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Implementation and Effectiveness of an Online Responsible Vendor Training for Recreational Marijuana Stores in Colorado, Oregon, and Washington State

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Abstract

Context—Six U.S. states have implemented retail sales of recreational marijuana. Training in responsible sales practices has been effective in the alcohol market. An online responsible marijuana vendor (RMV) training was produced and implemented with stores in a randomized trial.

Program—An online RMV training was developed through meetings with state regulators and local law enforcement personnel, curriculum standards published by the Colorado Marijuana Enforcement Division in May 2015, interviews with recreational marijuana store personnel (n=15), and usability testing of a prototype training with store personnel (n=19) in Colorado and Washington State. The training contained five modules: State laws and regulations, ID checking, health effects of marijuana, customer service practice including recognizing intoxicated patrons, and rules of the trade.

Implementation—A randomized controlled trial testing the training enrolled a random sample of state-licensed retail recreational marijuana stores (n=225) in Colorado, Oregon, and Washington State. 125 stores were randomly assigned to receive the RMV training. A total of 420 store employees completed the online training between June 2017 and February 2018 (43.5% female, 88.4% under age 40, 74.1% non-Hispanic white).

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Evaluation—Responses to post-training surveys showed that most trainees found the training user-friendly (78.4%), were satisfied (68.8%), and would recommend it to another employee (91.1%). The training improved trainees' ability to check IDs (pre-training mean=3.91 [sd=1.36], post-training mean=4.58 [sd=0.66], $t(df=387, n=388)=8.68$, $p<0.001$) and their confidence to use the state's inventory tracking system (pre-training mean=2.52 [sd=0.65], post-training mean=2.85 [sd=.39], $t(df=387, n=388)=10.89$, $p<0.001$) and spot intoxicated customers (pre-training mean=2.79 [sd=0.41], post-training mean=2.94 [sd=0.25], $t(df=387, n=388)=6.87$, $p<0.001$).

Discussion—Online RMV training was acceptable to retail recreational marijuana personnel and potentially improved responsible sales practices. Responsible vendor training has been successful under certain conditions in the alcohol market and should be considered for the recreational marijuana market.

Keywords

marijuana; retailing; training; Internet

Context

The United States is experiencing the most radical change in substance control policy since the end of alcohol prohibition, with the creation of state-legal recreational marijuana sales. In Alaska, California, Colorado, Oregon, Nevada, Washington, recreational marijuana is sold at state-licensed retail stores to individuals age 21 or older who provide a valid identification (ID). Massachusetts and Maine will debut sales in the near future. Other U.S. states¹ and Canada are moving toward legalizing recreational marijuana sales.²

In 2013, the U.S. Department of Justice (DOJ) notified these states that they must create strong controls to prevent distribution of marijuana to youth,³ which is essential because marijuana use is prevalent among adolescents,⁴⁻⁶ availability can promote initiation⁷⁻¹⁰; and use may increase with legalization/decriminalization.¹¹⁻¹⁴ Beyond age restrictions, Oregon prohibits sales to customers who are apparently intoxicated; similar alcohol over-service laws aim to reduce driving under the influence.¹⁵

Responsible beverage service (RBS) training in the alcoholic beverage market¹⁶ is an intervention intended to improve prevention of sales to minors and intoxicated customers. It is currently required, incentivized, or encouraged in 36 states,¹⁷ and California will require it in 2021. RBS has been effective for reducing illegal alcohol sales to minors, but results on sales to intoxicated patrons are mixed.¹⁸⁻²³

This paper reports on the development of an online responsible marijuana vendor (RMV) training and experiences implementing the RMV training with retail recreational marijuana stores in Colorado, Oregon, and Washington State (three states with legalized sales when the project was initiated) in a randomized trial. Initial evidence of training effectiveness from pre-post training assessments are presented.

Program

Planning for RMV Training

Planning for the online RMV training involved, a) discussions with an advisory board of state regulators, a law enforcement official, and an owner and manager of retail recreational marijuana stores, b) interviews with store personnel in Colorado and Washington State, c) RMV curriculum standards from the Colorado Marijuana Enforcement Division (MED), and d) evaluation of a prototype of the online training with store personnel. Only Colorado and Washington State had legalized sales during the planning phase. All protocols were approved by the Western Institutional Review Board (IRB); the National Institutes of Health issued a Certificate of Confidentiality.

Semi-structured Interviews with Store Personnel—A convenience sample of owners, managers, and employees (n=15) of state-licensed retail recreational marijuana stores in urban, suburban, and rural locations in Colorado and Washington State (21 years of age or older) were interviewed from May to July 2015 (n=12 owners/managers [7 in Colorado, 5 in Washington State]; n=3 clerks [3 in Colorado]; mean=34.1 years old; 8 [53.3%] females; 10 [66.5%] non-Hispanic whites, 2 [13.4%] Hispanic, 1 [6.7%] African American, 2 [13.4%] other or multiple races). Sample size was determined by project budget and timeline. Research staff contacted 120 stores from a randomized list of eligible stores until sample quotas were met (9 stores refused; 6 stores agreed to participate, but did not complete the interview; and 100 stores [83.3%] did not respond). Selection bias was possible with the large non-response.

ID checking was the most frequently cited method for preventing underage sales (n=10, 66.7%). Most Colorado stores (n=8 out of 10, 80%) checked IDs twice, but all Washington State stores checked IDs once. Most stores posted signs warning that customers must be 21 or older to enter (n=10, 66.7%). The most common problem with IDs was expiration. A majority of respondents reported that an underage individual had attempted to enter their store (n=10, 66.7%), either without an ID or by showing their valid underage ID or a fake ID. Some respondents (n=5, 33.7%) believed that minors accessed the marijuana primarily through third-party sales (i.e., someone 21 or older purchasing it for them); however, the majority felt the black market was their source (n=11, 73.3%). A majority reported that an intoxicated customer had entered the store (n=10, 66.7%), but less than half said they would not sell to intoxicated customers (n=7, 46.6%), depending on whether they appeared to be a safety hazard or were acting inappropriately. Still, eight stores (53%) would sell cannabis to an intoxicated customer.

Respondents indicated that their stores provided information to customers on selecting and consuming marijuana products, especially dosing edibles (n=10), but only a few (n=4) provided it in written form (i.e., pamphlets). Other topics discussed with customers were state laws, strain information, and driving under the influence of marijuana. All stores were following state packaging laws by selling products in child-proof containers or pre-packaged products.

Employee training was common, but only five respondents in Colorado had heard of RMV training. Employees typically trained one another, focusing on complying with state regulations (e.g., inventory tracking system, state laws, purchase limits, store policies), product and packaging information, coaching customers on edibles, and ID checking. Most respondents (n=11) preferred RMV training be delivered online.

Prototype Responsible Marijuana Vendor Online Training—A prototype of an online RMV training was developed, including site map and content outline of the training; detailed outline of the first module on laws; and storyboards of case study videos. A fully-functional online version of the second module on ID checking was programmed in HTML5 software that optimized the interface for personal and tablet computers. It contained six learning objects (i.e., program element with content on a single educational objective): 1) initial ID checking quiz, 2) infogadget (i.e., learning object in which users explored information on a topic via different tabs) on preventing sales to minors, 3) infogadget on steps for checking IDs, 4) ID checking activity in which participants evaluated 10 IDs and received feedback, 5) infogadget on common methods used by minors to avoid ID requirements, and 6) infogadget on preventing third-party sales. A video host introduced the module and each activity. In an end-of-module quiz, participants evaluated five IDs and answered five written items. Pilot-testing confirmed that participants were able to complete the prototype and score highly on the end-of-module quiz, and found it to be very usable. They evaluate the prototype and outline of the entire training as comprehensive and logically-organized (see Text Document and Table in Supplemental Digital Content 1).

Train To Tend Online RMV Training

The full online RMV training, named *Train To Tend*, was produced in 2017. Content was organized into five modules: 1. The Laws; 2. ID Checking; 3. Health Effects; 4. Customer Service; and 5. Rules of the Trade. Versions were created to reflect differences in the states' regulations. At the request of the Washington State Liquor and Cannabis Board (WSLCB), the Health Effects module was not included for Washington State.

Content was delivered in a variety of online learning objects. Basic information and skills were presented in “infogadgets.” Custom-built interactive simulations (e.g., checking IDs) allowed users to apply the skills (e.g., whether the ID is apparently valid or not) and receive corrective feedback. Two features in the infogadgets were designed to maintain trainee engagement: 1) short animated case studies illustrating key concepts, and 2) comprehension checks (i.e., a multiple choice or true/false question with feedback). The RMV training was guided by a video host. Closed captioning was available for all videos.

An administrative section controlled the testing of trainees in 10-item end-of-module quizzes (Modules 1-4), and a 50-item final exam (Module 5). Minimum passing scores were set by state regulators, (i.e., 70% correct for Colorado and Oregon, and 80% correct for Washington State). Tests contained both written (e.g., multiple choice and true/false) and skills-application items (e.g., judged the validity of five IDs). Trainees were given two opportunities to “pass” a module quiz, after which they had to complete the module again

before re-testing. Failure to “pass” the final exam after two attempts required re-taking the entire training.

The RMV content in *Train To Tend* was reviewed by regulators in all three states. Colorado MED designated *Train To Tend* as a state-approved responsible marijuana vendor training. Colorado MED incentivizes RMV training by mitigating penalties for violations of state regulations for stores that have all employees trained. Oregon and Washington State do not incentivize RMV training.

Implementation

Train To Tend was implemented in a randomized trial starting in June 2017. A sample of retail recreational marijuana stores (n=175) were randomly selected in September and October 2016 from lists of license holders from the Colorado MED and WSLCB. A sample of 50 stores were randomly selected in September 2017 from the list of license holders from the Oregon Liquor Control Commission, where retail sales started in 2017. Stores were excluded if they participated in the formative research or had an inactive, suspended, or revoked license. Stores were stratified by state and urban (i.e., Denver, Portland, or Seattle metropolitan areas) versus outlying (small cities and rural areas within 1-day total driving distance of Denver, Portland, or Seattle) locations. The project biostatistician randomly assigned 100 stores to a usual and customary control condition, using a customized computer program, and the remaining 125 stores to *Train to Tend*. Sample size of stores was pre-determined for statistical power, but number of store personnel was unknown when planning the trial. Owners, managers, and clerks who completed the RMV training met the following inclusion criteria: Own or employed at a licensed store, sold recreational cannabis products in the store, and aged 21 or older.

Of the 125 stores invited to use *Train To Tend*, 55 stores (44%) had at least one individual complete the training. Overall, 420 of 459 store employees who registered on the training completed it (91%) between June 2017 and January 2018 (i.e., completed all units in sequence with no time limit). Trainees were 43.4% female, 74.1% non-Hispanic white (5.2% Hispanic white; 20.7% other race/ethnicity), and 49.0% age 26 or younger (39.4% 27-39 years old; 11.6% 40 or older). A third (33.3%) had worked for less than 6 months in the marijuana industry, 20.7% 6 months to less than 1 year, 33.1% 1 to less than 3 years, and 12.9% 3 or more years. Nearly all trainees (81.1%) had received other training at their store: By shadowing another employee (81.0%), from the manager/owner (77.4%), in a group setting (44.6%), or from an outside trainer (24.9%).

Evaluation

Trainees completed a pre-training survey after providing informed consent. It assessed self-efficacy expectations for RMV practices, using 5-point confidence ratings. Trainees completed a post-training survey after passing the final exam, measuring usability of the training (11-item System Usability Scale²⁴), tone and perceived benefits of the training, and self-efficacy expectations. See questions in Table 1. Descriptive statistics were calculated for usability and perceived benefits items. Pre- and post-training responses on self-efficacy

items and number of IDs correctly judged at the beginning and end (i.e., first attempt at post-module quiz) of Module 2 were compared using paired t-tests, with alpha set at 0.05 (two-tailed).

Usability of Train To Tend

Among trainees that appeared to complete the training in a single session ($n=285$; i.e., completed it in <500 minutes), mean time to completion was 158.6 minutes ($sd=40.1$). Nearly all participants passed the quizzes (range=98.1%-98.6%) and final exam (98.4%) in their first attempt. Trainees felt the online RMV training had high usability (Table 1). It scored high on being easy to use, (i.e., learning quickly to use it, not needing to learn a lot to use it, and being confident using it), well-structured, not unnecessarily complex, new, and up-to-date. *Train To Tend* scored lowest on the time needed to use it but over half of trainees felt the time was about right. Overall, most trainees provided high user-friendliness ratings (mean= 5.32 [$sd=1.09$] on 7-point scale; 78.4% rated it as good, excellent, or best imaginable) and were satisfied (mean=3.95 [$sd=1.05$] on 5-point scale; 68.8% were somewhat or very satisfied). Additionally, 69.1% of trainees gave the training a 4- or 5-star rating (mean=3.89 [$sd=0.93$]) and 79.1% would recommend it to another employee (Table 1).

Pre-Post Effects of Train To Tend on Responsible Sales Practice

Train To Tend appeared to improve trainees' ability to sell recreational marijuana responsibly. Participants had statistically significantly higher self-efficacy expectations at the end of the training for using the state's inventory tracking system (pretest mean=2.52 [$sd=0.65$; 60.0% confident], posttest mean=2.85 [$sd=0.39$; 85.6%], $t(df=387, n=388)=10.89$, $p<0.001$, Cohen's $d=0.55$), recognizing intoxicated customers (pretest mean=2.79 [$sd=0.41$; 79.6% confident], posttest mean=2.94 [$sd=0.25$; 94.3%], $t(df=387, n=388)=6.87$, $p<0.001$, $d=0.35$), following rules to legally sell marijuana products (pretest mean=2.94 [$sd=0.26$; 93.8% confident], posttest mean=2.98 [$sd=0.16$; 98.2%], $t(df=387, n=388)=2.99$, $p=0.003$, $d=0.15$), and checking IDs to verify the customer is 21 or older (pretest mean=2.94 [$sd=0.23$; 94.3% confident], posttest mean=2.97 [$sd=0.18$; 97.4%], $t(df=387, n=388)=1.98$, $p=0.048$, $d=0.10$). Only confidence in refusing to sell marijuana to an ineligible customer did not improve pre (mean=2.95 [$sd=0.24$; 95.6% confident]) to post (mean=2.97 [$sd=0.17$; 97.7% confident], $t(df=387, n=388)=1.74$, $p=0.083$, $d=0.09$). When the number of IDs correctly verified at the beginning of Module 2 (mean=3.91 [$sd=1.36$] IDs correct out of 5) was compared to the number correctly verified in the end-of-module quiz (mean=4.58 [$sd=0.66$] IDs out of 5), *Train To Tend* appeared to increase ID checking accuracy ($t(df=387, n=388)=8.68$, $p<0.001$, $d=0.44$). Finally, after training, most trainees felt that the training would help them be a better employee, follow state rules on selling marijuana products, work better with their customers, and keep their customers and community safe (Table 2). A majority also said training programs like *Train To Tend* would improve the reputation of the marijuana industry.

Discussion

This project confirmed the need, feasibility, and potential effectiveness of online RMV training in the retail recreational marijuana market. The improvement in confidence to

engage in responsible sales practices and in accuracy of ID checking suggested that a RMV training such as *Train To Tend* was needed to maximize responsible sales practices above that achieved by on-the-job training. Through systematic planning, a feasible online RMV training was developed that met the requirements of state regulators and was acceptable to store personnel (e.g., most trainees would recommend *Train To Tend* to another employee).

Many employees received some training in retail sales practices by experienced employees or managers, but training in comprehensive responsible sales practices by trainers outside the industry was uncommon. Colorado MED prohibits RMV training providers from holding marijuana cultivation, manufacturing, or retail licenses, presumably to reduce conflicts of interest that might decrease training quality. Online training should enhance training quality over in-person training through its high-fidelity instruction and testing; private, confidential, non-judgmental learning environment; ability to update content easily; and use and effectiveness metrics for continuous training improvement.

ID checking was commonly trained by retail stores, and checking IDs was routine for many stores, as confirmed by state compliance checks.²⁵⁻²⁷ Thus, it was not surprising that the prototype module on ID checking was well-accepted and the interactive ID checking exercise was well-liked. Importantly, *Train To Tend* appeared to improve the ID checking skills of employees. It may be that its ID checking steps were more systematic and the learning activities that presented a variety of IDs, including less common ones, with immediate feedback, trained ID checking skills better than on-the-job training. An advantage of online instruction is the availability of interactive, multimedia formats that were utilized to create realistic and engaging learning activities in *Train To Tend*. These activities demonstrated skills, had trainees apply the skills, and provided corrective feedback to improve skills, which are all techniques that improve skill acquisition.^{28,29} It can be challenging to provide this sort of training in a store or classroom.

While in-person trainers may be able to better tailor information to employees' learning style and store environments, the more consistent quality of online training may outweigh benefits of this customization. Online training may have difficulty maintaining user engagement. Along with interactive learning objects, we included elements in *Train To Tend* to hold user engagement, including end-of-module testing with minimum passing scores, videos and animations, and comprehension tests.

Train To Tend also included topics that have been under-addressed, one of these being prevention of third-party sales (i.e., where someone buys marijuana for another person). Some industry personnel appeared to believe minors rely on the black market, which may make them less vigilant for third-party sales. Some state regulations may interfere with preventing third-party sales, such as shielding products from public view, which can impede monitoring outside areas. Gifting regulations also may permit third-party sales under specific circumstances. Another emerging topic is coaching customers on appropriate use of marijuana products. Store personnel are an important source of information on legalized marijuana for customers, including where it can be used, how it can be transported, and how it may affect driving. Concerns over edibles^{30,31} makes coaching customers on safely dosing and storing them important. On advice from local law enforcement, the training

included store safety, such as how to avoid and manage robbery. Other topics will surely emerge as the recreational marijuana industry matures. The ability to quickly and easily update online training will help keep *Train To Tend* current.

As more states and whole countries consider legalized sales of recreational marijuana, effective interventions are needed to help this new industry comply with regulatory schemes. Studies conducted on interventions such as RMV training early in the recreational marijuana market could help reduce problems before they gain a foothold.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Implications for Policy and Practice

- Much has been learned from the controlled market for alcohol that may transfer to the recreational marijuana market. RMV training may be one intervention that can transfer and appeared to have moderate-sized effects on self-efficacy for responsible sales practices and ID checking accuracy. However, it should be one of a combination of policy and enforcement interventions used to prevent sales to ineligible customers.^{32,33} Further evidence is needed on whether it will prevent sales to minors and intoxicated customers in actual practice.
- Experience in the alcohol market suggests that to improve the effectiveness of RMV training, states should require or strongly incentivize RMV training,¹⁶ couple it with active use of compliance checks by regulators and stiff sanctions for non-compliance,^{20,34} and encourage recreational marijuana store managers to support responsible sales practices.¹⁸
- Online delivery of RMV training was preferred and well-received by the majority of retail personnel, and policymakers should consider this delivery channel. Compared to in-person training, online training has 24/7 availability and wide-scale reach, can overcome geographic barriers to reach all stores, especially in rural areas, and be less costly (e.g., lower travel and childcare costs) especially if states certify trained individuals for 3 to 5 years.³⁵ Verification of trainee identity online can be a concern, but online proctoring services are available.

Table 1
Post-training mean scores (standard deviations) on user-friendliness, System Usability Scale, and satisfaction for *Train To Tend* responsible marijuana vendor training by retail recreational marijuana store personnel

Item ^I	M	SD
Felt very confident using the training	4.17	0.83
I did not need to learn a lot before I could get going with the training	4.24	0.92
Time needed to complete the training was just about right	3.41	1.16
Tone of the training aligns with my store's atmosphere	3.77	0.94
I feel I learned something new in the training	3.69	1.08
Information and skills I learned in the training are up-to-date	3.97	0.87
I liked the training	3.70	1.03
The training was not unnecessarily complex	3.80	0.98
The training was easy to use	4.18	0.87
I did not need support of a technical person to use the training	4.13	1.15
Various functions in the training were well- integrated	3.81	0.85
There was not too much inconsistency in the training	3.79	0.94
Most people would learn to use the training quickly.	4.16	0.78
The training was not awkward to use.	3.85	0.99

^I 5-point Likert scale from strongly disagree (1) to strongly agree (5).

Table 2
Post-training mean scores (standard deviations) on benefits of *Train To Tend* responsible marijuana vendor training reported by retail recreational marijuana store personnel

Item ^I	M	SD
The training will make me a better employee at my store	3.87	0.94
The training will help me follow state rules on selling recreational marijuana	3.60	1.30
After the training, I can work better with customers at my store	3.79	0.95
Information and skills learned in the training will help me keep my customers safe	3.65	1.23
Training programs like <i>Train To Tend</i> will improve the reputation of the recreational marijuana industry	4.01	0.95
Information and skills learned in the training will help to keep my community safe	3.97	0.86

^I 5-item Likert scale from strongly disagree (1) to strongly agree (5)