addicted to opioids were slightly less likely (0.5 times) to believe they had sufficient addiction knowledge to make appropriate police decisions ($\chi 2 = 4.032$, $p = .045$). Finally, we found White officers were 3.3 times more likely to disagree that people illegally use buprenorphine for a high compared to officers of other races ($\chi 2 = 4.787$, $p = .029$).

Table 5

Ordinal Regression of Officer Demographics and Items on Opioid Addiction Knowledge and Views

	Addiction takes over the brain			Have enough knowledge			People illegally use buprenorphine for a high RC			Overcome addiction		
	Odds ratios	95% CI		Odds ratios	95% CI		Odds ratios	95% CI		Odds ratios	95% CI	
Demographics		*LL*	*UL*		*LL*	*UL*		*LL*	*UL*		*LL*	*UL*
Gender (1=male)	3.114*	1.008	9.624	1.366	.532	3.504	2.402	.600	9.616	1.279	.491	3.330
Race (1=White)	1.059	.445	2.518	1.787	.807	3.959	4.303*	1.164	15.904	2.217	.962	5.109
Education (1=less than bachelor)	.966	.443	2.110	.716	.353	1.451	2.039	.698	5.956	1.267	.609	2.635
Rank (1=officer or detective)	1.700	.776	3.724	1.464	.734	2.919	1.629	.546	4.864	1.268	.625	2.573
Years in policing (1=0-7 years)	1.021	.459	2.269	.599	.283	1.270	.674	.226	2.013	1.055	.487	2.285
Department rurality (1=urban)	1.164	.223	6.067	1.113	.284	4.361	.580	.081	4.174	1.102	.280	4.337
Small department size (1= small)	.725	.258	2.035	.867	.341	2.205	1.477	.395	5.521	2.192	.819	5.866
Medium department size (1=med)	1.006	.439	2.304	1.539	.732	3.239	1.447	.436	4.808	1.915	.862	4.253
Overdose responses (1=0-25 overdoses)	1.022	.493	2.118	.873	.454	1.681	1.246	.452	3.430	.704	.335	1.397
Someone you care about is/was addicted to opioids (1=yes)	.779	.376	1.615	.498*	.253	.984	2.110	.805	5.531	.636	.319	1.271
Know died overdose (1=yes)	.652	.216	1.968	1.242	.474	3.255	1.386	.313	6.127	1.259	.474	3.343

Note. Sample size per item in order as displayed in table was 206, 224, 104, and 216. RC = Reverse coded.

Officer Knowledge and Views on Opioid Addiction Treatment, Harm Reduction, and Officer Resources

Our survey asked police officers nine questions on their knowledge and views on opioid addiction resources, with deliberate similarities in some cases to test the consistency of their responses (Table 6). A majority of officers viewed treatment with MOUD as "somewhat" to "very useful," (69.8%), as well as saved department resources with effective solutions when dealing with same suspects repeatedly (94.3%). Most officers noted it was "somewhat" to "very desirable" to connect those with opioid addiction to MOUDs (86.9%) and to do so in lieu of criminal charges (63.7%). Most officers at least "somewhat agreed" that carrying naloxone was an officer's duty (69.2%) and meeting people's needs for treatment and services is the best way to reduce addiction-related crime (83.4%). However, over three-fourths of officers (77.5%) at least "somewhat agreed" that distribution of syringes and naloxone can prolong a person's addiction. Eighty-one percent of respondents "somewhat" to "strongly agreed" they had enough training, and over half of officers (58.9%) had enough resources to help those with opioid addiction.

Table 6

Officer Responses on Knowledge and Views on Opioid Addiction Treatment, Harm Reduction, and Officer Resources

Survey items	*N*	Very useless		Useless		Somewhat useless		Somewhat useful		Useful		Very useful		Mean score
		n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Opioid addiction treatment														
Referring subjects who appear to have an opioid addiction to a provider who can prescribe medicines to treat their addiction is…	248	11	4.4	23	9.3	41	16.5	87	35.1	60	24.2	26	10.5	3.97
Referring suspects with an opioid addiction to a provider who can prescribe medicine to treat their addiction *in lieu of criminal charges* is…	248	20	8.1	28	11.3	42	16.9	88	35.5	50	20.2	20	8.1	3.73
		Very undesirable		Undesirable		Somewhat undesirable		Somewhat desirable		Desirable		Very desirable		
Connecting subjects who appear to have an opioid addiction with medications used to treat opioid use disorder is…	244	2	0.8	11	4.5	19	7.8	94	38.5	79	32.4	39	16.0	4.45
Saving a police department's resources by finding solutions for people who repeatedly deal with police is…	245	3	1.2	3	1.2	8	3.3	28	11.4	111	45.3	92	37.6	5.11
Harm reduction		Strongly disagree		Disagree		Somewhat disagree		Somewhat agree		Agree		Strongly agree		Mean score
Carrying naloxone to reverse opioid overdoses is a police officer's duty.	224	20	8.9	24	10.7	25	11.2	56	25.0	66	29.5	33	14.7	4.00
Harm reduction services that distribute items such as syringes and naloxone can prolong a person's addiction. (RC)	223	6	2.7	12	5.4	32	14.3	79	35.4	58	26.0	36	16.1	2.75
The best way to reduce addiction-related crime is to meet a suspect's needs with opportunities for treatment, education, and employment.	223	10	4.5	12	5.4	15	6.7	85	38.1	63	28.3	38	17.0	4.31
Officer resources														
When it comes to responding to people with opioid addiction, I have enough help and resources.	224	21	9.4	30	13.4	41	18.3	63	28.1	57	25.4	12	5.4	3.63
I have enough training to make appropriate police decisions about people with opioid addiction.	224	4	1.8	14	6.3	25	11.2	67	29.9	87	38.8	27	12.1	4.34

Note. RC = Reverse coded for mean score.

Differences in Officer Knowledge and Views of Opioid Addiction Treatment Resources

Results of the linear regression indicated that there was a significant association between education and rurality and officer knowledge and views of treatment resources such as MOUDs (Table 7). Officers with bachelor's degrees or higher were more likely to find treatment resources valuable or desirable than less educated officers (β = -.193, p = .022). Additionally, police officers in urban departments were more likely to find such resources valuable, compared to rural departments (β = .209, p = .015).

Table 7

OLS Regression of Officer Demographics and Items on Knowledge and Views of Opioid Addiction Treatment Resources

Demographics	Treatment resources				
				95% CI	
	B	*SE*	β	*LL*	*UL*
Gender (1=male)	-.400	.219	-.139	-.833	.034
Race (1=White)	-.067	.183	-.028	-.429	.294
Education (1=less than bachelor)	-.375*	.162	-.193	-.695	-.056
Rank (1=officer or detective)	-.290	.154	-.152	-.594	.015
Years in policing (1=0-7 years)	.078	.170	.037	-.257	.413
Department rurality (1=urban)	.722*	.294	.209	.141	1.303
Small department size (1=small)	.243	.214	.120	-.179	.666
Medium department size (1=med)	.169	.168	.096	-.163	.501
Overdose responses (1=0-25 overdoses)	.010	.151	.006	-.288	.307
Someone you care about is/was addicted to opioids (1=yes)	-.058	.152	-.031	-.357	.242
Know died overdose (1=yes)	.043	.225	.015	-.402	.488

Note. Sample size was 244. CI = confidence interval; *LL* = lower limit; *UL* = upper limit. $^{*}p < .05$. $^{**}p < .01$.

Differences in Officer Knowledge and Views of Harm Reduction Resources

Ordinal regression analyses were conducted and revealed a significant association between gender, (medium/large) department size, and knowing someone who died due to an overdose with knowledge of harm reduction resources (Table 8). Male officers were around 2 times more likely to agree that carrying naloxone is a police duty ($\chi2$ = 6.417, p = .011), safe syringes do not prolong addiction ($\chi2$ = 7.546, p = .006), and it is important to meet a suspect's needs (such as education and employment) ($\chi2$ = 6.979, p = .008), compared to female officers. Officers working in small departments had a reduction of 64% in the odds of agreeing that carrying naloxone is an officer's duty ($\chi2$ = 4.800, p = .028) than officers working in medium or large departments. Finally, results indicated that officers who knew someone that died due to an overdose were 1.7 times more likely to agree that meeting a suspect's needs (i.e., education and employment) was the best way to reduce addiction-related crime ($\chi2$ = 4.113, p = .043), when compared to officers who did not know someone who died of an overdose.

Table 8

Ordinal Regression of Officer Demographics and Items on Knowledge and Views of Harm Reduction Resources

Demographics	Harm Reduction– Carrying naloxone is police duty			Harm Reduction– safe syringes can prolong addiction RC			Harm Reduction– Meeting suspects needs		
	Odds ratios	95% CI		Odds ratios	95% CI		Odds ratios	95% CI	
		LL	*UL*		*LL*	*UL*		*LL*	*UL*
Gender (1=male)	3.409*	1.320	8.806	3.720**	1.457	9.498	3.630**	1.395	9.446
Race (1=White)	.821	.381	1.767	1.366	.630	2.962	1.767	.804	3.881
Education (1=less than bachelor)	1.333	.671	2.648	1.956	.974	3.931	.861	.426	1.739
Rank (1=officer or detective)	1.110	.569	2.166	.888	.451	1.748	1.475	.740	2.941
Years in policing (1=0-7 years)	1.032	.500	2.131	1.448	.693	3.026	.977	.464	2.059
Department rurality (1=urban)	1.076	.281	4.125	1.482	.391	5.615	.348	.089	1.360
Small department size (1=small)	.359*	.143	.898	.709	.283	1.774	.825	.325	2.096
Medium department size (1=med)	.690	.336	1.418	.604	.290	1.257	.881	.421	1.844
Overdose responses (1=0-25 overdoses)	.669	.353	1.268	1.389	.727	2.654	.909	.472	1.749
Someone you care about is/was addicted to opioids (1=yes)	.705	.367	1.355	1.520	.784	2.946	.643	.326	1.265
Know died overdose (1=yes)	.489	.189	1.267	.716	.278	1.843	2.736*	1.034	7.239

Note. RC = Reverse coded. Sample size per item in order as displayed in table was 224, 223, and 223.

Differences in Knowledge and Views of Resources for Officers

Ordinal regressions were conducted on the knowledge of resources subscale of two survey items. Results of the regression indicated that officers who knew someone who died of an overdose had a reduction of 71.4% in the odds of agreeing that they have enough help and resources when it comes to responding to people with opioid addiction ($\chi 2 = 6.539$, $p = .011$). No other respondent characteristics were statistically significant regarding officers' knowledge of resources.

Table 9

Ordinal Regression of Officer Demographics and Items on Knowledge and Views of Resources for Officers

Demographics	Officer resources– I have enough help			Officer resources–Enough training		
	Odds ratios	95% CI		Odds ratios	95% CI	
		LL	*UL*		*LL*	*UL*
Gender (1=male)	1.141	.460	2.830	1.130	.445	2.869
Race (1=White)	.917	.428	1.964	1.589	.724	3.488
Education (1=less than bachelor)	1.146	.580	2.264	.921	.458	1.851
Rank (1=officer or detective)	.681	.350	1.327	1.766	.888	3.512
Years in policing (1=0-7 years)	.657	.317	1.362	.583	.277	1.229
Department rurality (1=urban)	.282	.075	1.061	.873	.225	3.392
Department size						
Small (1=small)	.543	.219	1.344	.840	.332	2.125
Medium (1=med)	.754	.368	1.546	1.658	.792	3.469
Overdose responses (1=0-25 overdoses)	.643	.340	1.217	.822	.429	1.573
Someone you care about is/was addicted to opioids (1=yes)	1.295	.676	2.481	.743	.381	1.447
Know died overdose (1=yes)	.286*	.109	.746	1.133	.437	2.937

Note. Sample size was 224.

Discussion

Officer Knowledge and Views of Medications for Opioid Use Disorders

Promisingly, a large majority of officers endorsed the value and usefulness of linkages to treatment with MOUD and to services noting they can conserve police resources and reduce crime. This is consistent with a survey of Pennsylvania officers in which most agreed that police officers should refer those who have overdosed to treatment.[19] Nonetheless, several notable misperceptions existed that could limit the effectiveness of evidence-based interventions for OUDs in police settings. Nearly one-third of officers viewed referral of a person to a provider to prescribe medicine for opioid addiction in lieu of criminal charges as “somewhat” to “very useless.” Currently, the FDA has approved three MOUDs—buprenorphine, methadone, and naltrexone.[20] Research has found these MOUD are associated with decreases in mortality, opioid use, and criminal activity, as well as improved retention in SUD treatment programs,[21] with the greatest benefits accruing to buprenorphine.[22] Further, research has shown that using the criminal

justice system to treat behavioral health issues is not the most effective course of action,[23] with a recent study going as far as to conclude that opioid seizures by police are associated with a significant increase in overdose deaths in the weeks that follow, despite removing potent illicit drugs from circulation.[24] Police arrests may lead to short- or long-term incarceration and while in custody, individuals often do not get the treatment or medications they need.[25] In addition, after release from custody, persons have reduced tolerance to opioids and are then at higher risk for fatal overdose.[26] Therefore, MOUDs may be a more effective response than arrests and charges; however, it is recognized that there may be other factors that officers consider such as the circumstances and severity of suspected offense.[27]

A large majority of officers surveyed (82%), and more likely non-White officers than White officers, agreed that people use buprenorphine because it gives them a high. Buprenorphine is a MOUD that is an opioid partial agonist, so it attaches to opioid receptors in the brain but only enough to suppress withdrawal and cravings.[28] Contrary to survey responses by officers, most patients do not experience a "high" like what is produced by full agonists such as heroin and fentanyl. In addition, the medication produces a "ceiling effect," so increasing the doses does not increase its effects, thereby reducing overdose risk.[29] It is for this reason that buprenorphine is rarely found in the postmortem toxicology of fatal overdose victims[30] and why municipalities have decriminalized nonprescribed possession.[31] Buprenorphine is a safe MOD and can be used for a long period of time—months or even years,[32] with considerable reductions in all-cause mortality accruing after years of retention in treatment.[33] Further, research indicates buprenorphine can reduce opioid use, cravings, withdrawal symptoms, and mortality; increase treatment retention, social functioning, and overall wellbeing.[34]

We found officers with bachelor's degrees and those employed in urban police departments more highly valued medications and resources for opioid addiction. Our finding on education in our Illinois setting is supported by research findings that higher education is associated with reduced stigma toward persons with SUDs.[35] Officer training on the science of addiction that includes a better understanding of MOUD is warranted. Such training may reduce the misconceptions and stigma surrounding the use of medications to treat OUD.[36]

Support for Harm Reduction

Police officers, who outnumber emergency medical services (EMS) staff, are often the first to arrive at the scene of an overdose to administer naloxone,[37] a life-saving medication, thereby saving lives in their communities.[38] Most officers in this study saw doing so as a duty, consistent with prior research.[39] However, close to one-third of officers surveyed (30.8%), and a larger proportion of officers from larger departments (44.7%), "somewhat" to "strongly disagreed" that carrying naloxone to reverse opioid overdoses is a police officer's duty. Our findings were higher than the 15% of officers in a prior Illinois survey who indicated carrying naloxone was not one of their duties.[40] We also found male officers and those from medium or large departments saw carrying naloxone as a duty. Although some officers may not think it is their job, many are legislatively required to do so. Many states, including Illinois, have laws requiring police to carry naloxone.[41]

Over three-fourths of officers at least "somewhat agreed," and more male than female officers agreed, that distribution of syringes and naloxone can prolong a person's addiction. This finding is supported by research that officers believed naloxone administration may denote acceptance or promotion of opioid misuse.[42] This is a misconception; a systematic review found no evidence that naloxone use was associated with increased opioid use or overdose.[43] In addition, some studies found naloxone intervention programs may reduce future opioid use.[44] These findings support the need for training for officers about opioid addiction, how naloxone works and Good Samaritan laws that protect those who call 9-1-1 for an overdose.[45] There is also recent evidence that post-overdose response teams with police as integral members are associated with a reduction in fatal overdoses, [46] but more research is needed to determine their effectiveness across settings.[47]

Officer Knowledge, Support to Help People with Opioid Addiction

Officers who knew someone who died of an overdose were more likely to agree that meeting a suspect's needs (i.e., treatment, education, and employment) is the best way to reduce addiction-related crime. Prior studies indicate that individuals with personal experience with persons with SUD's have more empathy toward, and held less-stigmatizing attitudes of, those with SUDs.[48] Therefore, training of officers should include a component in which a person with lived experience shares their personal story of addiction, treatment, and recovery.[49]

A sizable minority of officers (41.2%) did not think they had enough help and resources to respond to persons with opioid addiction. In order to effectively help citizens with OUD, police departments need to foster collaboration and communication among partners,[50] and leverage champions in police administration.[51] In addition, there should be partnerships between public safety and public health.[52] These partnerships can help communities better understand current and emerging drug-related threats to the community[53] and help coordinate resources and responses.[54] Partnerships can include deflection and pre-arrest diversion programs that link people to behavioral health services and other resources.[55] Such interventions have shown promise in reducing recidivism, reducing health-care related costs, and reducing societal costs overall.[56]

Study Limitations

This study has limitations. One is that we relied on a self-reported survey, a method that carries the risk of respondents inflating their knowledge, guessing at answers, and/or answering in a socially desirable manner regardless of their actual knowledge and beliefs. Assurances of anonymity were made to minimize these risks and surveys are common practice in the field to study sensitive topics, like covered in this study, in a reliable and valid manner.[57] A majority of our sample were White male officers. Only 12.5% of our sample were female officers, and this underrepresented the number of female officers we expected in our sample. That is, 21.2% of all sworn, full-time police officers in Illinois were female based on 2020 data,[58] though we were unable to obtain data on the racial demographics of Illinois police officers at either the state or agency levels. We did not collect respondents' ages to reassure those who may have had concerns about reidentification, but we did collect their number of years in policing by category to examine differences based on employment experience. Future surveys could ask more

nuanced questions on addiction, which could include vignettes, to further capture officer knowledge and the extent to which more specific resources are known, available, and accessible to officers. Finally, while we used stratified random sampling, our survey only captured perspectives of Illinois officers, precluding confident generalization to other settings outside of Illinois. Future research should accurately gauge police knowledge, attitudes and beliefs across the US, in a wide range of jurisdictions, to develop suitable training curricula and to ultimately ensure greater alignment between public safety and public health responses to addiction and overdose.

Conclusion

Many police officers who were surveyed held misconceptions and possessed limited knowledge about addiction, treatment, and harm reduction resources. In particular, many police officers were not knowledgeable about MOUD, believing that nonprescribed buprenorphine is most often taken to get "high." However, many officers possessed accurate knowledge about addiction, particularly those who personally knew someone addicted to opioids, and had an optimistic belief that people can overcome addiction. In terms of resources, most officers falsely believed that harm reduction tools, such as access to sterile syringes and naloxone, prolong addiction. However, many police officers thought connecting individuals to treatment and services was desirable, particularly those with higher education and in urban departments. In addition, many police officers agreed that meeting suspects needs like treatment, education, and employment, particularly male officers and those who knew someone died of an overdose, is the best way to reduce addiction-related crime. These findings suggest officer training that includes persons with lived addiction experience could help officers understand the benefits of medication, treatment, and harm reduction as core parts of the police response to OUD and its associated criminal behaviors; a large scale study of police in Tijuana, Mexico found that casting harm reduction and treatment for people who use drugs as a means to better protect officer health and wellness significantly increased officer receptivity to these interventions.[59] In addition, collaborative efforts between behavioral health and public safety could provide police officers the tools and resources to better refer and assist those struggling with OUD in their communities, potentially reducing overdoses at the community level.

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