



There is hope and help: Reach and reception of a methamphetamine education campaign in Los Angeles County, California

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ABSTRACT

Introduction: In the context of increasing rates of methamphetamine (meth) overdose in Los Angeles County, California, USA, in 2021 the Los Angeles County Department of Public Health relaunched *Meth Free LA County*, a methamphetamine public education campaign built on Rescue Agency's *Decision Blocks*TM Strategic Framework. **Methods:** To assess campaign reach and reception, we examined media data and an online cross-sectional post-campaign survey in 2021 with a convenience sample of 750 county residents ages 18–54 who had used meth, were at-risk, or had personal relationships with people at-risk. We assessed campaign awareness, receptivity, and perceived effectiveness. Participants also reported concern about meth use in their community, recall of 10 facts from campaign content, and if they had taken promoted actions such as seeking help. We compared proportions between campaign-aware and unaware participants and explored if recall predicted these measures.

Results: Most participants recalled the campaign (84.1%), felt it offered a new way of looking at meth (73.8%), and reported it made them feel that help is available (84.0%) or that it could help reduce their own use (82.4%). Video advertisements received high perceived effectiveness scores. Greater campaign recall was associated with significantly increased odds of being concerned about meth use in the community, recalling facts, and taking promoted actions.

Conclusion: In 2021, *Meth Free LA County* reached its high-risk audiences. Unlike fear-based campaigns its message resonated with high-risk individuals, providing an example of how public education campaigns on meth and similar illicit substances can connect with their audiences.

1. Introduction

Methamphetamine (meth) use in the USA grew 50% from 2015 to 2021, generating more than \$2 billion in healthcare costs annually. (Center for Behavioral Health Statistics and Quality, 2015; Center for Behavioral Health Statistics and Quality, 2023; Winkelman et al., 2018) This trend is evident in Los Angeles (LA) County, California where meth-related emergency department visits quadrupled from 2005 to 2020 and overdose deaths increased by 743% from 2010 to 2021. (Los Angeles County Department of Public Health, 2022; Los Angeles County Department of Public Health, 2022) Reducing meth use is a priority in

the county as 56% of overdose deaths in 2021 involved meth, a pattern that worsened during the COVID-19 pandemic. (Los Angeles County Department of Public Health, 2022; Los Angeles County Department of Public Health, 2020; Los Angeles County Department of Public Health 2022)

Mitigating these trends requires interventions across social-ecological levels. (Birckmayer et al., 2008) A multi-pronged approach should involve health education, however few media campaigns on meth have been reported. Published campaigns have relied on fear and disgust-based messages including *Montana Meth Project/The Meth Project* and *Faces of Meth* in the USA and *Ice Destroys Lives* in Australia.

Abbreviations: AOC, agents of change; AOR, adjusted odds ratio; CDC, Centers for Disease Control and Prevention; CI, confidence interval; ELM, elaboration likelihood model; LA, Los Angeles; MSM, men who have sex with men; OOH, out-of-home; PEH, people experiencing homelessness; SAPC, substance abuse prevention and control division; TTM, transtheoretical model; USA, United States of America.

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(Anderson, 2010; Douglass et al., 2017; Marsh et al., 2017) All employed graphic depictions of extreme physical consequences to deter initiation and potentially promote cessation. Unfortunately, they also fueled stigma and barriers for people who use meth. (Douglass et al., 2017) Additionally, people who use meth without personal experience with extreme outcomes dismissed these campaigns as inauthentic, distancing themselves from genuine risks. (Douglass et al., 2017; Marsh et al., 2017; Copes, 2016; Ferestad and Thompson, 2017) By increasing stigma, reducing social support, and allowing users to discount risks, these campaigns may have unintentionally contributed to continued use. (Ferestad and Thompson, 2017; Hammarlund et al., 2018)

1.1. Meth Free LA County campaign

To disseminate accurate messaging and counter stigma, in February-April 2020 the Substance Abuse Prevention and Control Division (SAPC) of the Los Angeles County Department of Public Health launched *Meth Free LA County*, a general audience campaign that was curtailed by the COVID-19 pandemic after 10 weeks. When relaunching in 2021, SAPC narrowed the campaign’s focus and selected Rescue Agency, a behavior change marketing agency, to redevelop the campaign by redesigning materials, developing a website and mobile-enhanced site (<https://methfreelacounty.org>), creating new content, and relaunching public relations and paid media. The revised campaign had two audiences and corresponding goals: prompting adults who used or were at-risk for using meth to avoid experimentation or seek help (Prevention Audience), and reducing stigma and increasing support among individuals close to at-risk communities (Agents of Change Audience, AOC). (Boeri et al., 2014) Messaging focused on populations at elevated risk for use in the county and their AOC including men who have sex with men (MSM), people experiencing homelessness (PEH), people working multiple concurrent jobs (poly-job workers), and Spanish speakers. (Kipke et al., 2007; Los Angeles County Department of Public Health. Annual Overview, 2021; Nyamathi et al., 2008; O’Donnell et al., 2019)

New content was developed using Rescue Agency’s *Decision Blocks™* Strategic Framework for identifying and overcoming impediments to behavior change to develop effective, equitable communications. (Fernandez et al., 2023) *Decision Blocks* combines behavior change marketing tactics with public health and communication theories to identify levers that assist audiences in surmounting barriers to change. The framework identifies four types of “blocks” that commonly prevent behavior change and potential counteractions: Information Blocks, Impact Blocks, Solution Blocks, and Reinforcement Blocks (Fig. 1).

Applying the framework begins with examining existing data to form hypotheses about relevant blocks, then testing hypotheses via research, identifying the most impactful blocks, developing messages addressing those blocks, and testing content to select the most effective messages.

Decision Blocks applies behavior change theories including the Transtheoretical Model (TTM) and Elaboration Likelihood Model (ELM) to identify approaches that help audiences overcome their blocks. TTM identifies the stages through which an individual moves when changing behavior and the stage-specific tactics that support progress. (Prochaska and Velicer, 1997) Applying this, *Decision Blocks* identifies communications tactics best suited to counter each type of block based on the audience’s needs at that stage. For example, to counter Information Blocks the framework suggests tactics appropriate for individuals in early stages of change such as providing novel information, correcting misinformation, framing arguments emotionally, and using expert sources. After peripheral attitudes shift and the audience is motivated to process the message, cognitive restructuring can occur. Tactics for the Solution and Reinforcement Blocks draw from the Action and Maintenance stages of TTM to support audiences by presenting achievable actions, addressing barriers, normalizing change, and suggesting maintenance strategies. Additionally, *Decision Blocks* applies ELM to shape messaging characteristics to trigger peripheral or central processing strategically. (Petty et al., 1986) For example, Information Block tactics leverage peripheral processing to overcome the counterarguments common when first considering a change. In contrast, Impact Block tactics encourage central processing for audiences that recognize the harms or benefits of a behavior by personalizing consequences, demonstrating empathy, and anticipating resistance.

To redevelop *Meth Free LA County*, following a review of existing campaigns and patterns of meth use we conducted formative focus groups and interviews in 2021 (N = 41). Participants knew the risks of long-term meth use but believed they and their loved ones would not experience the extreme consequences depicted in prior campaigns such as tooth loss/decay and skin lesions. Additionally, participants were unaware of common short-term effects such as paranoia, aggression, and brain damage. Therefore, we identified the Information and Impact Blocks as being most relevant to our audiences. In response, our content portrayed familiar situations to increase personal relevance and trigger processing of novel short-term effects. Content reflected the audiences’ experiences to promote identification with the message and countered resistance by highlighting available resources such as local treatment options. We developed two video advertisements and supporting campaign content using these approaches (Supplemental Fig. 1). The first video, “Behind the Face,” aimed to counter stigmatization by





	Description	Sample Approaches
	Information Blocks What gaps in foundational knowledge does the audience have?	Provide new or novel information about the behavior. Reframe existing knowledge to increase relevance to the audience.
	Impact Blocks How does the audience disconnect themselves from the behavior? How does the audience otherize the risk?	Connect the risks with the audience’s lived experiences to counter distancing and otherization. Anticipate how the audience will reject a message as being irrelevant, and counter with responsive messages.
	Solution Blocks Does the audience believe there are achievable solutions they can picture themselves doing?	Provide realistic, relevant, specific solutions for the audience’s needs that address logistical barriers. Present attainable replacement behaviors and behavior change steps to empower the audience to plan to change.
	Reinforcement Blocks What would prevent the audience from continuing the desired behavior? What ongoing support do they need?	Promote sustainable support systems and maintenance strategies to prevent falling back to previous patterns of behavior and encourage continued attempts for those who relapse.

Fig. 1. Blocks identified in the *Decision Blocks* Strategic Framework, Description of *Decision Blocks* Strategic Framework used to develop 2021 *Meth Free LA County* campaign.

depicting a male removing visual effects makeup that looked like the ‘typical’ meth user from scare-tactic campaigns, while describing common short-term effects. The second, “Turn on the Light,” aimed to increase the relevance of short-term effects by depicting a young man in a familiar setting, a nightclub, who discovered meth’s immediate damage to his body.

1.2. Study objectives

This study describes reach and reception of *Meth Free LA County* in 2021. Aligned with the media campaign’s primary objective of raising awareness, we examined media reach data and conducted a cross-sectional survey to measure campaign and video ad awareness and receptivity within the target audience including among priority populations (MSM, PEH, poly-job workers, Spanish speakers). As a secondary objective, we used survey data to assess if campaign awareness was associated with concern about meth use in the community, knowledge of facts from campaign materials, and actions taken.

2. Methods

Data on digital media performance were collected using in-platform reporting dashboards, Google Analytics, Nielsen Commspoint, and Sprout Social to capture impressions and engagements and to estimate reach. Out-of-home (OOH) impressions were determined using Geopath ratings, which consider consumer trip data, the demographic profile of those likely to have seen the OOH advertisement, the visibility of the placement, and circulation counts.

Survey data were collected from a convenience sample (N = 750) in October–November 2021, overlapping campaign implementation by two weeks. Individuals recruited via market research agencies completed a brief online screener survey to determine eligibility and record electronic informed consent. Los Angeles County residents who were ages 18–34 and had ever used meth or were at-risk (Prevention) or ages 18–54 and had an at-risk personal contact (AOC) were invited to complete the online survey. We selected a sample size of 750 to ensure sufficient power as well as representation from the target audiences and priority populations. Study procedures were approved by the Los Angeles County Public Health, Ambulatory Care Network, and Health Services Administration Institutional Review Board (no. 2020–12-915).

2.1. Measures

2.1.1. Demographics

We report age calculated from birthdate, and gender identity based on current gender identity and sex assigned at birth (cisgender female, cisgender male, or another identity including transgender and gender non-conforming). For sexual orientation, participants selected one option from among gay or lesbian, bisexual, straight or heterosexual, or another orientation (“not sure,” “something else”). For race/ethnicity, participants selected all that applied; mutually exclusive categories reported here are Hispanic, and non-Hispanic white; Black; Asian, Native Hawaiian, or Pacific Islander; and another identity.

2.1.2. Prevention audience

Participants indicated which of the following they had ever used: meth, cocaine, gamma hydroxybutyrate, ecstasy, alkyl nitrites, ketamine, heroin, and fentanyl, prescription opioids, stimulants, or tranquilizers without a prescription. Those who had ever used meth reported their last use (past 30 days, 30 days–12 months, more than 12 months ago). Non-users were asked if they would try meth if a friend offered it (“definitely not,” “probably not,” “probably yes,” “definitely yes”). To capture those who had tried meth and those who might experiment in the future, the Prevention Audience included participants who reported any lifetime meth or other substance use or willingness to try meth (anything other than “definitely not”).

2.1.3. AOC audience

Participants selected all that applied from a list of relationships they might have with people who used or were at-risk for using meth including parent, sibling, or relative; roommate; co-worker; friend or partner; other close personal contact; and volunteer or employee who regularly interacts with people who use meth. Relationships categories were included based on their potential to support an at-risk individual seeking help. (Boeri et al., 2014) Participants selecting one or more were considered AOC.

2.1.4. Priority populations

Participants completed yes/no questions to assess membership in priority populations: MSM (had sex in past year with a male, among men and transgender men), poly-job workers (worked two or more jobs simultaneously in past year), PEH (homeless in past year including couch-surfing, living on the street, or in a shelter, single room occupancy hotel, or car), and Spanish speakers (spoke Spanish at home).

2.1.5. Knowledge & attitudes

Prior to campaign awareness questions, participants viewed 10 facts about meth use featured in campaign messaging and indicated if they had previously heard each (yes/no). Participants were also asked how concerned they were about meth use in their community with options from 1 (not at all concerned) to 5 (very concerned), dichotomized to concerned (4–5) and unconcerned (1–3).

2.1.6. Actions

To identify if they took actions promoted by the campaign, participants indicated if they had done the following in the prior six months (yes/no): discussed the signs and dangers of meth use with others, helped someone else get help for their use, discussed their own use with others, and sought help for their own use.

2.1.7. Campaign awareness

After assessing knowledge, attitudes, and actions we assessed campaign awareness. (Guillory et al., 2022; Kowitz et al., 2018; Stancombe Research + Planning, 2017) First, participants indicated if they recalled any advertising about meth in the past six months and if yes, described it. Participants demonstrated awareness if they mentioned the campaign name or slogans or described the advertisements. We then presented the campaign logo, slogans, two video advertisements, and seven additional advertisements and asked participants to indicate if they had previously encountered each (Supplemental Fig. 1). Participants who recalled any item had campaign awareness (yes/no). We also created an awareness score indicating the number of items the participant recalled (0–12; unaided recall, logo, any slogan, two videos, seven additional advertisements).

2.1.8. Receptivity

After viewing the two video advertisements, participants completed a series of receptivity questions on a scale from 1 (strongly disagree) to 5 (strongly agree). They completed a six-item perceived effectiveness scale associated with attitude and behavior change in previous studies by indicating if each video was worth remembering, attention-grabbing, powerful, informative, meaningful, and convincing. (Davis et al., 2013; Zhao et al., 2022; Davis et al., 2017; Alvaro et al., 2013) A perceived effectiveness score for each ad was calculated by averaging responses to the six questions. Participants also indicated if each video gave them hope that there is help for people who use meth, discouraged them from using meth, and if they trusted the ad. To assess campaign receptivity, participants then indicated if the campaign felt like it was for people like them, offered a new way to look at using meth, had information that could be helpful in cutting down or stopping use, made them feel like there might be help for people who use meth, and did not seem like something they could relate to (reverse coded). (McCausland et al., 2009) We report the proportion who selected “agree” or “strongly

agree.”

2.2. Analysis

For media reach data, we report impressions, video completions, and digital engagements as determined via the media analytics systems described above.

For survey data, we conducted survey data quality checks for straight-line responses, completion time, quality of open-ended responses, and contradictory responses to remove fraudulent cases prior to analysis. Response options included “prefer not to say” which we treated as missing; missing data were handled using listwise deletion. Analyses were conducted using SPSS Statistics Subscription (IBM, Armonk, NY).

We first examined the frequency of demographics and meth use in our sample. To assess awareness and receptivity, we examined the proportion of the full sample with any awareness and who agreed with campaign and video receptivity items and calculated mean video advertisement perceived effectiveness scores. Using χ^2 tests for proportions and *t*-tests for means, we compared results for those who had ever used meth vs. non-users, Spanish speakers vs. English-only speakers, and poly-job workers, PEH, and MSM vs. all others.

We then explored knowledge, attitudes, and actions. Using χ^2 tests, we compared the proportions of campaign-aware and unaware participants who were concerned about meth, recalled each fact, and took promoted actions. We also conducted logistic regression analyses using campaign awareness score (0–12) to predict odds of concern about meth, fact recall, and actions while controlling for age, gender identity, race/ethnicity, sexual orientation, meth use, language, and priority population membership. We report adjusted odds ratios (AORs) and 95% confidence intervals (CIs).

3. Results

3.1. Media reach

Campaign media were active for 16 weeks in July–November 2021 with placements on radio, audio streaming, OOH, social media, digital, and television focused in 90 high-risk zip codes within the county to maximize audience exposure. We achieved nearly 70 million impressions including 25 million impressions via OOH placements, 5.3 million completions of video advertisements, and 7.4 million engagements with digital content including clicks, reactions, and web sessions. The campaign achieved nearly 70% reach within the high-risk zip codes.

3.2. Cross-sectional survey

The plurality of survey participants were ages 25–34 (48.1%) and Hispanic (41.2%; Table 1). The majority identified as male (56.2%) and heterosexual (79.7%). Nearly half had ever tried meth (43.2%). Most participants were both AOC and Prevention audience members (49.3%) or AOC only (41.9%).

Most reported any campaign awareness (84.1%; Table 2). On average participants recalled nearly five of 12 campaign stimuli (mean = 4.59). Any awareness was significantly higher among those who had ever used meth, poly-job workers, PEH, and MSM than their counterparts (all $p < 0.05$). Overall, 84.0% reported the campaign made them feel like there is help available and 73.8% felt it offered a new way of looking at meth, while 82.4% of ever-users felt it could be helpful in cutting down or stopping their use. Both videos received perceived effectiveness scores above 4.00 overall and across priority populations and were seen as hopeful, discouraging of meth use, and trustworthy.

Table 3 presents knowledge, attitudes, and actions among campaign-aware and unaware participants. A significantly greater proportion of campaign-aware participants were concerned about meth use than unaware (74.1% vs. 51.7%, $p < 0.001$). Additionally, a significantly greater proportion of campaign-aware participants recalled three facts,

Table 1

Sample characteristics of survey participants ages 18–54 residing in Los Angeles County, California, 2021.

	n	%
Audience (N = 750)		
Prevention only	66	8.8
AOC only	314	41.9
Prevention and AOC	370	49.3
Age in years (N = 750)		
18–24	142	18.9
25–34	361	48.1
35–44	195	26.0
45–54	52	6.9
Race/ethnicity (N = 745)		
Hispanic/Latino	307	41.2
White, non-Hispanic	277	37.2
Black, non-Hispanic	122	16.4
Asian, Native Hawaiian, or Pacific Islander, non-Hispanic	23	3.1
Another identity, non-Hispanic	16	2.1
Gender identity (N = 747)		
Cisgender male	420	56.2
Cisgender female	315	42.2
Another identity including transgender and gender non-conforming	12	1.6
Sexual orientation (N = 743)		
Heterosexual	592	79.7
Bisexual	95	12.8
Gay or lesbian	46	6.2
Another orientation	10	1.3
Priority populations		
Speaks Spanish at home (N = 750)	212	28.3
Poly-job worker (N = 740)	436	58.9
PEH (N = 739)	165	22.3
MSM ^a (N = 420)	177	42.1
Meth use (N = 750)		
Ever tried meth	324	43.2
Used in past month	243	32.4

^a Among male and transgender male participants; AOC = Agents of Change; MSM = men who have sex with men; PEH = person experiencing homelessness.

discussed the dangers of meth use with others, and helped someone else get help in the prior six months (all $p < 0.05$).

In regressions (Table 4), recalling one additional campaign stimulus was associated with a 12% increase in odds of being concerned about meth use in the community, a 6–18% increase in odds of recalling eight facts from campaign materials, and a 10% increase in odds of having discussed the signs and dangers of meth use with others and having helped others get help. Among ever-users, recalling one additional stimulus was associated with a 10% increase in odds of seeking help.

4. Discussion

Media and cross-sectional survey data indicate that the 2021 *Meth Free LA County* campaign successfully reached its intended audiences including priority populations. The campaign was well-received, hopeful, and relatable. Campaign awareness was associated with greater odds of being concerned about meth use, recalling featured facts, and taking positive actions. Findings provide guidance for future campaigns.

In 2021, *Meth Free LA County* achieved millions of media impressions, which translated to high campaign awareness. Though the initial 10-week implementation in 2020 focused on the general population rather than higher-risk audiences, results from 2021 represent a substantial increase from 25.0% campaign awareness in 2020. (Sentient Research, 2020) Awareness in 2021 was particularly high among priority populations including MSM, PEH, poly-job workers, and ever-users, which may indicate tailored content and focused media contributed to reaching these hard-to-reach audiences. Awareness rates are similar to those reported by other meth education campaigns such as *Ice Destroys Lives* (69.0–78.0%) and the *Montana Meth Project* (88.0–89.0%) and exceed the Centers for Disease Control and Prevention’s benchmark of 75.0%. (Douglass et al., 2017; Stancombe Research + Planning, 2017;

Table 2
Meth Free LA County campaign awareness and receptivity reported in 2021 by adults ages 18–54 in Los Angeles County, California, overall and among priority populations.

	Overall (N = 750)	Ever used meth (N = 324)	Spanish speakers (N = 212)	Poly-job workers (N = 436)	PEH (N = 165)	MSM (N = 177)
Awareness						
Any awareness, %	84.1	87.7 ^b	78.3 ^c	89.7 ^b	90.9 ^b	94.9 ^b
Awareness score (0–12), mean (SD)	4.59 (3.78)	4.79 (3.65)	4.34 (3.89)	5.36 ^b (3.78)	6.28 ^b (4.08)	6.46 ^b (3.68)
Campaign receptivity, %						
Feels like it's for people like me	65.4	81.2 ^b	55.1 ^c	70.7 ^b	72.7 ^b	86.9 ^b
Offers a new way to look at using meth	73.8	79.2 ^b	70.8	76.5 ^b	73.2	77.4
Made me feel like there might be help out there for people who use meth	84.0	84.8	84.8	84.7	79.1	86.4
Has information that could be helpful in cutting down or stopping my meth use ^a	—	82.4	82.1	85.6	76.1	85.0
Doesn't seem like something I can relate to (reverse coded)	35.5	45.9 ^b	33.8	34.6	30.4	22.2 ^c
“Behind the Face” video advertisement						
Perceived effectiveness score (1–5), mean (SD)	4.16 (0.70)	4.12 (0.68)	4.18 (0.70)	4.20 (0.71)	4.14 (0.75)	4.31 ^b (0.61)
Gives me hope that there is help for people who use meth, %	81.1	82.2	78.3	80.6	76.8	83.5
Trust the information in this ad, %	86.1	84.6	87.1	88.1	80.2 ^c	84.8
Discourages me from wanting to use meth, %	70.0	63.8 ^c	59.3 ^c	71.0	61.0 ^c	73.7
“Turn on the Light” video advertisement						
Perceived effectiveness score (1–5), mean (SD)	4.05 (0.75)	4.02 (0.72)	4.03 (0.82)	4.14 ^b (0.74)	4.02 (0.78)	4.30 ^b (0.60)
Gives me hope that there is help for people who use meth, %	76.9	78.6	78.6	79.6	72.2	82.7 ^b
Trust the information in this ad, %	79.4	77.5	81.0	80.3	78.3	85.6 ^b
Discourages me from wanting to use meth, %	72.6	64.8 ^c	67.5 ^c	73.6	65.0 ^c	77.4

^a Among participants who ever used meth (N = 324).
^b Significantly higher than participants not part of the subgroup (p-value < 0.05).

^c Significantly lower than participants not part of the subgroup (p-value < 0.05); MSM = men who have sex with men; PEH = people experiencing homelessness.

Table 3
Comparison of concern about meth, fact recall, and actions taken between adults ages 18–54 in Los Angeles County, California with and without awareness of the Meth Free LA County campaign, 2021.

	Aware (N = 631)	Unaware (N = 119)	$\chi^2(1)$	p-value
Concerned about meth use in community, %				
Somewhat or very concerned	74.1	51.7	23.596	< 0.001
Recalled key campaign facts, %				
Every time you use meth, it damages the part of your brain that controls motor function, permanently affecting your reaction time and coordination.	70.0	62.1	2.865	0.091
Long before you can see any physical effects, meth use begins destroying a person's brain.	70.3	63.2	2.300	0.129
Signs of meth use include paranoia, aggression, and hallucinations.	74.3	80.2	1.804	0.179
Meth is highly addictive, but it is possible for someone who uses meth to quit.	76.6	86.1	5.063	0.024
Meth kills more people in Los Angeles than any other drug.	60.6	33.0	29.662	< 0.001
Using meth cuts off oxygen to your skin, causing decay that starts with your first hit.	63.5	36.3	28.966	< 0.001
Meth permanently destroys your body every time you use it, long before you can see any physical effects.	73.3	61.7	6.353	0.012
Meth kills neurons in your brain, permanently damaging your ability to think clearly and control body movements.	70.3	73.7	0.524	0.469
Meth destroys the wiring in your brain's pleasure centers, making it nearly impossible to feel pleasure in things you used to enjoy.	66.0	61.7	0.789	0.374
There is no one face of meth. Not all people who use meth have physical effects or look like the stereotype of a meth user.	61.4	52.3	3.269	0.071
Actions in past 6 months, %				
Discussed signs and dangers of meth use with others	27.7	15.1	8.327	0.004
Helped someone else get help for their meth use	26.6	6.7	22.080	< 0.001
Discussed own meth use with someone else ^a	41.5	32.5	1.192	0.275
Sought help for own meth use ^a	25.7	15.0	2.179	0.140

^a Among participants who ever used meth (N = 324); **Bold** indicates p-value < 0.05.

Centers for Disease Control and Prevention, 2014; Media, 2008; Richards, 2014) Furthermore, in 2021 *Meth Free LA County* reached its audience efficiently with a per capita media spend of \$0.17, compared to \$25 for the *Montana Meth Project* in 2005 (equivalent to \$35 in 2021). (Siebel and Mange, 2009) Though audiences and media channels for the campaigns differed, high awareness of *Meth Free LA County* within its intended audiences may indicate that tailored efforts for high-risk populations can reach their audiences with accessible budgets.

The campaign was also positively received. Both advertisements received a high perceived effectiveness score, which has been associated with changes in intention and behavior in prior tobacco and substance use studies. (Davis et al., 2017; Alvaro et al., 2013) Participants felt the

Table 4

Campaign awareness score as a predictor of concern about meth, campaign fact recall, and actions taken among adults ages 18–54 in Los Angeles County, California in 2021.

	AOR [95% CI]	p-value
Concerned about meth use in community		
Somewhat or very concerned (N = 727)	1.12 [1.06–1.18]	< 0.001
Recalled key campaign messages		
Every time you use meth, it damages the part of your brain that controls motor function, permanently affecting your reaction time and coordination (N = 693)	1.11 [1.06–1.17]	< 0.001
Long before you can see any physical effects, meth use begins destroying a person's brain (N = 691)	1.06 [1.01–1.12]	0.017
Signs of meth use include paranoia, aggression, and hallucinations (N = 702)	1.03 [0.98–1.09]	0.237
Meth is highly addictive, but it is possible for someone who uses meth to quit (N = 688)	0.99 [0.49–1.05]	0.795
Meth kills more people in Los Angeles than any other drug (N = 694)	1.12 [1.07–1.18]	< 0.001
Using meth cuts off oxygen to your skin, causing decay that starts with your first hit (N = 687)	1.18 [1.12–1.24]	< 0.001
Meth permanently destroys your body every time you use it, long before you can see any physical effects (N = 687)	1.08 [1.03–1.14]	0.002
Meth kills neurons in your brain, permanently damaging your ability to think clearly and control body movements (N = 690)	1.06 [1.01–1.12]	0.023
Meth destroys the wiring in your brain's pleasure centers, making it nearly impossible to feel pleasure in things you used to enjoy (N = 690)	1.08 [1.02–1.13]	0.004
There is no one face of meth. Not all people who use meth have physical effects or look like the stereotype of a meth user (N = 691)	1.06 [1.01–1.11]	0.014
Actions in past 6 months		
Discussed signs and dangers of meth use with others (N = 731)	1.10 [1.04–1.15]	< 0.001
Helped someone else get help for their meth use (N = 731)	1.10 [1.04–1.15]	< 0.001
Discussed own meth use with someone else ^a (N = 317)	1.00 [0.93–1.07]	0.897
Sought help for own meth use ^a (N = 317)	1.10 [1.02–1.19]	0.020

^a Among participants who ever used meth; All models adjusted for age, gender identity, race/ethnicity, meth use, sexual orientation, language, and priority population membership; **Bold** indicates p-value < 0.05; AOR, adjusted odds ratio; CI, confidence interval.

advertisements were trustworthy, hopeful, and for people like them, indicating the campaign may have countered rather than contributed to stigma. Furthermore, participants found the campaign empowering, as most ever-users said the campaign would be helpful in cutting down or stopping their use. This contrasts starkly with previous meth education campaigns that increased fear, stigma, and otherization. (Ferestad and Thompson, 2017)

Finally, although our cross-sectional study cannot determine causality, we did measure knowledge, attitudes, and actions among campaign-aware and unaware participants. We found that recalling more campaign stimuli was associated with greater odds of being concerned about meth use, recalling campaign facts, and taking promoted actions including seeking help. Evidence from a longitudinal, multi-state evaluation of Truth Initiative's *The Truth About Opioids* campaign indicated that exposure to relatable, non-stigmatizing messaging was positively associated with changes in audience knowledge, attitudes, and behavioral intentions, though a much lower proportion of the sample had misused opioids (4.7%) or knew someone who did (21.8%) than our sample. (Rath et al., 2021) While our study cannot determine if awareness led to desired knowledge, attitudes, and actions, positive results from the evaluation of Truth Initiative's campaign indicate that further research is warranted to explore if and how this approach to

substance use media campaigns impacts attitudes, knowledge, and behavior.

We believe *Meth Free LA County* reached and was positively viewed by its high-risk audiences due to our use of the *Decision Blocks* Strategic Framework to identify the types of blocks preventing behavior change in our audiences and the most appropriate countering tactics. Prior campaigns focused on extreme consequences of heavy use, hoping fear and disgust would change behavior. (Douglass et al., 2017; Ferestad and Thompson, 2017) Unfortunately, this did not have the intended effect: youth use rates were not meaningfully impacted and otherization may have contributed to continued use among those already using meth. (Anderson, 2010; Douglass et al., 2017; Marsh et al., 2017; Copes, 2016) Instead, following the *Decision Blocks* framework we used formative research to understand our audience's most pressing blocks to change, and then selected tactics to address their Information and Impact Blocks: presenting novel information, increasing personal relevance, tackling stigma, and anticipating resistance. Increasing personal relevance, presenting novel information, and anticipating resistance may have contributed to most ever-users believing that the campaign was for people like them and could be helpful in reducing or stopping their use. Additionally, the campaign's efforts to tackle stigma and anticipate resistance may have contributed to most participants reporting that it made them feel like there is help available and offered a new way to look at meth. In this way, we believe the tactics selected based on the *Decision Blocks* Strategic Framework were responsible for the campaign's positive reception, demonstrating how media campaigns can address high-risk substance use without creating stigma.

4.1. Limitations

Limitations include a non-representative sample lacking longitudinal data or a control group, which precludes causal conclusions and limits generalizability. The campaign had a limited launch in 2020, and so awareness rates from 2021 are not directly comparable to year-one awareness rates for other campaigns. Additionally, post-campaign self-report data may be subject to desirability and recall biases which could affect campaign awareness, knowledge, attitudes, and actions reported here.

5. Conclusions

In reporting on *Meth Free LA County*, we introduced a novel approach to health communications for meth and similar substances. For decades campaigns have employed fear and disgust to address substance use. (Anderson, 2010; Douglass et al., 2017; Marsh et al., 2017) Unfortunately, this has rarely reduced use and instead has perpetuated stigma and reduced social support for recovery. (Anderson, 2010; Marsh et al., 2017; Copes, 2016; Ferestad and Thompson, 2017) By using the *Decision Blocks* Strategic Framework to identify the factors blocking our audiences from behavior change, we were able to engage them in a personal and empowering way. We created messages that our audiences felt were relevant, trustworthy, and informative by presenting realistic immediate consequences and challenging otherization. As a result, *Meth Free LA County* achieved high rates of campaign awareness with a low cost per capita and was positively received by its audiences. *Meth Free LA County's* unique approach and application of the *Decision Blocks* Strategic Framework to identify the most pertinent blocks to behavior change serves as an example of a promising approach to public education campaigns for substance use.

CRedit authorship contribution statement

Carolyn A. Stalgaitis: Conceptualization, Methodology, Data curation, Investigation, Formal analysis, Writing – original draft, Writing – review & editing. **Jeffrey W. Jordan:** Conceptualization, Methodology, Supervision, Writing – review & editing. **Brandon Tate:**

Conceptualization, Methodology, Supervision, Writing – review & editing. **Brian Cruse:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Michelle Bellon:** Conceptualization, Supervision, Writing – review & editing. **Rangell Oruga:** Funding acquisition, Conceptualization, Supervision, Writing – review & editing. **Brian Hurley:** Funding acquisition, Supervision, Writing – review & editing.

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.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

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