

**Sex, Drugs, and Skateboarding:
Public Support for Prevalence Reduction vs. Harm Reduction**

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Abstract

A random-digit-dial telephone survey of 1050 California adults examined public attitudes toward prevalence reduction (PR; reducing the number of people engaging in an activity) and harm reduction (HR; reducing the harm associated with an activity) across three controversial domains (heroin use, tobacco use, and teen sexual behavior), and a less controversial risky sport (skateboarding). PR was viewed favorably for heroin (85%), tobacco (72%), and teen sex (53%), but not for skateboarding (23%). For HR, 50% favored providing clean needles to addicts and majorities favored less harmful forms of tobacco (65%), free condoms for teens (64%), and safely designed skateboarding parks (86%). Contrary to expectation, views of PR and HR were largely independent of each other, but opinions of each were bimodal. Policy ratings were partially explained by the perceived harmfulness and immorality of the activity, and (for skateboarding) by personal exposure to the activity.

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Public Support for Prevalence Reduction vs. Harm Reduction

The term “harm reduction” -- so unobjectionable on its face – has become such a “hot button” label that many public health researchers shy away from using it. Over the past decade, a similar conflict has played out in many different domains, both domestically and internationally – AIDS prevention, population control, sex education, illicit drug policy, alcohol treatment, and tobacco control policy. In each case, advocates argue that pragmatic steps to reduce the harmful consequences of a risky behavior will save lives and reduce needless suffering, while opponents counter that these steps might “send the wrong message” -- encouraging or enabling the behavior and weakening society’s moral stigma against it.

In political discourse, harm reduction is often pitted against concepts like abstinence, prevention, and treatment (in public health debates), or deterrence and incapacitation (in criminology). In work on illicit drug policy, we have used the terms *prevalence reduction* (reducing the number of users), *quantity reduction* (reducing the amount consumed by each user), and *micro harm reduction* (reducing the average harm per dose, including harms to users and harms to non-users). [1][2] By emphasizing the underlying goals, these terms avoid false dichotomies or a confounding of strategies with tactics.

From an analytic standpoint, all three strategies contribute to a broader goal, *macro harm reduction* (reducing the total harm to society), which, for tangible (rather than purely symbolic) harms can be defined as $Macro\ Harm = Micro\ Harm \times Prevalence \times Quantity$, summed across types of harm (health, public safety, etc.). But the strategies are potentially in tension, particularly if efforts to reduce prevalence increase harm (as argued by many drug policy reformers), if efforts to reduce quantity discourage abstinence (as argued by opponents of “controlled drinking”), or if efforts to reduce average harm encourage the prevalence or quantity (e.g., the argument that harm reduction “sends the wrong message”). There is evidence suggesting that some micro harm reduction programs do indeed reduce harm without an offsetting increase in risky behavior: e.g., syringe exchanges [3]; “safe sex” education [4]; and condom distribution programs [5]. But evidence is less consistently supportive for less harmful

forms of tobacco [6], and for injection drug “zones of tolerance,”[2] and in all of these domains, methodological obstacles have created vocal skeptics.

A point often overlooked in these is that modern society routinely embraces harm reduction – in the guise of “safety regulation” – in a wide variety of risk domains, including automobile and other product designs, traffic rules, institutionalized sports, food inspection, pharmaceutical packaging, and so on. In each case, it is taken for granted that people will engage in the behavior, and steps are taken to make it less risky. These domains differ from the aforementioned public health controversies along a number of dimensions: Social stigma, popular moral judgment, legality, harm to others, familiarity, and prevalence. Yet there is little explicit discussion of the criteria by which the appropriate mix of prevalence reduction, quantity reduction, and harm reduction might be identified. Thus, in the present study, a representative sample of California adults responded to a variety of questions about the acceptability of prevalence reduction and harm reduction approaches to one of four different risky behaviors – heroin use, tobacco use, teen sex, or skateboarding. Respondents were asked to evaluate these policy approaches with respect to their efficacy but also their moral appropriateness. A number of possible antecedents of these policy views were examined, including self-reported demographics, political ideology, religious affiliation, and perceptions of the behaviors’ harms, commonality, familiarity, controllability, and moral acceptability.

Four domains of risky behavior

Heroin. There are somewhere between 750,000 and 1,000,000 heroin addicts in the United States and at least 3 million American adults have used heroin at least once in their lifetime.[7] Harms to the user include addiction, a heightened risk of HIV/AIDS and other infectious diseases, and accidental overdose. Heroin was the third most frequently mentioned illicit drug reported by emergency departments in 2002.[8] Heroin and morphine account for over a third of accidental drug deaths in most American cities.[9] Injection drug use is implicated in about a third of all AIDS cases in the US.[10] A variety of polls have found that Americans a plurality to a majority of Americans (44 to 61%) favor needle exchange programs.[11], [12], [13] Yet such programs are quite rare in the US, and many operate

illegally or quasi-legally. The federal government has resisted federal funding in both Democratic and Republican administrations.

Tobacco. In 2002, 45.8 million American adults – about 22.5% – were current tobacco smokers.[14] The Surgeon General estimates that smoking kills about 440,000 Americans every year, shortening smokers lives by over a decade on average, and costing the nation \$157 billion a year.[15] Harm reduction interventions for smoking include low-tar tobacco, filtered cigarettes, and a variety of more controversial delivery mechanisms (snuffs, etc.).[IOM] Tobacco harm reduction has appeared to receive little attention in opinion polls. A 1998 survey found that 73% of Americans agreed that the US FDA should “require the reduction or removal of harmful ingredients, including nicotine, from tobacco products.”[16] A 2002 survey of members of the tobacco control community found that over half expected harm reduction to have unintended negative consequences.[17] And various surveys indicate that a majority of smokers believe that low-tar tobacco reduces the risks of smoking.[18]

Teenage sex. The 2001 national Youth Risk Behavior Survey of 9th-12th grade students estimated that almost 46% had had sexual intercourse at least once. Of the 33% who had intercourse in the past 3 months, at the time of their last sexual intercourse 42% did not use a condom, 82% were not using birth control pills, and 26% were using alcohol or drugs. Five percent of females had been pregnant and 4% of males had gotten someone pregnant.[19] The teen birth rate (48.7 births per 1,000 women age 15-19) has dropped considerably since the late 1950s, but the fraction of those births involving unmarried women has risen from less than 20% to almost 80% over the same period.[20]

Harm reduction interventions to address teenage sexuality include “safe sex” education and ready access to contraceptives. Ninety percent of American adults believe that high schools should teach students about the use of “condoms as protection against HIV and other sexually transmitted diseases.”[21] In a 2003 DDB Needham Worldwide national survey, 49% of US adults agreed that “public high schools should be allowed to distribute condoms to students.”[22] When asked about “making condoms available in public schools to prevent disease and unwanted pregnancies,” a 1994 NBC/Wall Street Journal poll found that 32% were strongly in favor and 34% were strongly opposed.[23]

Skateboarding. In order to identify factors that explain support for prevalence reduction, and opposition to harm reduction, it is useful to compare these controversial domains to one where harm reduction might be less contested, and where prevalence reduction efforts might be actively resisted. In the present survey, skateboarding was chosen as a comparison activity that is risky but legal and relatively uncontroversial, with no organized prevalence reduction efforts. It was chosen as a plausible comparison because it is mostly practiced in non-institutionalized settings (unlike football or hockey), it is far less ubiquitous than automobile driving, and it has subcultural elements (slang, styles of dress, etc.) at least somewhat reminiscent of drug subcultures. A 2003 National Sporting Goods Association survey estimated that 9% of people age 7 or older had participated in skateboarding in the past year. [24] In 1998, there were an estimated 51,500 skateboard-related injuries treated in American emergency rooms – 8.9 injuries and 0.28 hospitalizations per 1,000 participants.[25] This is about half the injury rate for basketball and football, but skateboarding accidents often involve serious head trauma.[26] Six out of ten skateboard injuries involve children under 14.[27]

METHODOLOGY

Sample Characteristics

The study was a module in the Golden Bear Omnibus Survey, a Computer-Assisted Telephone Interviewing (CATI) survey of the State of California, conducted by the Survey Research Center, University of California, Berkeley.

The sample for Golden Bear Omnibus Survey was a cross-sectional RDD sample covering residential telephone exchanges in California. Both English and Spanish speakers were included in the sample. In each selected household, an attempt was made to interview one person. The sample of telephone numbers for this survey was generated using list-assisted random-digit sampling, which preserves the characteristics of a simple random sample but uses computer algorithms to reduce the number of unproductive calls to non-working telephone numbers and to obtain a higher proportion of households than one would achieve by simple random-digit dialing. The data collection period ran from

September 17, 2003 to November 22, 2003. There were 5,417 selected phone numbers, 3,225 eligible households, and 1,050 completed cases, with a non-response rate (refusals + never at home) of 23.8% of eligible households and 42.2% of selected respondents. Nine hundred and sixty four (92%) respondents were interviewed in English and 86 (8%) were interviewed in Spanish. The total interview (including the other modules not reported here) ranged from 11 to 110 minutes (mean = 38 minutes). There were 9 modules in total; the policy attitude data presented here are from module 3 and the demographic data are from modules 5 and 9.

Ages ranged from 18 to 103, with a mean of 46; the first, second, and third quartiles were 33, 45, and 56, respectively. The sample was 55% female. Sixty two percent were white/Caucasian, 6% were Black/African-American, 18% were Hispanic/Latino, 4% were Asian, and the remaining 10% selected other racial or ethnic categories. Seventy two percent were parents. Ninety two percent had graduated from high school, and 39% had graduated from college. Twenty four percent identified themselves as Protestants, 29% identified themselves as Catholics, and 47% identified other religious affiliations. Twenty two percent identified themselves as politically conservative, 15% as moderate-leaning-conservative, 22% as moderate, 15% as moderate-leaning-liberal, and 23% as liberal. Sampling weighting was used to adjust for probability of selection, and post-stratification weighting was used to adjust for differential non-response and telephone ownership rates across demographic groups.

Research Design

Participants were randomly assigned to one cell of a 2(Domain) x 2(Stigma) x 2(Intervention Order) mixed factorial design. Respondents were randomly assigned to one of two domain (psychoactive substances vs. teenage activity). Within each domain, respondents were assigned one of two behaviors; a highly stigmatized act (heroin use or teenage sex, respectively) and a less stigmatized act (tobacco use or skateboarding, respectively). For each behavior, respondents were asked to assess a prevalence reduction strategy (3 items) and a harm reduction strategy (3 items) in a randomly assigned order.

Dependent measures

Behavior manipulation. There were four different behavioral labels: “the use of heroin,” “cigarette smoking,” “teenage sexual activity,” and “skateboarding.” Respondents were told “Now I would like to ask you about different ways society can deal with risky behaviors. One such risky behavior is {BEHAVIOR}. As you may know, {BEHAVIOR} can produce serious health hazards for those who engage in it, and it imposes many costs on society as a whole.” (For skateboarding, the wording was slightly modified to make it more credible: “...and accidents involving skateboards impose many costs on society as a whole.”)

Prevalence reduction manipulation. Prevalence reduction was described in the abstract, because particular tactics vary in applicability across domains (viz., prevention is possible for any of the behaviors, but arrest and incarceration are only plausible for heroin): “One way {or, if presented second: “Another way...”} to deal with the risks posed by {the use of heroin} {cigarette smoking} {teenage sexual activity} is to do everything we can to try to stop people from engaging in the behavior.”

Harm reduction manipulation. For each behavior, a particular harm reduction intervention was mentioned, chosen to be feasible, easily comprehended, and relevant to contemporary policy debates: “One way {or, if presented second: “Another way...”} to deal with the risks posed by {BEHAVIOR} is to try to make the behavior less dangerous so that there is less risk involved when people engage in it. For example, we can {provide users with clean needles to make injection less risky} {develop less harmful forms of tobacco} {provide free condoms at schools and other gathering places} {build more skateboarding parks equipped with safety equipment}.”

Ratings of prevalence and harm reduction. Three items assessed public support for prevalence reduction: (1) “How much would you favor government efforts to try to stop people from {BEHAVIOR}? Would you say you feel strongly favorable, somewhat favorable, somewhat unfavorable, or strongly unfavorable?” (2) “How effective do you think it is to try to stop people from {BEHAVIOR}? Do you believe it is likely to be highly effective, somewhat effective, somewhat ineffective, or highly ineffective?” And (3) “How morally appropriate would it be for the government to

try to stop people from {BEHAVIOR}? Do you believe it would be highly moral, somewhat moral, somewhat immoral, or highly immoral for the government to do this?" Respondents were asked a similar set of questions about their support for harm reduction: (1) "How much would you favor {INTERVENTION}? Would you say you feel strongly favorable, somewhat favorable, somewhat unfavorable, or strongly unfavorable?" (2) "How effective do you think it is to {INTERVENTION}? Do you believe it is likely to be highly effective, somewhat effective, somewhat ineffective, or highly ineffective?" And (3) "How morally appropriate would it be for the government to {INTERVENTION}? Do you believe it would be highly moral, somewhat moral, somewhat immoral, or highly immoral for the government to do this?" (Note that the terms "prevalence reduction" and "harm reduction" were never actually mentioned.)

Ratings of the risky behavior. After rating the two intervention strategies, respondents were asked six questions about the behavior in question: (1) "How harmful is {BEHAVIOR} to those who engage in it? Would you say it is not at all harmful, somewhat harmful, moderately harmful, or extremely harmful to them?" (2) "How likely is {BEHAVIOR} to create risks for OTHER people who interact with the person or live in the same community? Would you say it is very likely, somewhat likely, somewhat unlikely, or very unlikely?" (3) "How common is {BEHAVIOR} ? Would you say that it is very rare, fairly rare, fairly common, or very common?" (4) "Have you or someone close to you ever engaged in {BEHAVIOR} ? You do not need to tell me whether you have personally done it; just answer "yes" if either you or someone close to you has done it, or "no" if neither you nor anyone close to you has done it." (5) "Do you consider {BEHAVIOR} to be morally acceptable, morally unacceptable, or does it have nothing to do with morality?" (Coded 1, 3, and 2, respectively.) (6) "Would you say that for those who have engaged in {BEHAVIOR} for a long time, it is very easy to stop, somewhat easy to stop, somewhat hard to stop, or very hard to stop?" [This item was not asked for teenage sexual activity or skateboarding.] In later modules, respondents were asked a variety of standard demographic questions.

RESULTS

Ratings of the Policies

Citizens' opinions of the acceptability of PR and HR are presented by condition in the first two panels of Table 1. Opinions varied significantly by experimental condition; for BR, $\chi^2(9) = 256.41$, $p < .001$; for HR, $\chi^2(9) = 93.35$, $p < .001$. Prevalence reduction was viewed favorably by 85% in the heroin condition, 72% for tobacco, 53% for teen sex, but only 23% for skateboarding. Harm reduction was viewed favorably by 50% for heroin (providing clean needles), 65% for tobacco (less harmful forms of tobacco), 64% for teen sex (providing free condoms), and 86% for skateboarding (parks equipped with safety equipment). But even where clear majorities favored a policy, in almost every case the distributions are bimodal, with sizeable factions holding a dissenting opinion.

Four other items assessed the perceived effectiveness and moral appropriateness of PR and HR. The effectiveness and moral appropriateness of each policy were positively associated (for PR, $\gamma = .58$, $p < .001$; for HR, $\gamma = .65$, $p < .001$). Overall, 38% saw PR as effective and moral; 9% saw PR as effective but immoral; 18% saw PR as ineffective but moral; and 35% saw PR as ineffective and immoral. Overall, 56% saw HR as effective and moral; 12% saw HR as effective but immoral; 10% saw HR as ineffective but moral; and 23% saw HR as both ineffective and immoral. Analyses not reported here showed that interaction terms involving a tradeoff between a policy's perceived effectiveness and its perceived morality did not contribute significantly to an explanation of policy preferences.

A principle components factor analysis with varimax rotation was conducted on all six policy evaluation items. Two factors were extracted (accounting for 38.6 and 34.7% of the variance, respectively). The three HR items loaded on the first factor (rotated loadings of .88, .84, and .84) but not the second (-.06, -.02, .02). The three PR items loaded on the second factor (.86, .86, and .84) but not the first (-.14, -.05, and .02). Two composite scales were created by averaging responses to the three PR items (coefficient alpha = .81) and the three HR items (coefficient alpha = .82). These composite scales

had a weak negative correlation (Pearson $r = -.06$, $p < .001$, $n = 1047$), suggesting it is not the case that PR and HR are inherently in tension, at least not for the cases considered here.

A 2 x 2 (Domain x Stigma x Intervention x Order) repeated measures analysis of variance (ANOVA) was conducted on the composite 3-item Support for PR scale and the composite 3-item Support for HR scale. None of the substantive effects were qualified by intervention order, and it is ignored in subsequent analyses. Significant multivariate main effects for domain [$F(1,1037) = 61.59$, $p < .001$], stigma [$F(1,1037) = 8.86$, $p < .004$] and intervention [$F(1,1037) = 54.97$, $p < .001$], were qualified by significant intervention type x domain and intervention x stigma interactions, and a significant 3-way interaction of intervention, domain, and stigma [$F(1,1037) = 10.69$, $p < .001$]. This interaction (shown in Figure 1) was decomposed in two ways. First, paired samples t-tests were conducted separately within each of the four risk domains, using a Bonferroni-adjusted alpha level of .0125. The PR rating significantly differed from the HR rating for heroin [$t(272) = 8.20$, $p < .001$], for teen sex [$t(259) = -4.98$, $p < .001$] and for skateboarding [$t(251) = -20.28$, $p < .001$] but not for tobacco [$t(261) = 1.82$, $p = .07$]. Respondents preferred PR to HR for heroin, HR to PR for teen sex and for skateboarding, and showed no preference in the case of tobacco. Second, Tukey post-hoc contrasts were conducted across the four means for each intervention rating. For PR ratings, all four means were significantly different at the .05 level: Heroin (7.04) > Tobacco (5.87) > Teen sex (4.45) > Skateboarding (2.56). HR ratings were higher for skateboarding (7.19) than for teen sex (5.89), tobacco (5.44), and heroin (5.11); the rating for teen sex was significantly higher than the heroin rating and neither differed from the tobacco rating.

Ratings of the Behaviors

A principle components factor analysis with varimax rotation was conducted on the beliefs about the risky activities. The analysis identified a factor involving morality and harm (harm to self, harm to others, immorality) and a factor involving familiarity (commonality, personal experience with the behavior), but the items are distinct conceptually, and coefficient alphas for the two composites scales (.60 and .24) suggested enough heterogeneity that the items were kept separate in subsequent analyses.

A 2 x 2 (Domain x Stigma) multivariate analysis of variance was conducted on the first 5 items assessing perceptions of the risky behaviors. (“Easy to stop” was analyzed separately because it was only asked for the drug domain.) In the multivariate test, the domain main effect (omnibus $F[5,904] = 114.06$, $p < .001$), the stigma main effect (omnibus $F[5,904] = 76.77$, $p < .001$), and the domain x stigma interaction effect (omnibus $F[5,904] = 38.16$, $p < .001$) were all significant. At the univariate level, the domain main effect was significant ($F[1,908] > 32$, $p < .001$) for all variables. The stigma main effect was significant ($F[1,908] > 13$, $p < .001$) for all variables except the item “Common” ($F < 1$). The domain x stigma interaction was significant ($F[1,908] > 6$, $p < .01$) for all variables except the item “Immoral” ($F < 1$).

The interactions were decomposed using Tukey post-hoc tests ($\alpha = .05$). For the “Harmful to self” item, the ranking was Heroin > Tobacco > Teen sex > Skateboarding. For the “Harmful to others” rating, the ranking was Heroin = Tobacco > Teen sex > Skateboarding; the fact that heroin and tobacco were rated as equally harmful to others may reflect a ceiling effect since the means (3.46, 3.42) were very close to the maximum rating of 4. For perceived commonality of the behavior, the ranking was Teen sex > Skateboarding = Tobacco > Heroin. For own or acquaintance experience with the act, the ranking was Tobacco > Teen sex = Skateboarding > Heroin; heroin was the only behavior falling below 50%. For immorality, the ranking was Heroin > Teen Sex > Tobacco > Skateboarding. For easiness of quitting the behavior (asked only for the drugs), there was no difference for tobacco vs. heroin.

Predictors of Policy Attitudes

A series of hierarchical least-squares regression analyses were conducted to better understand the bases for citizens’ relative preferences for prevalence reduction and harm reduction. Table 2 presents the analyses for the PR ratings, the HR ratings, and for the relative preference for PR over HR (defined as PR – HR). Because the variables have arbitrary scaling metrics, standardized regression coefficients are reported to facilitate comparison of effect sizes. For each dependent measure, there are two equations. In the first equation, the exogenous factors -- respondent demographics and the risky behavior condition -- were entered. The behavior manipulation was represented by three dummy variables, representing heroin, tobacco, and teen sex; skateboarding was the base case (scored 0 on the three dummy variables). In the

second equation, the ratings of the risky activity were entered (excluding “easy to stop” which was only asked for the drug items).

In each case, F-tests indicated a significant improvement in fit for the second (full) model. When a coefficient becomes weaker in the second equation, a plausible interpretation is that the variable’s (“B”) influence on the dependent measure (“C”) is mediated by one or more of the other variables added to the second equation, as in the causal chain “A → B → C”.^[28] For all three dependent measures, the behavior manipulation coefficients are reduced by roughly half when the behavior ratings are added to the model, suggesting that reactions to the particular policies are at least partially due to beliefs about the particular behaviors— in particular, perceived harms and perceived immorality. Because the behavior indices remain significant, and the coefficients for the demographic factors are barely changed, it is clear that ratings of the interventions are also influenced by other attitudes and beliefs not assessed.

Equations 1 and 2 indicate that support for PR is higher among Latinos, those without high school diplomas, and those assessing heroin, tobacco, and teen sex (relative to skateboarding). Support for PR is unrelated to political ideology. It increases with perceived harm to self and harm to others, followed by perceived immorality of the act. Neither perceived commonality of the behavior nor personal exposure to the behavior influenced support for PR.

Equations 3 and 4 indicate that support for HR is strongest among liberals, women, younger respondents, and those who evaluated skateboarding (relative to heroin, tobacco, or teen sex). There is more support for HR among those with personal experience with the activity, but less support when the act is perceived to be morally unacceptable. Support for HR is inversely related to harm to self, but unrelated to harm to others. Harm to self and harm to others were positively correlated ($r[1017] = .42$, $p < .001$), but multicollinearity was not a problem. The zero-order correlation between harm reduction ratings and perceived harm to others was weak ($r[1008] = -.08$, $p < .01$), and the latter had no independent influence on harm reduction ratings even when perceived harm to others and perceived immorality were excluded from the equation.

Equations 5 and 6 summarize the combined results of the previous analyses. Overall, people prefer PR to HR when they are conservative or male; when they considered heroin, tobacco, or teen sex (rather than skateboarding); when the behavior is seen as harmful to the actor and to others; when it is immoral; and when the respondent lacks personal experience with the behavior.

These analyses were repeated separately for the difference score (PR – HR) for each of the four domains patterns (Table 3). For heroin, the preference for PR over HR was greater for conservatives, African Americans, and to the extent that respondents saw heroin use as harmful to the actor and immoral. For tobacco, preference for PR over HR was higher among males, college graduates, and to the extent that respondents saw tobacco is harmful to others. Although citizens saw both heroin and tobacco use as difficult for the user to stop (final row of Table 1), the perception that the act might be involuntary or difficult to control played no role in policy judgments for either addictive substance (final row of Table 3). For teen sex, the preference for PR over HR was higher among conservatives and Protestants, and rose with perceived harm to self and perceived immorality of the behavior. Finally, for skateboarding, support for PR over HR was higher among Latinos and older respondents; it increased with perceived harm to the skateboarder, but decreased with perceived popularity of the sport or personal exposure to skateboarding.

DISCUSSION

Overall, a plurality of California adults endorsed the harm reduction interventions examined here -- the uncontroversial notion of safety-promoting skateboarding parks (86%), but also the more hotly contested notions of providing clean needles for addicts (50%), creating less harmful forms of tobacco (65%), and distributing free condoms for teens (64%). Support for needle exchange was quite similar to that seen in other recent polls, but support for condom distribution was somewhat higher than recent national estimates – perhaps reflecting the California sample or differences in question wording. Citizens preferred PR for heroin (85%) and tobacco (72%), but were divided about discouraging teen sexual behavior (53%), and, not surprisingly, 77% rejected a proposal to discourage skateboarding (23%).

Contrary to widespread assumption, citizens did not view a stark dichotomy or tradeoff between prevalence reduction and harm reduction; ratings of PR and HR had only a weak negative correlation. Still, even where clear majorities favored a policy, in almost case the distributions were bimodal, with sizeable factions holding a dissenting opinion.

Support for PR was higher among Latinos and those without high school diplomas, but unrelated to political ideology. It increased with perceived harm to self, harm to others, and perceived immorality of the act. Neither perceived commonality of the behavior nor personal exposure to the behavior influenced support for PR.

Support for HR was higher among liberals, women, younger respondents, and those with personal experience with the activity. It was inversely related to the perceived immorality of the behavior and harms to the actor, but unrelated to harms to others. From a risk regulation perspective, it may seem surprising that support for harm reduction is reduced when the behavior is seen as more harmful to the actor – even in the case of skateboarding. But citizens may prefer to discourage the behavior when it is sufficiently harmful. Alternatively, those who favor HR may simply see less harm in the behaviors. Because HR focuses most immediately on harms to the actor, one might expect opposition to HR to rise with a perception that the behavior is risky to others. But in fact, harms to others were unrelated to support for HR in the present survey, and only predicted support for PR in the case of tobacco – presumably reflecting the concern over second-hand smoke.

It is clear that citizens' views only partially reflected the consequentialist calculations of a risk-regulatory perspective. Citizens' policy support was only partially explained by the perceived harms to the actor and others. For heroin and teen sex, political conservatism predicted a preference for PR over HR, even controlling for demographics, personal experience, and perceptions of the behavior. And support for PR also increased with the perceived immorality of the act; because this effect is independent of perceived harm, it appears to reflect a deontological, cultural, or emotional response rather than consequentialist moral reasoning.[29]

Some limitations of the present study should be noted. By focusing exclusively on California, the results may not directly generalize to other regions of the U.S. Still, California is the most populous state in the U.S., representing 12% of the nation's population, and its demographic diversity makes it a statistically efficient region for representing a wide range of citizen characteristics.[30] The study is also limited to the particular behavioral domains and harm reduction interventions studied here: needle exchange, safer tobacco, condom distribution for teens, and skateboarding parks. Whether the results generalize to other domains and interventions remains to be established in future research.

Table 1. Mean perceptions of each risky activity.

	Heroin	Tobacco	Teenage sex	Skate- boarding
<i>Ratings of prevalence reduction (%):</i>				
Strongly unfavorable	7.8	19.5	32.1	57.9
Somewhat unfavorable	7.1	8.0	14.7	18.6
Somewhat favorable	22.4	25.7	25.4	11.3
Strongly favorable	62.7	46.7	27.8	12.1
<i>Ratings of harm reduction (%):</i>				
Strongly unfavorable	35.2	24.0	23.9	6.0
Somewhat unfavorable	15.2	11.4	12.5	8.4
Somewhat favorable	21.5	25.6	16.1	34.5
Strongly favorable	28.1	39.0	47.5	51.0
<i>Ratings of the behavior:</i>				
Harmful to self	3.90 _a	3.71 _b	3.12 _c	2.61 _d
Harmful to others	3.46 _a	3.42 _a	2.89 _b	2.46 _c
Common	2.96 _a	3.26 _b	3.58 _c	3.19 _b
You/acquaintances have done it (%)	20.3 _a	88.9 _b	68.5 _c	74.2 _c
Immoral (1=moral, 3=immoral)	2.66 _a	2.21 _b	2.39 _c	1.89 _d
Easy to stop (substances only)*	1.29 _a	1.33 _b	--	--

Note: Except where noted, items scored from 1 (low) to 4 (high). Items that do not share a subscript differ by Tukey post-hoc test (alpha = .05). *Item only asked for risky substance use domain; $t(521) = -3.28, p < .001$.

Table 2. Regression analysis: Predictors of policy responses.

	Preference					
	Support for PR		Support for HR		for PR over HR	
	Eq.1	Eq.2	Eq. 3	Eq. 4	Eq.5	Eq. 6
<i>Demographics:</i>						
Liberalism	-.03	-.00	.25***	.22***	-.18***	-.15***
Female	.04	.00	.05	.06*	-.01	-.04
Black	.06*	.05	.01	.01	.04	.03
Latino	.16***	.12***	.03	.04	.09**	.06
Age	.01	-.01	-.13***	-.12**	.09**	.07*
Parent	.03	.02	.02	.02	.01	.00
Graduated from H.S.	-.12***	-.12***	-.08*	-.07	-.04	-.04
Graduated from college	.00	-.00	-.04	-.03	.03	.02
Protestant	.03	.02	.00	.00	.02	.02
Catholic	-.00	-.01	-.05	-.04	.03	.02
<i>Experimental condition (skateboarding is base case):</i>						
Heroin	.62***	.39***	-.30***	-.12*	.63***	.35**
Tobacco	.47***	.32***	-.23***	-.15***	.48***	.32***
Teenage sex	.27***	.18***	-.22***	-.13***	.33***	.21***
<i>Ratings of the behavior:</i>						
Harmful to self	---	.16***	---	-.15***	---	.21***
Harmful to others	---	.13***	---	.06	---	.04
Common	---	-.02	---	.03	---	-.04
You/acquaintances have done it (%)	---	-.07*	---	.07	---	-.09**
Immoral (%)	---	.07*	---	-.15***	---	.15***
Adj. R-sq.	.34***	.38***	.15***	.18***	.33***	.39***

Note: Entries are standardized regression coefficients. *p<.05, **p<.01, ***p<.001

Table 3. Domain-specific correlates of relative preference for prevalence reduction over harm reduction (i.e., evaluation of prevalence reduction – evaluation of harm reduction)

	Heroin	Tobacco	Teen sex	Skate-boarding
<i>Demographics:</i>				
Liberalism	-.26***	-.07	-.28***	-.07
Female	.04	-.15*	-.09	.06
Black	.20**	.02	-.10	-.00
Latino	-.14	.14	.02	.22**
Age	.06	.14	.10	.18*
Parent	-.08	.02	.02	-.12
Graduated from H.S.	-.18	.05	-.08	-.06
Graduated from college	-.04	.16*	-.04	.03
Protestant	-.09	-.12	.21***	-.02
Catholic	.03	.09	-.04	-.04
<i>Ratings of the behavior:</i>				
Harmful to self	.20**	.05	.26***	.26***
Harmful to others	.02	.31***	-.02	-.06
Common	.05	.06	.03	-.20**
You/acquaintances have done it	-.00	-.09	-.04	-.24***
Immoral	.10	-.05	.24***	.04
Act is easy for actor to quit	-.06	.02	---	---
Adj. R-sq.	.14***	.16***	.40***	.20***

Note: Entries are standardized regression coefficients. *p<.05, **p<.01, ***p<.001

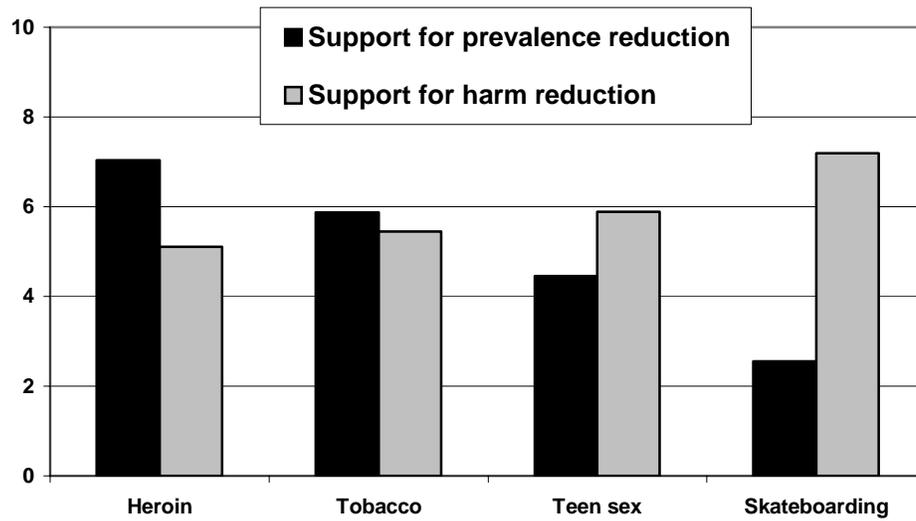


Figure 1. Mean support for prevalence reduction (3-item composite scale) and harm reduction (3-item composite scale) by risky behavior domain. Scales range from 0 (maximum rejection) to 10 (maximum endorsement).

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