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► [The effect of marijuana scenes in anti-marijuana public service announcements on adolescents' evaluation of ad effectiveness.](#)

Kang Y., Cappella J.N., Fishbein M. [Request reprint](#)

Health Communication: 2009, 24(6), p. 483–493.

The most effective anti-drug ads for teenagers show the targeted drug and mount strong arguments against its use. Sounds plausible, but this US study found that when it comes to cannabis and the youngsters most likely to use it, the reverse was the case.

Abstract Anti-drug advertisements directed at teenagers often show the drugs or show them being used. Typically the aim is to capture attention and convey the unattractiveness, squalor or stupidity of drug misuse, messages which common sense dictates should deter use. But might this also suggest to viewers that use is normal and widespread, seemingly endorse their past use among youngsters who have tried the drug, distract attention from the ad's anti-use arguments, and whet the appetite of susceptible youngsters? Another common sense assumption is that the stronger the ad's arguments against using the drug, the greater its deterrent effects. The risk however is that youngsters most likely to use may be prompted to mount counter-arguments or reject or distort such messages, because they conflict with their positive opinions and perhaps also experiences of the drug. In respect of cannabis, these were the propositions tested by the featured study in the wake of [studies](#) of the US National Youth Anti-Drug Media Campaign which found either no impact on cannabis use among teenagers or indications of increased use.

For the featured study, 60 anti-cannabis or generally anti-drug ads featured in US national and state campaigns were shown to 601 12–18-year-olds (the age band targeted by the ads) recruited in shopping centres. The young viewers rated each ad on the degree to which it was convincing and would deter cannabis use ('perceived effectiveness') and how much they liked it, and listed a few thoughts it had prompted. Researchers classified these thoughts as negative or positive and calculated the net balance of positive thoughts. These three types of measures are commonly used as

proxies for the effectiveness of an ad, and in this study they were highly correlated.

At issue was how these assessments would vary with the strength of the anti-cannabis argument put forward in an ad, and secondly, whether the assessments would be affected by the presence versus absence of cannabis/cannabis use scenes. **Argument strength** had been assessed by a different set of 322 youngsters recruited in a similar way to the first set. They rated not the ad itself, but its key overall anti-cannabis argument as identified by experts based both on what the ad said, and what it portrayed. On this basis, ads were divided into top and bottom halves in terms of the strength of their arguments. Research staff also identified ads with scenes which showed the drug, the drug being handled, or it actually being smoking.

The study assessed not only how all 601 young viewers reacted to the ads, but also how this varied between youngsters in the top or bottom half of the sample in their **susceptibility** to cannabis use. This division proved decisive. On every measure, youngsters who seemed relatively immune to cannabis use reacted better to the ads than the other half of the sample, but their reactions were not affected by the strength of an ad's argument, nor whether it featured images of cannabis or its use. In contrast, youngsters who were relatively susceptible to cannabis significantly preferred ads without images of the drug; they liked them better, and they evoked more net positive thoughts than ads which did show cannabis. In respect of the **net balance of positive thoughts** evoked by the ad, these high-risk youngsters also responded badly to ads with relatively strong anti-cannabis arguments. It meant that a convincing argument was no defence against the counterproductive impact of images of the drug.

The net result across the whole sample of 601 youngsters was that ads with cannabis scenes tended to be reacted to less positively. This was entirely due to the 15 ads which actually showed cannabis being smoked. On all three measures which the study used as proxies for effectiveness, these fell significantly behind ads which did not show the drug at all. The impact of cannabis scenes on the youngsters was not due to these ads making them feel more or less fearful, sad or sympathetic than other ads. Instead they made them feel less inspired than ads without cannabis images, and among the high-risk half of the sample, in turn this seemed to lead the ads to be rated less positively.

The analysts concluded that their most consistent findings related to the presence of scenes showing cannabis or its use. Youngsters unlikely in any event to use the drug reacted well to anti-cannabis ads regardless, but those the ads most needed to deter – the ones most likely to use the drug – saw the ads overall as less effective, and especially those which featured the drug or its use. Neither were they swayed by what young people in general saw as stronger anti-cannabis arguments; on one important measure, they actually reacted more negatively to strong-argument ads. The lesser relevance of argument strength may have been due to the fact that in respect of cannabis deterrence, youngsters saw *all* the arguments as only moderately convincing. These findings caution against featuring images of cannabis or its use in anti-drug campaigns.

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The study could not say whether cannabis scenes promoted responses conducive to using the drug, only that ads featuring these are responded to in ways which suggest they will be less effective than ads without such scenes, and that this is particularly the case for youngsters most likely to use cannabis. Similarly with how these

youngsters responded to strong arguments. The main question over the study is whether its indirect indicators of the impact of the ads really did reflect a corresponding impact on the viewer's intentions to use cannabis and what later they would actually do; details below in small text. If we accept that there was such a relationship, then these findings supplement a literature demonstrating that ads which their creators and most adults would think deterrent may be the least effective or even have the reverse impact on young people. Together these studies suggest that among young people most likely to use or have used cannabis, focusing on harmful consequences is a difficult strategy to carry off in respect of a drug where clear-cut examples are hard to find, and perhaps when their own experiences and those of their friends and others seem to contradict the ads' assertions, prompting negative reactions.

It might be argued that on the seemingly crucial measure – 'perceived effectiveness' – high-risk youngsters did not react badly to cannabis-scene ads. However, the questions on which this measure was based did not ask whether the ads would stop the viewer using cannabis, only (among other questions) whether it would stop their friends. The more subtle measures which inferred effectiveness from the thoughts the ad evoked, and whether it was liked, might be a better guide to how the viewer themselves would react. Supporting this possibility, [in Philadelphia](#) school pupils were randomly allocated to view one of four versions of a TV programme. One included a 'gateway' sequence of five ads intended to convey how use of one drug can lead to another. The control condition was the TV programme without the ads. Among the ads were three which young viewers in an [earlier study](#) had rated highly on a measure of effectiveness like that used in the featured study. It included the viewer's assessment of whether the ads would deter other young people. But when instead the Philadelphia pupils were asked about their *own* intentions and opinions, this same ads (and others) left them feeling **more positive** about cannabis and more likely to use the drug than a programme without any ads at all.

As in the featured study, it was the children most likely to use cannabis who reacted badly. Children unlikely to use cannabis anyhow were unmoved by the gateway sequence, while those most likely to use tended to "move towards disbelieving that regular marijuana use has negative consequences". The researchers conjectured that these children rejected the gateway depiction because it was contradicted by their own experiences, a speculation strengthened by the fact that these youngsters were indeed the ones most sceptical about cannabis leading to harder drugs. The upshot was that, as in the featured study, children who had little room to become more anti-cannabis were unaffected, while those with a more pro-cannabis profile were moved in the wrong direction.

These studies indicate that the measures used in the featured study might bear a tenuous or unexpected relationship to the impact of an ad on the viewer's intentions to use cannabis and perhaps also what later they actually do. Whilst in general marketing research they may be considered valuable indicators, ads trying to stop young people consuming a commodity proscribed by law are very different to ads promoting a legal commodity, and so too may be the indicators of effectiveness. Also the results of the featured study may be particular to the ads' target – cannabis or drugs in general. In [one of the studies](#) cited above, these were the ads judged least convincing and effective in deterring other young people. Across all the ads including those targeting 'hard' drugs, ads which evoked negative emotional thoughts were judged most effective, the reverse relationship to that found for cannabis and general anti-drug ads in the featured study.

The featured study is described as a secondary analysis of data collected by another study, and one of the findings – the particular impact of scenes showing cannabis being smoked – was not among the hypotheses it intended to test. It is unclear whether the remaining hypotheses and the methods of testing them were specified in advance without knowing whether the data might support them, and whether these were the only hypotheses tested and methods used. This is important, because otherwise researchers can capitalise on the probability that if they try enough permutations, one of the many hypotheses the data might be used to test and one of the many ways of testing them will produce what seem statistically significant findings. For example,

an [earlier study](#) from the same research centre had used a similar methodology to categorise children in to those most and least likely to use cannabis. However, it had not divided them down the middle as the featured study did, but selected the top quarter as the likely-to-use category. Moving the dividing line until the data reveals what looks like a significant pattern is one way to capitalise on what may be chance variations. As the authors acknowledged, the finding in respect of argument strength is particularly weak because the reverse relationship with presumed ad effectiveness was found on only one of three measures. But what seems clear is that at the least, stronger arguments did not provoke the expected reactions from the viewers and *may* have done the reverse. Set against all these caveats is the fact the hypotheses the study set out to test 'made sense' both in terms of theory and prior research; they had not just been plucked out of the air to suit the data. The fact that the findings are plausible and in line with other research makes them more convincing.

Importantly the study statistically adjusted for two features of the ads which might have led to spurious findings. One was the degree to which the presentation of an ad was attention-grabbing (potentially distracting from the argument), clearing the way for the assumed attention-grabbing impact of cannabis images to be analysed without being confused with these other features. The other was the type of argument used to deter cannabis use, clearing the way for the impact of the strength of the argument to be observed, regardless of its content.

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