




Tattoo Removal as a Resettlement Service to Reduce Incarceration Among Mexican Migrants

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Abstract

In Mexico, tattooed migrants face discrimination and are at high-risk of incarceration, thus, we assessed whether receiving laser tattoo removal affected the likelihood of incarceration. In 2015–2016, 89 adults ages ≥ 18 years with visible tattoos were recruited at a free-clinic to receive laser tattoo removal or assigned to the wait-list; all completed baseline and 6-month questionnaires. Overall, 97.8% of participants ever migrated to the USA. In multivariate analyses restricted to migrants ($n = 87$), those receiving laser tattoo removal [Adjusted Odds Ratio (AOR) 0.27, 95% CI 0.07–0.89] and possessing a Mexican Voting card (AOR 0.14; 95% CI 0.03–0.58) were significantly less likely than wait-list participants to be incarcerated at 6-months. Previously incarcerated participants were significantly more likely to be incarcerated at follow-up. Tattoo removal may reduce incarceration among Mexican migrants. Future studies can assess other health and social benefits of tattoo removal for migrants/deportees returning to Mexico.

Keywords Tattoo removal · Incarceration · Deported migrants · Mexico · Gang tattoos

Background

While tattoos are common and perceived as a form of self-expression, negative attitudes regarding tattoos or tattooed persons may occur in settings where they are uncommon or associated with deviant behaviors. Tattooed individuals may experience social stigma [1–4] since these images may reflect present or past anti-social affiliations (i.e., gang

involvement), exposure to harmful settings (e.g., prison, jail), or a propensity for risk-taking (e.g., illicit drug use) [5–7]. Negative attitudes regarding tattoos may result in profiling and discrimination; persons with visible tattoos may face difficulties securing employment, housing, social services, or experience victimization and harassment [8].

In Mexican communities bordering the United States, tattoos are often associated with “*narco cultura*” [9, 10],

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a subculture that glamorizes drug-trafficking. Border communities have witnessed increasing levels of drug-trafficking and violence and drug-related activities are viewed negatively by the broader community. Recently, many border communities have experienced population growth due to the deportation of Mexican migrants, who may be expelled by the U.S. due to criminal or drug use histories. These intersecting forces contribute to the stigmatization of migrants in border cities; deportees are often perceived to embody prevailing social issues (e.g., violence, crime, drug use) [1–3, 11–15].

Police victimization is a critical public health concern given the adverse health and social implications on communities' health of [15–17]. In the US-Mexico border city of Tijuana, tattoos have been independently associated with victimization by law enforcement. A recent cross-sectional study conducted in Tijuana ($n = 601$; 77% of participants were migrants to the U.S.) suggests that tattooed individuals (vs. non-tattooed individuals) faced a 53% greater risk of experiencing police harassment [11, 18]. Tattoo iconography, often symbols indicative of gang affiliation (e.g., religious symbols, names, logos), may further exacerbate profiling and harassment by law enforcement. Studies with persons who inject drugs (PWID) in Tijuana have also found that migrants and deportees may be especially vulnerable to victimization by police, including greater number of arrests, extortion, and forced displacement [19] and deported migrants in particular are more likely to be incarcerated than non-deported persons who inject drugs [20].

Marginalization may result in tattoo regret and interest in tattoo removal services. Pinedo et al. [11], documented that among tattooed individuals attending a free clinic in Tijuana, 56% expressed interest in a free tattoo removal service if it were available onsite. This outcome is important given the city's recent interest [21, 22] in promoting the health and social reintegration of its burgeoning deportee population. Considering laser tattoo removal as one option within the array of re-settlement services provided to migrants and deportees is important since it may aid in reducing marginalization and adverse police interactions and it may promote engagement with community institutions.

We drew on a social stigma framework to guide our study. Goffman suggests that physical markers or visual characteristics may produce a stigmatizing response by others [23]. His work has led to the differentiation of internalized and enacted stigma [13, 14, 24]. Enacted stigma refers to the actual behaviors and perceptions of others toward a 'labeled' individual. Link and Phelan [25] have proposed four stages that converge in stigma building: labeling (identifying human differences and assigning label), association of negative attributes (linking of labeled persons to negative stereotypes based on dominant cultural beliefs), separation (placing labeled persons in distinct categories to separate "us"

from "them"), and finally status loss and discrimination. The co-occurrence of multiple negative attributes may reinforce devaluation by the larger community. Deported migrants are often stigmatized by those in the receiving communities due to an assumed criminality [26, 27] or perceptions that they have failed; thus, migrants become tainted [28]. Tattooed migrants are further stigmatized and discriminated [29, 30] when the overlapping label of 'deported migrant' is added to that individual's profile [29]. Thus, in Tijuana, social stigma and the layering of stigmatized attributes may challenge tattooed migrants' successful reintegration into the community following a voluntary or forced return. The stigmatization and exclusion of migrants/deportees is of public health concern due to adverse impacts on their access to health and social resources [29] which may result in their exposure to harmful social settings (e.g., jail) [11, 19, 20].

We conducted a 6-month tattoo removal intervention study with a convenience sample of tattooed individuals residing in Tijuana, most of whom were migrants to the USA or deported from the USA. We examine the relationship between undergoing laser tattoo removal (vs. being wait-listed) and incarceration at 6 months.

Methods

Study Setting and Design

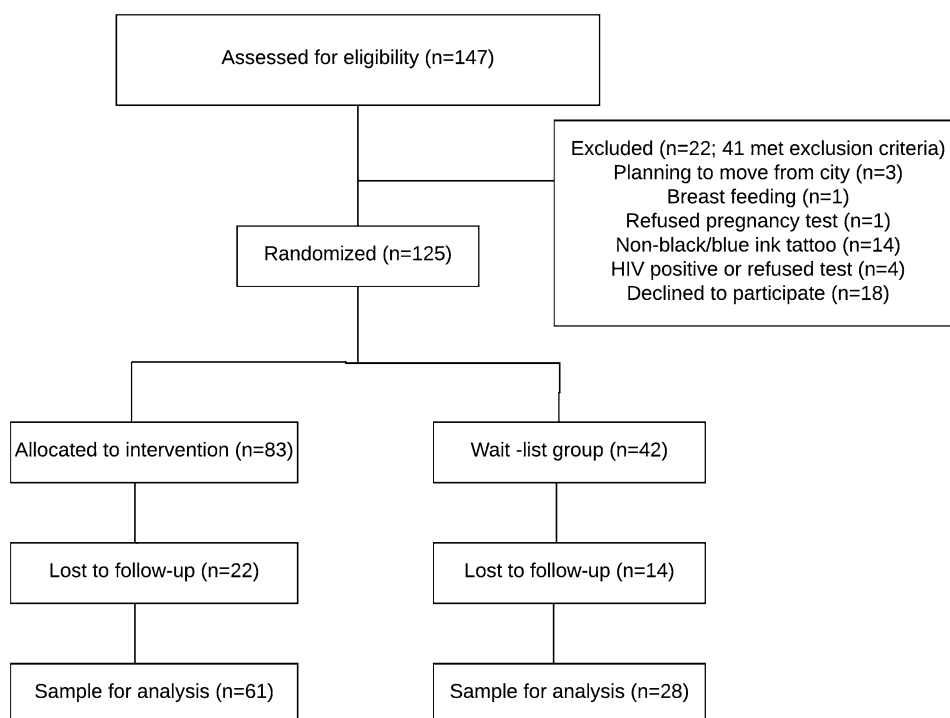
This study was implemented at a free healthcare clinic situated in Tijuana's Zona Norte (i.e., red light district), <0.5 miles from the US-Mexico border; it serves migrants, deportees, and PWIDs and uninsured persons. We employed a Randomized Wait-list-Control design: (1) the intervention group received laser tattoo removal immediately and (2) the wait-list group received the tattoo removal intervention after a 6-month waiting period. The randomization allowed a 2:1 ratio in favor of the treatment group, thus optimizing study resources given the anticipated challenges with participant retention. The study protocol was approved by the Human Subjects Protections Programs at the University of California San Diego, the Universidad Autónoma de Baja California, and the free clinic.

Participants

Recruitment and Screening

In 2015, participant recruitment was initiated via posters in the clinic's lobby, announcements at local non-profit organizations, and by word of mouth. Eligibility screening involved a brief interviewer-administered questionnaire (see Fig. 1) lasting ~5 min. Screening questions included age, preferred language (English/Spanish), ever migrated or visited the

Fig. 1 Participant recruitment and allocation scheme for a laser tattoo removal study for resettling tattooed Mexican migrants, Tijuana, Mexico, 2015–2016



USA (yes/no), a self-reported and visual assessment of tattoo location, color, and content by the interviewer, residency plans for the coming year, self-reported health status, the Patient Health Questionnaire (PHQ-2) Scale [31], social relationships and quality of life via the NIH PROMIS Global Health [32] questionnaire, and willingness to undergo rapid HIV testing or pregnancy testing (women only). All participants responded in Spanish.

Inclusion Criteria

Participant inclusion criteria were: (1) ≥ 18 years old (2) speaking Spanish or English, (3) having visible tattoos (i.e., face, neck, arms, or hands), (4) blue or black ink tattoos, (5) agreeing to undergo HIV rapid testing at baseline and 6 months and, in the event of a positive or inconclusive test, be referred to HIV care (e.g., State of Baja California HIV Program), (6) no active skin infections in the treatment site, and (7) planned residence in Tijuana for ≥ 12 months. Women were excluded if pregnant, per rapid pregnancy test, or if breastfeeding. Persons who were HIV-positive at baseline were enrolled after being linked to care, if not already receiving treatment, and after providing evidence of a CD4 T-cell count > 350 , based on laboratory testing. Participants received \$10 US compensation for travel costs. Due to pervasive food insecurity, snacks were provided at all visits. Pain relief (i.e., ibuprofen, topical lidocaine cream) and FDA approved sunscreen for protecting the treated area were provided. Of the 147 persons screened for participation, 125

were eligible and randomized into the immediate intervention arm or the 6-month wait-list control group (see Fig. 1).

Sample

This study analyzes data from 89 persons who responded to baseline and 6-month questionnaires. Participant retention was impacted by high mobility and unstable housing. We lacked data for 36 participants (29%), including 22 participants (26.5%) assigned to receive immediate tattoo removal and 14 (33%) assigned to the waiting list. No significant differences in age, sex, and tattoo characteristics between those retained and lost to follow-up were identified.

Survey Data Collection and Independent Variables

Trained bilingual interviewers administered questionnaires via a computer in a private room using the Qualtrics, a cloud-based questionnaire software (Provo, UT.). Interviews lasting ~45 min were conducted in English or Spanish. Variables from baseline and 6-month follow-up surveys were selected for this analysis per our theoretical framework (see Table 1 for variable definitions). Domains included: (1) socio-demographics: age, gender, and homelessness; (2) labeling: mean age at first tattoo, tattooed in jail/prison, tattoo location: facial tattoo; (3) negative attributes: self-reported incarceration history (baseline and 6-month follow-up), use of injected drugs (baseline and 6-month follow-up), walking to/from the clinic, having a gang-related tattoo and

Table 1 Study variables for a laser tattoo removal study for tattooed Mexicans, Tijuana, Mexico, 2015–2016

Domain	Variable label	Baseline survey question	Baseline response categories
Demographics			
	Mean age in years	How old are you?	Years, as reported by participant
	Male gender	What is your gender?	Male versus female
	Homeless	In the last 6 months, where have you slept most often?	1: Migrant shelter, church, on the street, Tijuana River Canal, public park, vacant lot versus 0: Friend's or relative's house, drug dealer's house, hotel, rented room/apartment, own home
Labeling attributes			
	Age of first tattoo	How old were you when you obtained your first tattoo?	Years, as reported by participant
	Tattooed in jail	Where did you obtain your tattoos?	1: Tattooed in jail versus 0: Own or friend's house, tattoo parlor, other place
	At least 1 facial tattoo	In what part of your body are your tattoos located?	1: Skull, forehead, eyebrows, eyelids, nose, lips, cheeks, chin, or ears versus 0: nape, 'V' of the neck, right or left shoulder, left or right arm, left or right hand, fingers, right or left wrist, back, chest, calves, hips, genitals, other place
Negative attributes			
	Ever incarcerated	Have you ever been detained in a prison or jail, in Mexico or the USA?	1: Yes, Mexico, yes, USA, or yes, in Mexico and USA versus 0: No
	Ever injected drugs	Have you ever injected illegal drugs (Only asked of persons who have ever consumed illicit drugs)	1: Yes versus 0: No
	Walks to the clinic	When you come to this clinic, what type of transportation do you normally use?	1: Walking versus 0: Car, train, bus, bicycle, taxi, other transportation
	At least 1 gang related tattoo	Can you describe the content or images represented by your tattoos?	1: Logo, symbol, gang name, or other tattoo related to gang activities including tear drops or numbers versus 0: Religious figures, Santa Muerte images, family members' names, text, animals, nature, skeletons/skulls, or weapons
	Self-rated fair/poor mental health status	In general, how would you rate your mental health, including your mood and your ability to think?	1: Fair or poor versus 0: Excellent, very good, good
Status loss			
	Ever deported from the US	Have you ever been deported from the United States?	1: Yes versus 0: No
	Have Mexican voting identification card	Do you have this document Mexican voting Identification Card	1: Yes versus 0: No
	Self-rated very/poor economic status	How would you rate your current economic status?	1: Very poor or poor versus 0: Good, Very good
	Currently unemployed	Currently, are you employed?	1: Yes, I have a permanent job or yes, I have a temporary or part-time job versus 0: No, I am unemployed

Table 1 (continued)

Domain	Variable label	Baseline survey question	Baseline response categories
	Self-rated poor social relationships	In general, how would you rate your satisfaction with your social activities and relationships	1: Fair or poor versus 0: Excellent, very good, good

the NIH PROMIS self-rated mental health status [32] and; (4) status loss: ever deported from the U.S., having a Mexican Voter identification card, self-rated very poor or poor current economic status, currently unemployed, and NIH PROMIS self-rated social relationships [32]. Items from the follow-up survey reference the prior, 6-months occurring between baseline and administration of the follow-up survey.

Dependent Variable

The dependent variable, incarceration between enrollment and the 6-month assessment was assessed by self-report at 6-months follow-up (responses: incarceration in the U.S., incarceration in Mexico, or not incarcerated). We dichotomized responses (yes/no).

The Medical Q-YAG 5 Tattoo Removal Laser

A trained Mexican licensed bilingual physician used a Palomar Medical Q-YAG 5 Q-switched laser which removes monochromatic tattoos [33]. We employed standard safety protection measures (e.g., goggles, face masks, gloves). Participants received multiple tattoo removal sessions.

Follow-Up

At all visits, participants' contact data was updated in a separate password-protected locator database. Monthly, we identified participants due for a tattoo removal session, using phone reminder calls, texts, email, tracing through contacts, monetary reimbursements, and street tracking to maintain ties to participants.

Statistical Analysis

Descriptive statistics were calculated to characterize the study population, stratified by treatment versus wait-list control group (Table 2) and incarceration status at 6-months (Table 3). Differences between groups were assessed using t-tests for continuous variables and Chi-Square tests for categorical variables. We fitted a multivariate logistic regression model to determine factors independently associated with incarceration at follow-up while controlling for independent variables; p-values and 95% confidence intervals (CI) were reported for odds ratios (Table 4). Variables from the bivariate analyses (Table 3) that were statistically significant at $p < 0.05$ were included in the logistic regression model that assessed the independent relationship between tattoo removal and incarceration at follow-up. A multi-collinearity analysis was performed by conducting Multiple Pearson's Correlation Matrixes. Health insurance was highly correlated with possession of the Mexican Voter Identification Card and was excluded from the final model since the Voter

Table 2 Baseline characteristics of tattooed Mexicans, stratified by tattoo removal versus wait-list control group, Tijuana, Mexico, 2015–2016

	Wait-list control group		Tattoo removal group		Total sample		p-value
	%	(n = 28)	%	(n = 61)	%	(n = 89)	
Demographics							
Male gender	81%	(22)	79%	(49)	80%	(71)	0.90
Mean age in years (SD)	44.23 (7.55)		39.32 (8.4)		41.1 (8.4)	0	0.01
Homeless	39%	(11)	23%	(14)	28%	(25)	0.21
Labeling							
Mean age of first tattoo in years (SD)	16.3(3.6)		16.7(5.5)		16.4(4.6)		0.76
Tattooed in jail ^a	56%	(15)	41%	(25)	45%	(40)	0.21
At least one facial tattoo ^a	52%	(14)	52%	(32)	52%	(46)	0.17
Negative attributes							
Ever incarcerated ^a	71%	(20)	67%	(41)	69%	(61)	0.69
Injected drugs in the last 6 months	44%	(8)	45%	(9)	45%	(20)	0.94
Walks to the clinic	70%	(24)	50%	(30)	57%	(54)	0.05
At least one gang related tattoo ^a	48%	(16)	62%	(38)	57%	(54)	0.16
Self-rated fair/poor mental health status	24%	(8)	21%	(13)	22%	(21)	0.80
Status loss							
Ever deported from the US ^a	86%	(24)	78%	(39)	81%	(63)	0.41
Have Mexican voting card	62%	(21)	69%	(42)	66%	(63)	0.48
Self-rated very poor or poor economic status	76%	(26)	53%	(32)	62%	(58)	0.03
Currently unemployed	65%	(22)	62%	(38)	63%	(60)	0.82
Self-rated fair/poor social relationships	24%	(8)	19%	(12)	21%	(20)	0.66

^aDenotes baseline survey variables

Identification Card is the primary mechanism for establishing one's citizenship in Mexico and the gateway to accessing private and public services (e.g., employment, health care). We also conducted a sensitivity analysis whereby 2 non-migrants were excluded from the study; logistic regression analyses for this sub-sample are presented.

Results

Participant Characteristics at Baseline

At baseline (n = 89), most participants were men (81%) with a mean age of 41.2 years, and 28% were classified as homeless (Table 2). All participants were Mexican-born, and 97.8% (n = 87) ever migrated to the USA; 86% were ever deported from the US. Within the labeling domain, 52% of participants had a facial tattoo. Within the negative attributes domain, 69% were ever incarcerated, 42% were tattooed while incarcerated, and 57% had ≥ 1 gang-related tattoo. More than one-half of participants (57%) walked to the clinic and 45% of those who ever used injection drugs, reported injecting drugs in the past 6 months. Only 22% of participants rated their mental health status as fair/poor. Several factors may contribute to status loss; 33% of participants lacked the Mexican Voter identification card, 63%

were unemployed, 53% rated their economic status as poor/very poor, and ~21% rated their social relationships as fair/poor.

Participant Characteristics Stratified by Incarceration Status at Follow-Up

At 6-months follow-up, 21 participants (23.6%) reported being incarcerated at least once in the prior 6 months (see Table 3). Those who were incarcerated at follow-up were more likely to have jail-made tattoos, ever been incarcerated, injected drugs in the last six months, and walk to the clinic, report a poor/very poor economic status, be unemployed, and report fair/poor social relationships. Participants who were not incarcerated at 6-months were significantly more likely to be assigned to the immediate tattoo removal group and to have a Mexican Voter Identification Card.

Factors Independently Associated with Incarceration at Follow-Up

In multivariate analyses, participants randomized into the tattoo removal group were significantly less likely to be incarcerated throughout the 6-month follow-up period [Adjusted Odds Ratio (AOR) 0.22, 95% CI 0.06–0.79; Table 4] as were participants who possessed a Mexican

Table 3 Tattooed Mexicans' characteristics by incarceration status at 6-months follow-up, (n = 89), Tijuana, Mexico, 2015–2016

	Incarcerated, past 6 months (n = 21)		Not incarcerated, past 6 months (n = 68)		Total (n = 89)		p-value
	%	(n)	%	(n)	%	(n)	
Study group							
Tattoo removal group	43%	(9)	76%	(52)	69%	(61)	<0.01
Demographics							
Male gender	86%	(19)	79%	(53)	81%	(72)	0.45
Mean age in years (SD)	43.5 (7.5)	–	40.5 (8.7)	–	41.2 (8.4)	–	0.14
Homeless	41%	(9)	27%	(18)	30%	(27)	0.20
Labeling							
Mean age of first tattoo (SD)	15.7 (4.8)	–	16.8 (5.0)	–	16.5 (4.9)	–	0.40
Tattooed in jail ^a	62%	(13)	40%	(27)	45%	(40)	0.07
At least one facial tattoo ^a	57%	(12)	51%	(35)	53%	(47)	0.65
Negative attributes							
Ever incarcerated ^a	86%	(19)	63%	(43)	69%	(62)	0.04
Injected drugs in the last 6 months	45%	(10)	13%	(9)	21%	(19)	<0.01
Walks to the clinic	86%	(19)	53%	(36)	61%	(55)	<0.01
At least one gang related tattoo ^a	62%	(13)	50%	(34)	53%	(47)	0.34
Self-rated fair/poor mental health status	27%	(6)	19%	(13)	21%	(19)	0.43
Status loss							
Ever deported from the US ^a	94%	(17)	79%	(44)	82%	(61)	0.12
Have Mexican voting card	36%	(8)	85%	(57)	73%	(65)	<0.01
Self-rated very poor or poor economic status	59%	(13)	35%	(24)	41%	(37)	0.05
Currently unemployed	32%	(7)	13%	(9)	18%	(16)	0.05
Self-rated fair/poor social relationships	41%	(9)	21%	(14)	26%	(23)	0.07

^aDenotes baseline survey variables

Table 4 Factors independently associated with the being incarcerated between study enrollment and the 6-month follow-up period, among tattooed Mexicans, Tijuana, Mexico, 2015–2016

Variable domain	Variable	Full sample (n = 89)			Migrants only (n = 87)		
		AOR	95% CI	p-value	AOR	95% CI	p-value
Study group	Tattoo removal group (vs. wait-list control group)	0.22	(0.06–0.78)	0.02	0.27	0.07–0.97	0.05
Status loss	Mexican voter ID at 6 months (vs. no voter ID card)	0.15	(0.04–0.58)	<0.01	0.14	0.03–0.58	<0.01
Negative attributes	Ever incarcerated as reported at baseline (vs. never incarcerated)	6.99	(1.23–39.65)	0.03	11.74	11.57–87.82	0.02
Negative attributes	Walks to the clinic at 6 months (vs. does not walk to the clinic)	2.27	(0.50–10.37)	0.29	2.19	0.47–10.18	0.32
Negative attributes	Injected drugs in the last 6 months (vs. did not inject drugs during the prior 6 months)	2.61	(0.64–10.64)	0.18	2.93	0.67–12.76	0.15

Voter Identification Card (AOR 0.15, 95% CI 0.04–0.558). Those who reported a history of incarceration at baseline were significantly more likely to be incarcerated at follow-up (AOR 6.99, 95% CI 1.23–39.65). Other variables were non-significant.

Our sensitivity analysis revealed that findings from multivariate analyses restricted to migrants were qualitatively different from those obtained in the full sample (those receiving tattoo removal were significantly less likely to be incarcerated: AOR 0.27; 95% CI 0.07, 0.97).

Discussion

To our knowledge, this is the first study to examine the relationship between receiving laser tattoo removal services and incarceration in the US-Mexico border region; it responds to the unique needs of US-Mexico border communities (e.g., Tijuana) that receive large numbers of migrants. This study is also timely and significant because it assesses the efficacy of a tattoo removal service to determine whether the social well-being of migrants may be improved post-deportation. Findings suggest that receipt of tattoo removal services was independently associated with a reduced likelihood of incarceration among a sample of tattooed adults in Tijuana. This intervention may be considered by policy-makers to promote the re-integration of tattooed migrants into Mexican society.

Community re-integration for justice-involved persons may be shaped by four dimensions: (1) individual characteristics and circumstances (e.g., substance abuse, job skills, mental/physical health, and pro-social behaviors), (2) family support, (3) community characteristics (e.g., social networks, rehabilitation programs, proximity to jobs and healthcare services, local crime rates) and (4) public policies (e.g., strategies, programs/policies aimed to support deportees or ex-prisoners). A qualitative study conducted with 12 ex-gang members employed by Homeboy Industries, a community reintegration program that also provides free tattoo removal for gang-involved persons in Los Angeles, found that community reintegration was impeded by employees' inability to leave their gangs, stay sober, secure stable employment, cope with trauma, provide financial support to their family, secure safe and stable housing, and harassment by law enforcement [34]. Prior studies have found that ex-gang members may desire tattoo removal because the images evoke their prior affiliations and prevent initiating a new life free of gang involvement [35]. In a quantitative study conducted in a Laser Dermatology Clinic in Massachusetts, adult patients ($n = 105$) were surveyed about their motivations for tattoo removal, 85% of participants desired tattoo removal services because they reported "feelings of dissociation from the past" that prevented them from forming a new identity and 60% felt embarrassed by their tattoos [36]. Importantly, justice-involved persons experiencing multiple barriers to community re-entry may find themselves in a cycle of incarceration [37, 38] and many of the aforementioned barriers may be linked to social stigma; removing visual markers that promote stigma (e.g., prison/gang tattoos) may facilitate community re-entry.

We found that having a Mexican Voter Identification card independently reduced the odds of incarceration. There is significant evidence to support the need for all

persons to have official documentation that establishes one's identity; those lacking government identification are at increased risk of marginalization, including police targeting. In Tijuana, lacking a government ID post-deportation is associated with adverse social and health outcomes (e.g., discrimination, police targeting, exposure to harmful social environments) [39, 40]. Our findings suggest that having a government ID may positively influence migrants' and justice-involved persons' relationships with law enforcement while also increasing access to social programs, social support, financial resources and employment. Thus, policies that facilitate Mexican migrants' access to a Mexican government ID may benefit the health of individuals and their communities.

Limitations

Our findings should be considered in light of several limitations. Survey data were self-reported and sensitive items (e.g., drug use) may have been under-reported or subject to recall bias. We lacked data on other social factors associated with incarceration (e.g., community policing practices, social support) [41]; these merit further exploration. We did not measure the frequency/dates of incarceration during the follow-up period. A larger sample size is necessary to improve the stability of the estimates. Potentially, participants who had long-term jail/prison sentences were lost to follow-up. Future studies should identify incarcerated or deceased participants during the follow-up period. Finally, results may not be generalizable to other migrants or communities outside of Tijuana, as social/economic conditions vary by region and among population sub-groups.

Conclusions

Findings from this study are promising and cost-effectiveness studies could inform the policy-making process and determine whether a free tattoo removal program delivered by community providers, including public teaching medical schools, may be included within a menu of publicly funded services. For example, Tijuana's Humane Repatriation Program [21, 22], which supports the reintegration of deported Mexican migrants, may consider offering a tattoo removal service as one service within a multi-pronged strategy to improve social integration and reduce incarceration of deportees, an important segment of Tijuana's population. A larger longitudinal study is needed to document the contributions of laser tattoo removal to deportees' health, social and economic well-being.

The present study implemented an intervention that addresses many components of the community re-entry

paradigm: individual characteristics that may be positively influenced by public policies and community supports. Tattoo removal is an evidence-based medical intervention [42–45], yet the research supporting its effectiveness as a social intervention to improve health, social and economic outcomes is sorely lacking. This study aimed to fill this gap in the research literature. Additional research may elucidate how tattoo removal shapes clients' identity, self-esteem, and views of their future selves in the context of a migration process that is physical, cognitive and emotional [46]. Additional research can shed light on how family, community members and institutions perceive individual before, during and following the tattoo removal process. Given the importance of social networks for gang affiliated persons [47–49], additional research may investigate whether clients undergoing tattoo removal may positively influence their peers and social environment, thus promoting broader change beyond the individual.

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