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Unintended Messages in Online Advertising to Youth: Illicit Drug Imagery in a Canadian Sports Marketing Campaign

Nathalie Auger, M.D., M.Sc. [a,b,*], Mark Daniel, Ph.D. [c,d], Bärbel Knäuper, Ph.D. [e], Tara Dourian [b], and Marie-France Raynault, M.D., M.Sc. [b,f]

[a] *Analyse de la santé et des inégalités sociales et territoriales, Institut national de santé publique du Québec, Montreal, Québec, Canada*
[b] *Axe Risques à la santé, University of Montreal Hospital Research Centre, Montreal, Québec, Canada*
[c] *School of Population Health, University of South Australia, Adelaide, South Australia, Australia*
[d] *South Australian Health and Medical Research Institute, Adelaide, South Australia, Australia*
[e] *Department of Psychology, McGill University, Montreal, Québec, Canada*
[f] *Montreal Public Health Department, Montreal, Québec, Canada*

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A B S T R A C T

Purpose: We assessed the potential for harmful messages in online advertisements targeted to youth, using the example of the Canadian "Light It Up" marketing campaign from a large sports corporation.
Methods: We undertook a cluster randomized controlled trial of 20 secondary school classes in Montreal, Canada. Classes were randomly allocated to view a "Light It Up" advertisement (n = 205) or a neutral comparison advertisement (n = 192). The main outcome measures were self-reports of illicit drug messages in the advertisements.
Results: Of the students, 22.9% reported that the "Light It Up" advertisement contained illicit drug messages compared with 1.0% for the comparison advertisement (relative risk, 22.0; 95% confidence interval, 6.5–74.9).
Conclusions: Although meant to promote sports, youth in this study believed that the "Light It Up" advertisement was related to illicit drugs. The campaign illustrates how advertisements may inadvertently market unwanted behaviors to children.

IMPLICATIONS AND CONTRIBUTION

Companies increasingly market to children and youth, but unintentional impacts of marketing on the Web are rarely evaluated. In this randomized trial of an online sports marketing campaign, youth unexpectedly reported that "Light It Up" advertisements promoted illicit drugs. Marketing to youth online requires attention of researchers and health authorities.

Advertising on the Internet is a large industry. Corporations use the Internet to market their services and products to a wide range of people, including children and youth. Young people in particular spend more time online than adults [1], easily adopt Internet-based technology, and may be more vulnerable to online advertising [2]. This has contributed to research on the role of the Internet in promoting tobacco [2], alcohol [3,4], and food consumption [5]. Although the extent of influence that Internet advertising has on children remains to be determined, it is well established that advertising through traditional media has a large impact on the behaviors of children and youth [5–8]. There is every reason to suspect that the Internet has a similar effect.

Very little research has focused on inadvertent effects of online marketing to youth. Corporate advertisements are developed to sell a product or service, typically with little effort to assess adverse consequences of the messages being conveyed [9]. Large companies have extensive budgets to develop marketing campaigns that reach their target population, often with little regard for health impacts on the consumer. Furthermore, laws to regulate

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* Address correspondence to: Nathalie Auger, M.D., M.Sc., Institut national de santé publique du Québec, 190, boul. Crémazie Est, Montréal, Québec H2P 1E2, Canada.
E-mail address: nathalie.auger@inspq.qc.ca (N. Auger).

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marketing are poorly adapted to the Internet's growing role in marketing to children [2]. These factors together create conditions that can facilitate harmful advertising to children online, even by companies that market safe or desirable products. The objective of this study was to illustrate the potential for unexpected negative effects of online advertising to young people, using the example of a large sports corporation that marketed hockey products to children and youth on the Web in Canada from 2003 to 2004. We analyze secondary data from a previous randomized trial that assessed how youth perceived the campaign [10].

Methods

Study design

We invited two high schools located in metropolitan Montreal, Canada, to participate in a cluster randomized trial. The trial tested advertisements used by the Nike multinational sports corporation in an online hockey marketing campaign called "Light It Up" targeting children and youth in Canada in 2003–2004 [11,12]. The company recruited children and youth at skating rinks, where they provided passwords to the Web site, and invited participants to an online contest that involved viewing "Light It Up" advertisements from home. The campaign elicited concern from public health authorities because of the ambiguous messages and smoke-like appearance of the online advertisements that may inadvertently have promoted smoking [10]. A cluster randomized control trial was therefore designed to determine whether children and youth perceived smoking messages in "Light It Up" advertisements [10]. Data on students' perceptions were collected using open-ended questions that made no mention of tobacco, and results showed that students did indeed perceive smoking messages in a "Light It Up" advertisement compared with a neutral version of the same advertisement containing fewer tobacco-related messages [10]. Post hoc, it appeared that students perceived the advertisements also contained illicit drug messages, an unexpected finding that is the object of the present article.

In the original trial, we randomly allocated 20 classes containing 397 students from grades 7 to 11 to view an exposure advertisement or a neutral comparison advertisement. We downloaded the exposure advertisement from the company's Web site. We selected a typical "Light It Up" advertisement featuring a hockey net, available for youth to download to their computer as wallpaper (Figure 1). To create a neutral comparison advertisement, we changed the "Light It Up" slogan to "Go For It" and digitally modified the color content to attenuate the potentially smoky appearance. The brand name was removed from both the exposure and comparison advertisements. Students responded to an in-class paper-and-pencil questionnaire containing open-ended questions on their perception of the content, appearance, and messages in the advertisements. The detailed study questionnaire is available elsewhere [10]. Additional examples of "Light It Up" advertisements (not evaluated in our study) are available online [11,12] and from the authors on request. This study was approved by the Institutional Review Board of the University of Montreal Hospital Centre. Students and parents provided signed voluntary consent.

Procedures and statistical analysis

For the present analyses, a research assistant extracted responses related to illicit drugs from the questionnaires. There was 96% agreement with a second assistant who extracted messages

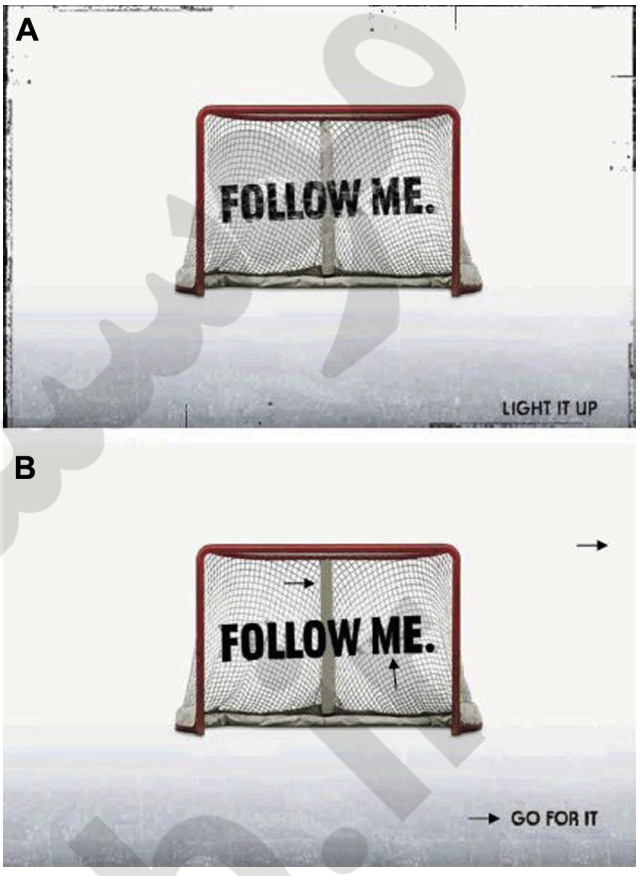

Figure 1. Exposure and comparison advertisements. Images of the advertisements shown to students. (A) Exposure advertisement. (B) Neutral (control) advertisement. Arrows point to digitally modified areas: (1) central pole was colored gray using a shade from the lower part of the pole; (2) FOLLOW ME was blackened; (3) rectangular marks on outmost edges were removed; and (4) LIGHT IT UP was replaced by GO FOR IT. Copyright of the original image: NIKE, Inc. Reproduced with permission from Auger et al. [10].

from a random 10% subsample of questionnaires. Students with any written statement directly referring to illicit drugs were scored as positive responses. We defined three main outcomes, including any report that the advertisement (1) slogan referred to illicit drug use; (2) contained images of illicit drugs; and (3) was promoting drugs. These three outcomes were not mutually exclusive. We therefore included a final outcome category for any report of illicit drug messages (yes vs. no illicit drug content). We calculated the relative risk (RR) and 95% confidence interval (CI) for reports of illicit drug content for the exposure versus comparison advertisements using generalized estimating equations for binary outcomes, accounting for classroom-level clustering. Statistical models were adjusted for sex, grade, smoking status, and parental education [10]. Analyses were undertaken using SAS 9.1 software (SAS Institute Inc., Cary, NC).

Results

Students shown the "Light It Up" advertisement were more likely to report that the slogan referred to drugs compared with the "Go For It" comparison (8.3% vs. 1.6%; RR, 5.3; 95% CI, 1.8–15.9; Table 1). Students reported that the "Light It Up"

advertisement contained images of drug-related products (22.9% vs. 1.0%; RR, 22.0; 95% CI, 6.5–74.9) and that drugs were the product being promoted (12.2% vs. 5.2%; RR, 2.3; 95% CI, 1.1–5.1). Overall, 26.8% of students reported that the exposure advertisement contained drug messages of any type, compared with 7.3% of students shown the comparison advertisement (RR, 4.0; 95% CI, 2.4–6.4).

Students were explicit in their reports of illicit drug content in the exposure advertisement (Table 2). For example, one student stated that the advertisement looked "like a marijuana joint." When questioned on what product the advertisement was promoting, a second student reported "Maybe cigarettes since you're not allowed promoting drugs." Concerning the general impression of the advertisement, another student stated "I interpret it as smoke up, start taking pot, weed, etc." These statements together imply that students interpreted the "Light It Up" ad as related to illicit drugs.

Discussion

Inadvertent promotion of unwanted behaviors in online advertising has received little attention from researchers. This post hoc analysis of a randomized trial, which originally aimed to assess whether students perceived tobacco messages in an online "Light It Up" sports advertisement, unexpectedly found that students perceived messages promoting illicit drugs. These findings merit close attention considering that adolescents are particularly vulnerable to marketing [2,13] and that high proportions of adolescents report using illicit drugs [8]. Internet marketing is a relatively new phenomenon, and there is evidence that Internet use is rapidly surpassing traditional media among adolescents [1]. Although the "Light It Up" advertisement clearly was not meant to promote illicit drugs to children and youth, the advertisement nonetheless was perceived as such by high school students in our study. These findings are a first step toward encouraging research on the inadvertent promotion of risky behaviors in corporate marketing advertisements.

Research to date in this area has focused on the contradictory messages of health-promoting campaigns compared with corporate marketing. Researchers have, for instance, assessed how college students perceived antidrinking advertisements from public service announcements compared with prodrinking advertisements from the alcohol industry [3]. Such studies are, however, meant to help develop more effective public health messages, rather than to evaluate whether corporate advertisements themselves send conflicting messages, or to assess the role of the Internet in transmitting such messages. Furthermore, illicit drug promotion to adolescents is rarely addressed in research, relative to tobacco, alcohol, and food advertising [4–7]. The only studies thus far that considered illicit drug messages in media evaluated how popular music promoted consumption [8] and portrayals of teens doing drugs in movies [13,14]. Advertising of prescription drugs to adolescents on the Internet and in traditional media has elicited attention [13,15,16], but the role of the Internet in illicit drug promotion has yet to be broached.

Internet marketing to children is challenging to study. Web sites change and are taken down constantly [2], are not always easy to navigate, and the language used may appear benign to adults, yet have hidden meanings to youth. The "Light It Up" Internet campaign is a good example. The Web site was up for just over a year, and only remnants were left behind in online posts by unrelated companies [10–12]. The Web site itself was an intricate multimedia presentation that users navigated to ultimately enter password-protected areas containing hidden content. Only children or youth with a password obtained at a sponsored event were able to see these parts of the Web site (the investigators were denied access). Moreover, the investigators never suspected that the language used in the advertisements could have been interpreted as drug related, despite questionnaire pretesting and consultation with multiple colleagues during preparation for the study. Presumably, "Light It Up" was meant to encourage skaters to make a goal and light the scoreboard. The dual meaning of "Light It Up" combined with smoky appearing images and no clear product being promoted led us to

Table 1
Relative risks for reporting illicit drug messages in the "Light It Up" and comparison advertisements

Outcome	Exposure advertisement (N = 205), n (%)	Comparison advertisement (N = 192), n (%)	Relative risk (95% confidence interval)	*p* value
Students reported that the				
Slogan refers to illicit drugs	17 (8.3)	3 (1.6)	5.3 (1.8–15.9)	.0045
Advertisement contains images of illicit drug products	47 (22.9)	2 (1.0)	22.0 (6.5–74.9)	.0009
Advertisement is promoting illicit drugs	25 (12.2)	10 (5.2)	2.3 (1.1–5.1)	.038
Any report of illicit drugs	55 (26.8)	14 (7.3)	4.0 (2.4–6.4)	<.0001

Table 2
Sample statements from students shown the "Light It Up"' advertisement[a]

Quote	Grade
Impression of advertisement	
"This ad makes me think about cigarettes and drugs."	9
"I interpret it as smoke up, start taking pot, weed, etc."	7
"Light up cigars or marijuana."	9
"It can either mean to light up a cigarette or drug and then you'll become successful or it can mean give the game all you got."	10
"Seems drug related. Like lighting up a joint or cigarette."	11
"I think it says what to do. For example, when someone decides to do drugs, someone else would think that they should do it too."	9
"Like if it were a drug dealer or a person that is selling you something."	9
Appearance of centre pole	
"It looks like a cigarette or weed or some sort of drug."	8
"The two upper posts look like a pair of lips with the center post (joint) inside the mouth."	9
"It looks like a marijuana joint."	10
"The center pole really looks like a cigarette or drugs."	11
Product being promoted/type of company	
"Maybe cigarettes since you're not allowed promoting drugs."	7
"It might be promoting weed, marijuana, and all sorts of other drugs."	8
"Influencing to use marijuana (in a secret manner)."	9
"A cigarette company, a drug company."	8
"Blunt[b] smokers."	9

[a] Exact quotes from students allocated to the exposure advertisement. No student appears more than once.
[b] "Blunt" refers to marijuana wrapped in cigar paper.

suspect an association with tobacco, but the link with illicit drugs was not anticipated and discovered only on review of students' open-ended comments. With barriers such as these, it can be difficult to even suspect a problem, especially for researchers specialized in pediatrics, public health, or related fields faced with evaluating advertisements designed by top marketers in the world.

Study limitations for this type of research can also be daunting. The present study for instance was limited by a nonrealistic classroom setting, use of a paper-and-pencil rather than online questionnaire, and removal of the brand name. We do not know how students would have perceived the advertisement had they known which company was responsible or seen the advertisements in the original online format. We suspect that the original "Light It Up" Web site would not have elicited as many drug-related comments from students, but we cannot be certain. Another issue is that we tested a single advertisement, whereas the Web site contained many advertisements which visitors to the site were encouraged to view repeatedly during an online contest. We conducted this study in Quebec and do not know how students would have reacted in other Canadian provinces where hockey is popular. Finally, identifying the appropriate age group for study was difficult, as the "Light It Up" campaign appeared to target children and youth across a range of ages. We ultimately did not know the age of children and youth who used the "Light It Up" Web site. We recruited high school students, a group not representative of younger children, many of whom were seen in photos on the Web site. These limitations, although specific to our study, may also complicate future research on online advertising to children and youth.

Recommendations to circumvent negative impacts of online advertising to children and youth also need development. Regulation of advertising online to this age group is complex, and arguably requires international collaboration since Web sites can be accessed from any location. Some countries have guidelines for marketing to children; however, these poorly apply to the Internet, and the issue of inadvertent promotion remains a gray zone. The American Academy of Pediatrics for instance recommends not showing risky advertisements during times when children watch television or during shows that attract young people [13]. However, this recommendation is difficult to apply to the Internet or to ads where the potential for harm is not evident. Companies could potentially assess the safety of their own marketing campaigns but with questionable effectiveness. The best marketers in the world designed and presumably evaluated "Light It Up."

In summary, youth who participated in this randomized trial reported that a "Light It Up" advertisement from a popular sports company contained illicit drug messages. Although this study had limitations, the findings nonetheless merit attention. Young children are easily influenced by their social surroundings, including media and the Internet. Large companies increasingly market products using messages that are unclear and potentially risky and can spread these messages online very effectively. We hope the findings of this study will incite more research on the potential for harm in advertising to children and youth and pave the way for more evaluation and regulation of online marketing.

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