

BELIEVABILITY OF ANTI-DRUG ADVERTISING AS A FUNCTION OF MARIJUANA USAGE EXPERIENCE

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Abstract

Marijuana use is on the increase in Australia, particularly among teenagers. Information dissemination is likely to become the main vehicle for minimizing the harms associated with marijuana use, so there is a clear need to develop informative and *convincing* communication strategies to target young (potential and incipient) marijuana users. However, the Federal Government's "zero tolerance" approach to drug use is accompanied by anti-drug messages that may lack credibility with young people who already use, or have used, marijuana. Cognitive dissonance theory, as well as research with warning labels on other products such as cigarettes, suggests that young people who currently use marijuana (current users) will find the information about marijuana *and* the information about other drugs (with which they have no experience) less believable than will young people who have not used marijuana (non-users); and that young people who have tried marijuana but intentionally discontinued usage (trier-rejectors) will find both sets of messages more believable than either current users or never-users. This study finds that, for many of the messages tested, the hypotheses about relative believability are supported.

Introduction

Illicit Drug Use

Marijuana use is increasing in Australia. The proportion of the population aged 14 years and over who had "ever used" marijuana rose from 31% in 1995 to 39% in 1998, with "use in the last 12 months" rising from 13% to 18% over the same period (Australian Institute of Health and Welfare 2000). This increase has been even more noticeable amongst 14-19 years olds, with "ever used" increasing from 35% to 45% and "use in last 12 months" rising from 28% to 35%.

The current legal climate is one of less rigid enforcement of laws relating to marijuana, at least on the "demand side," as well as moves to reduce or eliminate penalties for minor offences. Information dissemination is likely to become the main vehicle for minimizing the harms associated with marijuana use. Thus, the requirement is to develop informative and *convincing* communication strategies to target young (potential and incipient) marijuana users.

However, the Federal Government's "zero tolerance" approach to drug use means that many of the anti-drug messages aimed at young people and their parents in Australia contain messages that may lack credibility with young people who use, or have used, marijuana. The recent "Tough on Drugs" media campaign has been criticized as "based on faulty logic...might win votes, but it won't lessen drug-taking" (Sauerman 2001).

Effects of Drug Education

In the case of drug warnings, young people who have had positive experiences (or, at least, not had negative experiences) may be considerably less likely to believe health warnings than those with no experience of the drug(s). On the other hand, young people who have tried the drug and decided not to continue use may revert to the same level of believability as never-users. The tendency to adapt one's beliefs to be consistent with one's behavior is predicted by cognitive dissonance theory (Festinger 1957). For instance, non-drinkers rate safe-drinking advertisements as more effective than do drinkers (Bozinoff, Roth and May 1989).

Moreover, it is possible that those who find warnings about particular drugs to be lacking in credibility may also tend to disbelieve similar warnings about *other* drugs, even if they have not tried those other drugs. Medical practitioners working in a drug crisis unit stated that "it is commonly held that adolescents, on discovering that some portion of information given by a drug educator is either incorrect or just inconsistent with their experiences, become profoundly skeptical of all information from other 'establishment' sources" (Levy and Brown 1973).

Differences in believability of marijuana warnings should therefore be observed as a function of user status, and these differences may generalize to warnings about other drugs, independent of experience with these drugs.

Hypotheses

H1: Current users of marijuana will rate the messages on negative effects of marijuana as less believable than never-users and ex-users.

H2: Current users of marijuana will rate the messages on negative effects of cocaine and heroin as less believable than never-users and ex-users.

Methodology

The participants in this study were 76 Australian undergraduate university students; mean age 21 years (SD 2.7); with an equal representation of gender.

The messages on consequences of drug use used in the intervention materials for this study were taken verbatim from the American Council for Drug Education's website (<http://www.acde.org>). The only change made was the deletion of the word "crack" from the materials on cocaine, as crack has very low usage incidence in Australia.

For each of the statements about marijuana (15 items), cocaine (12 items) and heroin (14 items), participants were asked to rate the likelihood of each consequence as either (1) "not at all likely," (2) "slightly likely," (3) "quite likely" or (4) "very likely." The instructions emphasized that participants were to respond in terms of *their opinion* of the likelihood. They were also asked about their previous and current use of marijuana, and ever-use of cocaine and heroin.

Results

Marijuana and other drug usage status

Of the total sample, 12% described themselves as current users, 25% as ex-users, and the

remainder as never-users of marijuana. Of the 76 participants, eight reported ever using cocaine and two ever using heroin.

Believability of marijuana messages

Overall, the messages appeared to be quite credible to the students. As shown in Table 1, the mean rating for nine of the 15 marijuana items was “quite” to “very” likely; and none of the items were rated as “unlikely.” A composite measure (the mean rating across the 15 items) showed that the marijuana messages overall were rated “quite likely.”

H1 predicted that current users would rate the messages about marijuana as less believable either of the other two groups, and this hypothesis was supported by the composite-score mean believability ratings (current = 2.5, never = 3.1, ex = 3.2, $F = 7.13$, $p = .001$). Further, a Tukey test showed that the second two means did not differ and that overall significance was due to lower believability ratings among the current users.

The current users rated 13 of the 15 messages as less believable than did either of the other two groups; and the ex-users rated 13 of the messages as more believable than did users and never-users. As shown in Table 1, six of these differences were statistically significant.

Table 1: Believability of marijuana messages by user status

	Never N = 48	Ex N = 19	Current N = 9	Total N = 76	F
IMMEDIATE EFFECTS					
Increased heart rate	3.0	3.2	2.6	3.0	1.69
Anxiety, paranoia	2.9	3.3	2.8	3.0	2.25
Hallucinations	3.1	2.9	2.4	3.0	2.55
Impaired perception	3.2	3.4	3.0	3.2	1.46
Loss of concentration/coordination	3.4 ^a	3.6 ^b	2.7 ^{a,b}	3.4	7.66***
Impaired judgment	3.4 ^a	3.5 ^b	2.7 ^{a,b}	3.3	5.17**
Increased risk of accidents	3.5 ^a	3.0	2.4 ^a	3.3	7.40***
Diminished inhibitions	3.0	3.1	2.6	3.0	1.89
DELAYED EFFECTS					
Loss of motivation	3.0 ^a	3.6 ^a	3.2	3.2	3.77*
Diminished short term memory	3.2	3.6	3.0	3.3	2.78
Increased risk of AIDS/STD	2.5 ^a	2.3 ^b	1.2 ^{a,b}	2.3	6.28**
Damage to body systems	3.2	3.4	2.7	3.2	2.68
Increased risk of cancer	2.8	3.1 ^a	2.1 ^a	2.8	3.40*
Psychological dependency	2.9	3.0	2.3	2.9	2.79
Dependence & addiction	3.5	3.6	3.1	3.5	2.06
COMPOSITE SCORE	3.1 ^a	3.2 ^b	2.5 ^{a,b}	3.0	7.13***

Notes to Table 1:

1. Across rows, means which have the same superscript letter are different at $p < .05$.
2. Significance levels for the F statistics are: * $< .05$; ** $< .01$; *** $< .005$.

Believability of cocaine and heroin messages

The warning messages about cocaine and heroin appeared to be quite credible to the students (see Table 2). The composite mean rating for the cocaine items was 3.0 (quite believable), with mean ratings for seven of the 11 items between “quite” and “very” believable and the remaining four just below “quite” believable. The composite mean rating for the heroin items was 3.2 (just above quite believable), with mean ratings for 11 of the 14 items between “quite” and “very” believable and none below “slightly” believable.

Table 2: Believability of cocaine and heroin messages (by *marijuana* usage status)

	Never N = 48	Ex N = 19	Current N = 9	Total N = 76	F
COCAINE					
Neurological incidents	3.1 ^a	3.0	2.4 ^a	3.0	3.20*
Inc. risk of traumatic injury	3.5	3.0	3.1	3.4	3.29*
Sexual dysfunction	2.6 ^a	2.9 ^b	1.8 ^{a,b}	2.6	4.76*
Promiscuous sexual activity	3.0	3.2 ^a	2.3 ^a	3.0	3.39*
Inc. risk of hepatitis, HIV etc	3.2	3.5	3.2	3.2	1.73
Cardiovascular problems	3.4	3.4	2.9	3.3	2.20
Pulmonary effects	3.0	2.9	2.3	2.9	2.57
Psychiatric complications	3.3	3.5	3.1	3.3	0.96
Sleeplessness	2.7	2.9	2.9	2.8	0.30
Diminished sense of smell	2.9	3.0	2.6	2.9	1.21
Nausea and headaches	3.0	3.1	2.6	3.0	1.28
Foetal cocaine effects	3.4	3.5	3.2	3.4	0.54
COMPOSITE SCORE	3.1	3.1	2.7	3.1	2.78
HEROIN					
Itchy skin, skin infections	2.2 ^a	2.9 ^a	2.2	2.4	3.63*
Constricted pupils, red. night vision	2.6 ^a	3.2 ^a	2.6	2.7	3.18*
Nausea and vomiting	3.0 ^a	3.5 ^a	3.1	3.1	3.50*
Constipation, loss of appetite	2.8 ^a	3.4 ^a	2.9	3.0	3.99*
Scarring, collapsed veins	3.2 ^{a,b}	3.7 ^a	3.9 ^b	3.4	5.38**
Menstrual irregularity	3.0	3.1	2.7	3.0	0.96
Reduced sex drive	2.7	3.1	2.7	2.8	1.54
Irregular blood pressure	3.2	3.6	3.2	3.3	2.92
Slow, irregular heartbeat	3.3	3.4	3.1	3.3	0.54
Fatigue, breathlessness	3.1	3.3	3.1	3.15	0.54
Injuries from activity	3.3	3.6	3.0	3.3	2.14
Dependence and addiction	3.6	3.8	3.7	3.7	1.11
Hepatitis, AIDS, STDs	3.4	3.6	3.7	3.5	0.53
Stroke or heart attack	3.3	3.4	3.1	3.3	0.50
Respiratory paralysis	3.6	3.6	3.0	3.5	2.70
COMPOSITE SCORE	3.1	3.4	3.1	3.2	3.02

Notes to Table 2:

1. Across rows, means which have the same superscript letter are different at $p < .05$.
2. Significance levels for the F statistics are: * $< .05$; ** $< .01$; *** $< .005$.

H2 predicted that current users of marijuana would rate the messages about cocaine and heroin as less believable either of the other two groups. This hypothesis was directionally supported by the composite score mean believability ratings for cocaine (current = 2.7, never = 3.1, ex = 3.1, $F = 2.78$, $p = .07$). However, for heroin, the current users did not show a reliable tendency to rate the messages less believable than the non-users (current = 3.1, never = 3.1, ex = 3.4, $F = 3.02$, $p = .06$). This appears to be due to never-users not rating warnings about heroin, unlike warnings about cannabis and cocaine, as believable as did ex-users (of marijuana).

The current marijuana users rated nine of the 12 cocaine items as less believable than did the other two groups, and the marijuana ex-users rated nine items more believable than the current and non-users. Significant differences were found for cocaine for five of these items.

The ex-users of marijuana rated 13 of the 15 messages about heroin as more believable than did the other two groups. However, unlike marijuana and cocaine, the current users of marijuana were most like the non-users in their evaluations of the believability of the heroin messages. Significant differences were found for heroin for five of the items.

Discussion and Recommendations

The results support the hypothesis that experience with marijuana is associated with reduced believability of anti-marijuana messages; and more specifically that ex-users of marijuana are more likely to believe messages about the negative effects of marijuana that are current users or never-users. Of the 15 messages about marijuana, 13 were rated least believable by current users and most believable by ex-users. The cross-sectional nature of the study means that we are not able to infer causation; that is, do the current users use marijuana because they believe it is not harmful, or do they believe it is not harmful because they use it? The ex-users' high believability suggests the former explanation, but we cannot be sure in the absence of a longitudinal study.

Interestingly, the three effects of cannabis rated as relatively more believable by ex-users were anxiety and paranoia, impaired concentration, and lack of motivation, although, with the small sample sizes of the groups, only the last was statistically significant. These particular effects may have been experienced by some triers of cannabis and influenced their decision to discontinue use.

Further, the results support the hypothesis that experience with one drug is associated with different perceptions of the likelihood of negative consequences of other drugs. The ex-users of marijuana found the messages about the negative consequences of cocaine and heroin use more believable than did either of the other two groups, suggesting that negative attitudes to marijuana associated with previous use may have a protective effect for other drugs. The 'halo effect' for current users seemed only to extend to cocaine, which was seen as less harmful by the current marijuana users, but not to heroin.

The survey was conducted only with university students. It did not include blue-collar young adults, or adolescents. Also, the sample was quite small ($N=76$, including just 28 cannabis users). The suggestive nature of the findings makes extension of the study to a younger and a more educationally diverse sample an obvious recommendation. Should the present findings of

relative disbelief of drug messages by current cannabis users be widely observed, another approach to dissuasion would need to be investigated. It is possible that the current strong warnings, however, are an effective deterrent to non-users.

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