The Medical Marijuana Industry and the Use of "Research as Marketing"

Marijuana and marijuana-based medical products are now legally sold in 33 US states and most European Union countries. Widespread medical marijuana legalization has ushered in an unprecedented level of investment in marijuana, replacing small, independently owned storefronts with polished national and international corporations.[1] As the industry has become more sophisticated, so has its marketing; a recent commentary[1] I coauthored in the *Journal of the American Medical Association* surveys Big Marijuana's marketing strategy and summarizes how Big Marijuana companies convey poorly substantiated health claims to potential consumers.

This editorial is intended to highlight one particularly pernicious marketing technique commonly employed by Big Marijuana companies—a technique I call "research as marketing." Essentially, marketers realize that social media sites and the 24-hour news cycle effectively deliver health information to consumers and that consumers are less-discerning auditors of scientific rigor than are federal regulators. Therefore, rather than invest in the multitude of expensive, large-scale clinical trials required to make regulator-endorsed health claims, marijuana companies sponsor and publicize the results of less-robust studies.

Using weak research in their marketing, marijuana companies may mislead consumers into conflating, for example, the value of evidence from a series of highly rigorous Food and Drug Administration (FDA) prescription drug trials with that from a correlational or ecological study. For example, in a post with the headline "The Role of Medical Cannabis in Managing Symptoms of PTSD [posttraumatic stress disorder]," multibillion dollar marijuana company Aphria cites a 25-participant imaging study to state "cannabinoid research suggests a link between endocannabinoid deficiencies and maladaptive brain changes after trauma exposures."[2] Through authoritative-looking citations and biomedical jargon, consumers can be misled into believing that these relationships between marijuana use and health benefits are established scientific fact rather than budding theories. In addition to threatening the safety and autonomy of medical consumers, research as marketing has the potential to diminish the value of rigorous scientific research and undermine consumers' faith in medical sciences.

HEALTH CLAIMS BY ANY OTHER NAME

A major tenet of modern medical regulation is that health claims must be rigorously substantiated before they are disseminated to consumers. Rigorous standards set by regulatory agencies ensure that consumers make health decisions based upon only highly rigorous studies and protect them from being misled by less-robust evidence. However, research as marketing has enabled major marijuana companies to circumvent these regulations. By writing provocative articles on small-scale medical marijuana studies and disseminating them through online blogs, news sites, and social media sites, marketers convey health claims to consumers.

For example, Aurora, one of the world's largest marijuana companies, published a blog post citing an industry-funded, cross-sectional survey study to state "Medical cannabis patients report using CBD [cannabidiol] for a plethora of reasons, including to help with the symptoms of PTSD, anxiety, and pain."[3] Consumers could easily mistake this for scientific evidence that CBD treats these conditions, despite the fact that clinical practice guidelines recommend against the use of CBD for mental health concerns or acute pain.[4] Indeed, consumers who have been conditioned by the strict health claim regulations imposed on traditional pharmaceutical companies may assume that, for marijuana companies to make a claim, it must be rigorously backed.

EFFECTS ON RESEARCH AND SCIENCE

While the most immediate concern of research as marketing is to protect consumers, the detrimental effects that this marketing practice may have on medical research should not be ignored. Pharmaceutical companies invest in expensive and highly rigorous clinical trials required by regulatory agencies so that they can advertise their products with health claims. However, if companies can imply substantively similar health claims with clever framing of cheaper and less-robust research results (e.g., reporting an association and hoping that consumers will infer causation), that reduces their incentive to invest in more rigorous research.

The effects of these disincentives can already be observed. Major medical marijuana companies have not yet announced any plans to undergo

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the large-scale clinical trials required by federal regulators, even though medical research involving marijuana is fully legal in Canada and medical research involving CBD is now legal in the United States. Instead, these companies often invest in and widely publicize small-scale studies. For example, Canopy Growth, currently the largest marijuana company in the world, chose to invest just $2.5 million over 2 years to sponsor marijuana studies at the University of British Columbia, a figure that pales in comparison with the average $2 to $3 billion cost to bring a product through the FDA approval process.[5] Without more robust research, our understanding of these products' benefits and risks (e.g., addictive potential) may be severely limited.

Furthermore, research as marketing can degrade consumers' trust in the regulatory vetting process, thereby limiting the medical community's ability to use medical innovations to improve health and well-being. For example, all vaccines recommended by the FDA have undergone extensive clinical trials to demonstrate their limited risks. Still, the sensational publicity surrounding Andrew Wakefield's 12-participant observational study linking vaccines to autism convinced thousands of parents to dismiss established evidence and reject vaccines for their children.[6] An investment in regulatory action against research as marketing may ensure that future medical innovations are adopted.

CALL TO ACTION

References to research in health product marketing is not new; previous studies have documented how companies (e.g., food, dietary supplement, nutraceutical, and cosmetic companies) have referenced inconclusive research in their advertisements and that consumers overestimate the scientific validity behind these claims.[7] Federal regulators have taken steps to prevent this; for example, the FDA treats certain scientific citations on dietary supplement labeling as health claims, which are, in turn, subject to the FDA's strict standards for substantiation. However, these past concepts and related regulations are insufficient to address the present state of research as marketing for marijuana. For example, sophisticated marijuana corporations skirt existing regulations by separating their advertisements and product labeling from blogging. While marijuana retailer MedMen does not cite academic studies on the "shop" section of its Web site, MedMen frequently reports on individual health studies in its blog.[1] Dedicated marijuana regulators are needed to draw clear lines between what constitutes marketing and what constitutes free-press journalism in the marijuana industry.

Even barring marijuana companies from publishing the results of individual studies would likely still be insufficient to address research as marketing in today's concentrated marijuana market. Major marijuana companies are aware that news outlets often cover provocative study findings in support of marijuana, and they are large enough to reap the financial benefits of positive press. As a consequence, these companies may invest in small-scale or biased studies, relying on major news networks to publicize the studies' findings. To address this channel of research as marketing, regulators and journal editors should apply additional scrutiny to industry-funded studies, ensuring they can accomplish more than a compelling headline.

Direct-to-consumer research in the Big Marijuana era may mislead consumers into making ill-informed health decisions and undermines the regulatory process that incentivizes and vets robust medical research. Before more consumers are deluded and those marijuana companies interested in pursuing regulatory approval are driven out of the market, federal and international regulators must act to eliminate research as marketing in medical marijuana marketing, and the nuance of this marketing technique proves the need for equally sophisticated federal marijuana regulators to counter harmful marijuana marketing. Specifically, these regulators should be tasked with enforcing existing regulation on references to studies in marijuana marketing and drawing strict boundaries between free-press journalism and marijuana marketing. Journal editors and the press, aware of this underhanded marketing strategy, should apply additional scrutiny to industry-funded marijuana studies and resist widely publicizing preliminary results. AJPH

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CONFLICTS OF INTEREST

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