UC San Diego

Title

Improving police conceptual knowledge of Mexico's law on cannabis possession: Findings from an assessment of a police education program

Authors

Mittal, Maria L
Artamonova, Irina
Baker, Pieter
et al.

Peer reviewed

Brief Report: Improving Police Conceptual Knowledge of Mexico's Law on Cannabis Possession: Findings From an Assessment of a Police Education Program

Maria L. Mittal, MD[1,2], **Irina Artamonova, MS**[1], **Pieter Baker, MPH**[1,3], **Steffanie A. Strathdee, PhD**[1], **Javier Cepeda, PhD, MPH**[1], **Arnulfo Bañuelos, LCP**[4], **Mario Morales, MS**[1], **Jaime Arredondo, PhD**[1], **Teresita Rocha-Jimenez, MA**[1,3], **Erika Clairgue, MA**[1], **Elaine Bustamante, MD**[2], **Efrain Patiño, MD, MA**[2,5], **Tommi Gaines, PhD**[1], and **Leo Beletsky, JD, MPH**[1,6]

[1]Division of Infectious Diseases and Global Public Health, University of California San Diego, La Jolla

[2]School of Medicine, Universidad Xochicalco, Tijuana, Mexico

[3]Graduate School of Public Health, San Diego State University, San Diego, California

[4]Department of Planning and Special Projects, Secretaría de Seguridad Pública Municipal, Tijuana, Mexico

[5]Public Safety Support Department, Dirección Municipal de Salud, Tijuana, Mexico

[6]School of Law and Bouvé College of Health Sciences, Northeastern University, Massachusetts

Abstract

Background and Objectives: Policing practices do not reflect recent decriminalization of drug possession in Mexico. We assessed knowledge of cannabis law as part of a police education program (PEP) post-drug law reform in Tijuana.

Methods: Officers took pre-/post-PEP surveys; random subsample ($n = 759$) received follow-up assessments. Longitudinal logistic regression (pre-, post-, 3-months post-PEP) measured knowledge of cannabis law.

Results: PEP increased conceptual knowledge of cannabis law from baseline to post-training (AOR = 56.1, CI: 41.0–76.8) and 3 months post-PEP (AOR = 11.3, CI: 9.0–14.2).

Conclusion and Scientific Significance: PEPs improve police knowledge of cannabis law. Reforms should be bundled with PEPs to improve policy implementation. (Am J Addict 2018;27:608–611).

Address correspondence to Leo Beletsky, UC San Diego School of Medicine, Division of Infectious Diseases and Global Health, 9500 Gilman Drive MC 0507, La Jolla, CA 92093–0507. lbeletsky@ucsd.edu.

BACKGROUND

The social and legal harms related to criminalization of Cannabis use may have lifelong consequences.[1,2] Cannabis use is increasing in North America and prohibition laws in Mexico and Canada are rapidly changing to reflect a public health approach to reducing cannabis-related penalties and regulating cannabis use.[1] In Mexico, 8.6% of 12–65 year olds have ever used cannabis. Overall, 1.8 million people report past year cannabis use and cannabis has maintained its position as the principal drug of use in Mexico.[2]

After decades of near-uniform prohibition, cannabis regulation is undergoing massive global change. North America has been active in the domain of cannabis reform over the last two decades with the recent transformation of the regulatory landscape on national and subnational levels.[3]

Mexico implemented a *Ley de Narcomenudeo* (petty drug dealing law) reform in 2009, decriminalizing possession of small amounts of drugs for personal consumption (including "5 grams of *Cannabis sativa*, *Cannabis indica* or Cannabis") and instituted a drug treatment diversion scheme in lieu of incarceration.[4] Despite the *reform*, drug arrests for cannabis possession persist in Mexico. In Tijuana, drug-related arrests increased by 67.8% from 2011 to 2013 and little change has been reported in policing practices by persons who use drugs (PWUD) in Mexico, illustrating the flawed implementation of this policy.[5,6]

In response to changing cannabis laws, some law enforcement agencies have published guides, memorandums, and "Introduction to Marijuana" courses.[7] However, there is a global dearth of implementation research on the operationalization of drug policy reforms among street-level police. Key stakeholders have emphasized a need for education programs that harmonize policing practices with public health priorities.[8] We aimed to assess police knowledge of cannabis possession provisions, which were taught as part of a police education program (PEP) focused on occupational health and HIV prevention over 5 years post-*Narcomenudeo* drug law reform in Tijuana, Mexico.[9] We hypothesized that the PEP, which covered the *Narcomenudeo* law reform and cannabis provisions, would be associated with significantly increased conceptual knowledge of the *Narcomenudeo* drug law reforms over time, including legal limits of cannabis for personal consumption (technical knowledge), and significant improvements in police attitudes toward PWUD.

METHODS

Proyecto Escudo assesses the efficacy of a PEP on policing behaviors that place PWUD and police at elevated health risks; its methodology aimed to evaluate the efficacy of the PEP on the uptake of occupational safety procedures is detailed elsewhere.[9] The 3-hour PEP covers occupational safety, drug policy provisions, and harm reduction topics. This PEP curriculum uniquely bundles occupational safety with a legal knowledge module including *Narcomenudeo* law reform, which includes cannabis provisions (the primary focus of the present study), and a module on public health interventions targeting PWUD.[9] Our binational, multisectoral team completed PEP training for 1,806 active duty police officers at

the Tijuana Police Academy. The study protocol was approved by UC San Diego and Universidad Xochicalco (Tijuana) institutional review boards.

With informed consent, 1751 officers underwent pre-PEP and immediately post-PEP surveys; a random subsample ($n = 771$) was selected for follow-up assessments at 3, 6, 12, 18, and 24 months in the parent study. For the present study results were drawn from participants completing both baseline (pre- and post-PEP surveys) and 3-month follow up surveys. Technical knowledge was assessed by the following question: "Please select the quantity that accurately describes the maximum dose of personal and immediate consumption that a person currently possesses under the current laws of Baja California." Officers who responded to the baseline question about legal cannabis possession quantity (ie, none, 50 mg, 5 g, 500 mg, do not know) were included in this analysis. Conceptual knowledge was assessed by reflecting some understanding of the law, determined by choosing a response other than "none" or "do not know"; technical knowledge was demonstrated by identifying the technically-accurate weight of legal cannabis possession quantity (5 g) in addition to the correct conceptual answer.

Baseline characteristics of the officers with correct knowledge of the law were compared to those with incorrect knowledge of the law. Mann–Whitney tests were used for comparisons involving continuous variables and Pearson χ^2 or Fisher exact tests were used for comparisons involving categorical variables. Given that the conceptual knowledge group includes participants in the technical knowledge group, we have not made any comparisons among the conceptual and technical knowledge groups. Therefore, we have limited comparisons to those participants who had conceptual knowledge and those with no conceptual knowledge of cannabis possession. Univariate logistic regression was used via Generalized Estimating Equations with robust variance estimation and an exchangeable correlation structure used time as a primary predictor with three levels (pre-, post-PEP, and 3-months follow-up), and contrasts were used to assess effect of time on knowledge of cannabis possession. Additionally, for multivariate logistic regression, we controlled for baseline conceptual knowledge and significant demographic differences among the two groups. Statistical analysis were conducted using SAS software (version 9.4).

RESULTS

At baseline, our subsample ($n = 759$) was 85.2% male ($n = 647$), 14.8% female ($n = 112$), median age 38.5 years old (Interquartile Range [IQR]: 33.0–43.0), median years in law enforcement was 11.2 years (IQR: 8.0–18.3). The majority (82.6%, $n = 627$) of participants held an officer rank. The majority of participants were street-level patrol officers at baseline (87.6%, $n = 665$). Most participants (78.4%; $n = 595$) had completed high school or less and those who had completed more than high school were significantly more likely to have conceptual knowledge of cannabis law at baseline than those with high school or less (29.1% vs 19.9%; $p = .02$; Table 1).

A descriptive analysis of baseline demographic variables showed differences between participants with and without conceptual knowledge of cannabis policy. A majority (81.4%, $n = 618$) asserted incorrect conceptual knowledge of cannabis policy but merely 7.8% ($n =$

59) reported incorrect conceptual knowledge post-PEP and 29.6% ($n = 228$) at 3-month follow-up ($p < .001$). Correct technical knowledge also improved post-PEP (53.1%, $n = 400$) and at 3-months (33.5%, $n = 258$) compared to baseline (9.6%, $n = 73$). Positive perceptions of drug law reform (disagreed that that decriminalizing small amounts of drugs can increase occupational risks) were higher post-PEP (36.5%, $n = 281$) and at 3-month follow up (31.9%, $n = 246$; $p < .001$) than pre-PEP (21.2%, $n = 162$). The majority of participants agreed that laws treating drug addiction primarily as a public health problem made their policing job easier at baseline (63.8%, $n = 491$), post-PEP (88.3%, $n = 680$), and at 3-month follow up (77.0%, n = 594; $p < 0.001$). Attitudes toward addiction and PWUD also improved post-PEP as participants increasingly disagreed that PWUD do not care about their health (9.5% pre-PEP, 23.8% post-PEP, and 30.4% at 3-month follow up; $p < .001$), and viewed drug addiction as a disease (85.8% pre-PEP, 96.0% post-PEP, and 91.4% at 3-month follow up; $p < .001$).

In univariate analyses, conceptual knowledge of legal cannabis possession improved immediately post-PEP (Odds Ratio [OR] = 51.2; 95% Confidence Interval [CI]: 37.8–69.3; $p < .001$) and 3 months post-PEP (OR = 10.5; CI:8.4–13.0; $p < 0.001$) compared to pre-PEP. Technical knowledge also improved 3 months after completing training (OR = 4.74; CI: 3.62–6.22; $p < .001$) compared to pre-PEP. At 3 months, participants also continued to agree that laws that treat drug addiction primarily as a public health problem made their policing job easier (OR = 1.90; CI: 1.54–2.34; $p < .001$) compared to pre-PEP. Compared to immediately post-PEP, at the 3-months post-PEP assessment, participants still disagreed that decriminalizing small amounts of drugs can increase occupational risks for the police (OR = 1.75; CI: 1.40–2.18; $p < .001$). The odds of disagreeing with the statement "people addicted to drugs do not care about their health" (OR = 4.14; CI: 3.22–5.31; $p < .001$) or agreeing that drug addiction is a disease (OR: 1.77; CI: 1.34–2.33; $p < .001$) significantly increased.

In a multivariate model, the odds of correct conceptual knowledge of cannabis possession law post-PEP were 56.1 times greater post-PEP (Adjusted Odds Ratio [AOR] = 56.1; CI: 41.0–76.8; $p < .001$) and 11.3 times greater 3 months post-PEP (CI: 9.0–14.2; $p < .001$) compared to baseline. After adjusting for baseline conceptual knowledge, GEE analysis revealed a significant relationship between improvement in conceptual knowledge and every 5 years younger in age (AOR = 1.2, CI:1.1–1.3; $p < .001$) and having completed more than high school education versus high school or less (AOR = 1.4, CI: 1.0–2.0; $p = .029$).

DISCUSSION

This study highlights an implementation gap following the *Narcomenudeo* law reform where, more than 5 years after the reform, a substantial majority of active-duty police officers in Tijuana asserted the incorrect concept that no quantity of cannabis could be possessed under current law. To our knowledge, there has been no other evaluation of a police force in a low or middle-income setting to assess cannabis drug law knowledge.

These results show promise in improving police knowledge of the law. This is particularly important given continued reports of drug-related arrests in Mexico post-drug law reform.[6] Improved conceptual knowledge of cannabis possession laws was seen immediately

following the PEP and at 3-month follow up. This evidence of sustained knowledge of cannabis possession laws adds to growing international evidence that police education programs can close the implementation gap in drug policies and perhaps reduce drug-related arrests, police efforts, and expenditures.[10]

Our study limitations may have included a social desirability bias due to self-report, resulting in underreported negative attitudes toward PWUD. However, self-administered surveys may have reduced this influence since field staff did not conduct the interviews. Additionally, findings may not be generalizable to officers serving under-resourced law enforcement groups in Mexico or in geographical areas where drug law enforcement is not a subject of interest. Given the scope of the parent study,[9] we were unable to assess behavioral change among police officers in terms of cannabis-related arrests. Due to the parent study's focus on occupational health, we were unable to assess the effect police knowledge of the *Narcomenudeo* Law has had on racial disparities, re-entry costs, school expulsions, employment and screening problems in society. Additionally, with our two points of measurement post-PEP, we are limited to study the differences between technical and conceptual knowledge, therefore we have only included conceptual knowledge in our multivariate model and adjusted that to work experience. Further research is needed to address differences between technical and conceptual knowledge of cannabis reforms and behavioral change among police officers.

CONCLUSIONS

Shifting policing behaviors into alignment with formal policy and public health goals could diminish the risk environment of people who use drugs. Drug policy reform should be bundled with PEPs to improve street-level policy implementation. More studies are needed to assess changes in actual policing practices following formal reform and PEPs.

Acknowledgments

REFERENCES

1. United Nations Office on Drugs and Crime. World Drug Report 2017 2017 https://www.unodc.org/wdr2017/field/Booklet_3_Plantbased_drugs.pdf

2. Instituto Nacional de Psiquiatria? Ramón? de la Fuente Muñiz; Comisión? Nacional Contra las Adicciones; Instituto Nacional de Salud Pública; Secretaria de Salud. Encuesta Nacional de Consumo de Drogas, Alcohol y Tabaco 2016 (ENCODAT). Factsheet Consumo de Drogas: prevalencias globales, tendencias y variaciones estatales 2017 Aug 3 2017. https://www.gob.mx/cms/uploads/attachment/file/234856/CONSUMO_DE_DROGAS.pdf

3. Kilmer B, Pacula RL. Understanding and learning from the diversification of cannabis supply laws. Addiction 2017;112:1128–1135. [PubMed: 27891693]

4. Atuesta LH. Drug Policy in Mexico, 2006–2012. Analysis and Results of a Prohibitionist Policy 2015 https://ppd.cide.edu/documents/302668/0/Drug%20Policy%20in%20Mexico. (Accessed 2017 Jan 14).

5. Gaines TL, Beletsky L, Arredondo J, et al. Examining the spatial distribution of law enforcement encounters among people who inject drugs after implementation of Mexico's drug policy reform. J Urban Health 2015;92:338–351. [PubMed: 25300503]

6. Beletsky L, Wagner KD, Arredondo J, et al. Implementing Mexico's "Narcomenudeo" drug law reform: a mixed methods assessment of early experiences among people who inject drugs. J Mixed Methods Res 2016;10:384–401.

7. Griffin D. Introduction to Marijuana for Law Enforcement. 2015 https://www.coloradopost.gov/training/marijuana-training-law-enforcement/introduction-marijuana-le. (Accessed January 11, 2018 2018).

8. Strathdee SA, Beletsky L, Kerr T. HIV, drugs and the legal environment. Int J Drug Policy 2015;26:S27–S32. [PubMed: 25265900]

9. Strathdee SA, Arredondo J, Rocha T, et al. A police education programme to integrate occupational safety and HIV prevention: protocol for a modified stepped-wedge study design with parallel prospective cohorts to assess behavioural outcomes. BMJ Open 2015;5:e008958.

10. Beletsky L, Agrawal A, Moreau B, et al. Police training to align law enforcement and HIV prevention: preliminary evidence from the field. Am J Public Health 2011;101:2012–2015. [PubMed: 21940924]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

TABLE 1.

Baseline characteristics of police officers who participated in 3-month follow-up following a police education program in Tijuana, Mexico (*n* = 759)

Variable	Police officers with conceptual knowledge of cannabis possession *n* = 141; (%, [IQR])	Police officers with no conceptual knowledge of cannabis possession *n* = 618; (%, [IQR])	p-value	Total police officers *n* = 759; (%, [IQR])
Gender				
Female	16 (11.3%)	96 (15.5%)	0.237	112 (14.8%)
Male	125 (88.7%)	522 (84.5%)		647 (85.2%)
Median age	35.0 (29.0–41.0)	38.0 (34.0–44.0)	<0.001	38.0 (33.0–43.0)
Marital status				
Married/Common law	101 (75.4%)	477 (80.4%)	0.194	578 (79.5%)
Other	33 (24.6%)	116 (19.6%)		149 (20.5%)
Educational level				
High school or less	100 (70.9%)	495 (80.1%)	0.023	595 (78.4%)
More than high school	41 (29.1%)	123 (19.9%)		164 (21.6%)
Median years in law enforcement	9.5 (3.1–14.6)	12.0 (9.0–18.6)	<0.001	11.2 (8.0–18.3)
Current rank				
Officer	115 (81.6%)	512 (82.8%)	0.713	627 (82.6%)
Other	26 (18.4%)	106 (17.2%)		132 (17.4%)
Current assignment				
Patrol (e.g., car/truck, foot)	120 (85.1%)	545 (88.2%)	0.322	665 (87.6%)
Administrative (e.g., guard booth)	21 (14.9%)	73 (11.8%)		94 (12.4%)
Commissioned to district/section of Tijuana				
Zona Centro	19 (13.5%)	85 (13.8%)	1.000	104 (13.7%)
Other	122 (86.5%)	533 (86.2%)		655 (86.3%)

PEP, police education program; IQR, interquartile range.