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Descriptive Report

Pre-Shift Smoking Cessation Training for Early Medical School Students in a New Orleans Substance Use Rehabilitation Center

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Abstract

Background: Large-scale studies have reinforced our understanding of smoking as the likely single most important modifiable risk factor affecting health and longevity. Although medical students receive instruction on how to navigate lifestyle change conversations with patients, specific education on how to perform smoking cessation counseling is minimal and comes later in their didactic years. Rates of smoking within the general United States population have declined, but smoking rates remain high in patients with comorbid substance use disorder. Our analysis evaluates the implementation of a 15-minute pre-shift training on smoking cessation counseling, for volunteers at a student-run clinic set in a substance use rehabilitation center.
Methods: The smoking cessation volunteer training takes place in the 15 minutes preceding the volunteer's shift. The on-shift leader first facilitates an open discussion on smoking cessation between all volunteers to gauge their level of knowledge and experience with the content. Areas of focus are divided into medical cessation aids and conversational techniques. The leader then guides all volunteers through a review of the information, ensuring they answer all volunteer questions. First-year students are then encouraged to complete an electronic survey sent out via email following their volunteer shift.
Results: Between 8/16/2023-10/25/2024, 54 responses were received from approximately 150 eligible volunteers, a response rate of 36%. Of surveyed volunteers, 76% reported having a discussion on smoking cessation during their shift. In response to whether the pre-shift training helped their ability to address this topic with patients, 67% answered "definitely yes", 24% answered "somewhat yes", and no students reported the session as unhelpful.
Conclusion: Most medical student volunteers at New Orleans Bridge House engage in smoking cessation discussions with a patient during each shift. Nearly every surveyed volunteer believed they benefited from brief pre-shift training and the majority learned about at least one new cessation aid.

Introduction

Population research has repeatedly reinforced that cigarette smoking is one of the most important modifiable risk factors for all cause morbidity and mortality.[1,2,3] While the rates of smoking within the general US population have dropped to around 12% as of 2021, individuals undergoing substance or alcohol use disorder (SUD/AUD) treatment have rates of smoking as high as 80%.[1] Further, a study examining adults with remitted AUD found that individuals continuing to smoke following their alcohol cessation were significantly more likely to relapse with alcohol use.[1] This reinforces our understanding of cigarette smoking as having effects on substance craving and seeking behavior. Additionally, studies have suggested that individuals undergoing rehabilitation for

an AUD may be more receptive and more successful utilizing a simultaneous-quitting approach with respect to alcohol and cigarettes.[3] Cigarette smoking is also known to increase the risk of developing further substance dependence, underscoring the importance of pursuing abstinence in the setting of substance use rehabilitation.[2]

New Orleans Bridge House (NOBH), a substance use rehabilitation center in New Orleans, hosts a student-run clinic (SRC) in partnership with Tulane School of Medicine (TUSOM) providing health care screenings for men who have become dependent on alcohol or drugs. The SRC functions to provide a primary-care-style appointment to all new residents entering the rehabilitation program. During these appointments, volunteers commonly discuss smoking with patients. We aim to investigate if implementing a short pre-shift training on smoking cessation for all student volunteers is a helpful primer for effective engagement in these discussions with patients.

Methods

Setting

One 4-hour SRC per week takes place at NOBH. Volunteers from TUSOM fall into 3 main categories. Three to four first-year volunteers (MS1, first year medical student) are responsible for performing patient intake, history, physical and medical interviewing. A single second-year (MS2) who has been elected by peers to be the clinic leader, oversees the operations during the shift. Lastly, three to four fourth-year medical students (MS4) in an advisory role in which they help MS1 volunteers through exam components, help form plans and supplement patient presentations to the attending physician. Lastly, the attending physician volunteers in a preceptor role, receive patient presentations from MS1 volunteers, make executive decisions in patient management, and write appropriate prescriptions.

Smoking Cessation Training Details

The smoking cessation volunteer training takes place in the 15 minutes preceding the weekly shift. The MS2 leader first facilitates an open discussion on smoking cessation between all volunteers to gauge the level of knowledge and experience with the content. Evidence-based conversational techniques such as motivational interviewing, SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals, and Ask-Assess-Advise are discussed. The integration of SMART goals offer structured, patient-centered approach to behavioral counseling. By encouraging early learners to formulate concrete, realistic objectives with their patients, the SMART framework helped bridge the gap between theoretical knowledge and practical application, reinforcing clinical confidence in lifestyle intervention discussions. Next, an information sheet from the New York State Department of Health is provided, containing details about all Food and Drug Administration approved pharmaceutical interventions for smoking cessation, as demonstrated in Figure 1. The MS2 leader then guides all volunteers through a review of the information, ensuring all volunteer questions are answered. MS4 volunteers are encouraged to provide input based on their experiences in clinic rotations. The current group of MS2 NOBH leaders have received substantial instruction from a past leader on how to conduct the session and will educate the incoming class of leaders before the transition. Schematic of training workflow is shown in Figure 2**.**

Post-Shift Survey

One to three days after the shift, the MS2 leader sends out an electronic survey to all MS1 volunteers. MS4s are not included in the survey as it is less expected they will be presented with novel information during the session, given that they are further along in medical school. All responses were recorded in Google Forms (2025, Google LLC, Mountain View, CA), and basic response percentages were compiled using Microsoft Excel (Version 2406, Microsoft Corporation, Redmond, WA). The questions included with answer options are as included in Table 1.

Figure 1. New York State Department of Health smoking cessation medication prescribing chart[9]

These highlights do not include all information needed for safe and effective use. See full prescribing information for each medication.

Medication*		Suggested Regimen	Precautions	Contraindications	Potential Adverse Effects
Nicotine Replacement Therapy (NRT)	***Patch***† Long-acting NRT	≤10 cig/d, start with 14 mg/qd x 6 weeks, followed by 7 mg/qd x 2 weeks >10 cig/d, start with 21 mg/qd x 6 weeks, followed by 14 mg/qd x 2 weeks, followed by 7 mg/qd x 2 weeks	▪ Pregnancy Class D‡ ▪ Uncontrolled hypertension ▪ Skin disorders (patch) ▪ Allergy to adhesive tape (patch) ▪ MRI (patch) ▪ Advise starting with the highest-dose patch available except for patients weighing less than 100 lbs. ▪ TMJ disease, dental work, dentures (gum) ▪ Sodium-restricted diet (gum, lozenge, nasal spray) ▪ Stomach ulcer (gum, lozenge, nasal spray, inhaler) ▪ Sinusitis, rhinitis (nasal spray) ▪ Reactive airway disease (nasal spray, inhaler)	▪ Heart attack within 2 weeks ▪ Serious cardiac arrhythmia ▪ Unstable angina	▪ Symptoms of too much nicotine, e.g., nausea, headache, dizziness, fast heartbeat ▪ Skin irritation, insomnia (patch) ▪ Jaw pain, dry mouth (gum) ▪ Hiccups, heartburn (gum, lozenge) ▪ Bronchospasm (nasal spray, inhaler) ▪ Nasal irritation, tearing, sneezing (nasal spray) ▪ Mouth and throat irritation (inhaler)
	Gum† Short-acting NRT	1st cig >30 mins after awakening, 2 mg/hr 1st cig ≤30 mins after awakening, 4 mg/hr (both up to 24 pcs/day)			
	Lozenge† Short-acting NRT	1st cig >30 mins after awakening, 2 mg/hr 1st cig ≤30 mins after awakening, 4 mg/hr (both up to 20 pcs/day)			
	Nasal spray Short-acting NRT	1–2 sprays/hr, as needed (max 40/d up to 3 mos)			
	Inhaler Short-acting NRT	Frequent continuous puffing for up to 20 mins at a time every hour, as needed (6 –16 cartridges/d up to 6 months)			
	Long-acting NRT (patch) can be used in combination with short-acting NRT (gum, lozenge, nasal spray or oral inhaler) or with bupropion SR.				
Bupropion SR (Zyban®, Wellbutrin®)		Days 1–3: 150 mg po qd Day 4 to 7–12 weeks (or end of treatment): 150 mg po bid Can be maintained up to 6 months (24 weeks) ***Can be combined with the NRT patch***	▪ Pregnancy Class C‡ ▪ Uncontrolled hypertension ▪ Severe cirrhosis – dose adjustment required ▪ Mild-mod hepatic & mod-severe renal impairment – consider dose adjustment	▪ MAO inhibitor in past 14 days ▪ Seizure disorder, bulimia/anorexia ▪ Abrupt discontinuation of ethanol or sedatives	▪ Insomnia, dry mouth, headaches, pruritis, pharyngitis, tachycardia, seizures, neuropsychiatric effects and suicide risk ***As of December 16, 2016, the FDA removed the Boxed Warning for this medication.*** https://www.fda.gov/Drugs/DrugSafety/ucm532221.htm
Varenicline (Chantix®)		**Starting month pack:** (start 1 week before quit date§) 0.5 mg po qd x 3 days; THEN 0.5 mg po bid x 4 days; THEN 1 mg po bid x 3 weeks **Continuing month pack:** Week 5 to 12 (or end of treatment): 1 mg po bid Can be maintained up to 6 months (24 weeks) ***CANNOT be combined with NRT***	▪ Pregnancy Class C‡ ▪ Seizure disorder ▪ CrCl <30 or dialysis – dose adjustment required ▪ May increase risk of CV events in patients with CVD ▪ Operate heavy machinery ▪ May lower alcohol tolerance	▪ Known history of serious hypersensitivity or skin reactions to varenicline	▪ Nausea, insomnia, abnormal dreams, constipation, neuropsychiatric effects, seizures, suicide risk and cardiovascular events ***As of December 16, 2016, the FDA removed the Boxed Warning for this medication.*** https://www.fda.gov/Drugs/DrugSafety/ucm532221.htm

*New York State Medicaid Fee-for-Service and Medicaid Managed Care Plans cover all seven FDA-approved medications (OTC NRT are covered with a prescription). New York City's official prescription discount card, BigAppleRx, provides savings on medications, including OTC NRT medications with a prescription, for people living, working or visiting New York City. For other health insurances, consult plan administrator or formulary for coverage.
† In 2013, the FDA did not identify any safety risks associated with longer-term use of OTC NRT products. Tailor to patient's needs if longer duration is necessary.
‡ May consider if counseling alone is ineffective, the patient is highly motivated to quit and the risk-benefit has been carefully assessed with patient.
§ Alternative regimen for varenicline is to instruct patient to take 1mg bid then select target quit date between Days 8 and 35 of treatment.
Note: Zyban® and Wellbutrin® are registered trademarks of GlaxoSmithKline. Chantix® is a registered trademark of Pfizer, Inc. The use of brand names does not imply endorsement of any product by the New York City Department of Health and Mental Hygiene or the New York State Department of Health.

The handout from the New York State Department of Health is provided to all volunteers, detailing pharmaceutical options for smoking cessation.

Figure 2. Schematic of training session

A timeline and schematic demonstrating the different portions of the implemented smoking cessation training sessions. In the left-most panel, a MS2 is seen giving the discussion on smoking cessation. In panel 2, an overview of pharmaceutical smoking cessation aids is shown, which would be discussed with the MS1 volunteers during pre-shift training. In the 3rd panel, an MS1 volunteer is seen in a conversation with a patient about smoking cessation. Finally, in the rightmost panel, the post-shift survey is sent to all MS1 volunteers.

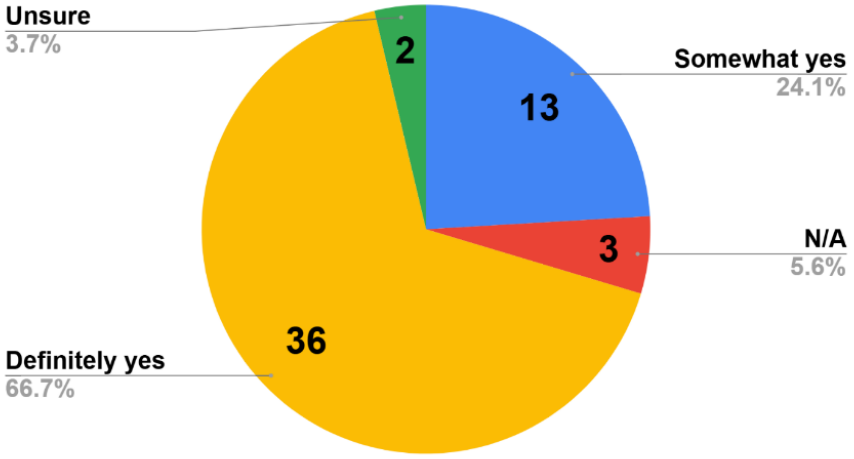
Table 1. Post-shift survey

Question	Response Choices
Did you have any discussions about smoking cessation with patients during your recent Bridge House shift?	Yes No
Do you have adequate nutrition and access to healthy food?	Definitely Yes Somewhat Yes Unsure No Other
Do you feel that the brief discussion with the second-year medical student (MS2) clinic leader and third-year medical students (MS3s) regarding smoking cessation improved your ability to address those topics with patients?	Nicotine Patch Nicotine Gum Nicotine Lozenge Nasal Spray Non-nicotine medications (Varenicline/Bupropion) Using combinations of the above
Is there anything you wish was addressed? (or any comments in general)	Free response

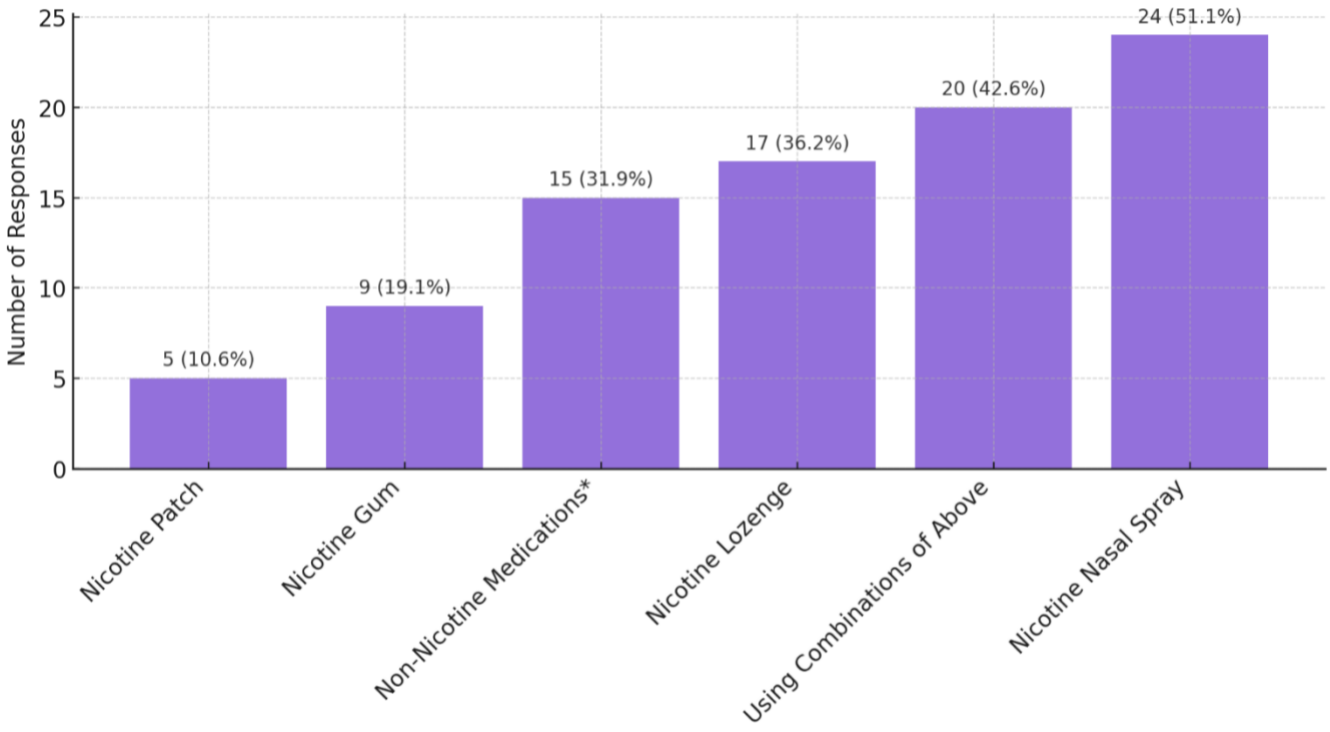
The post-shift survey sent to all first-year medical students (MS1s) , one and three days following their volunteer shift.

Figure 3. Responses to post test survey questions

A. "Do you feel the short discussion with the clinic leader and fourth-year medical students (MS4s) regarding smoking cessation improved your ability to address this topic with patients?"



B. "Which method of smoking cessation discussion were you not previously aware of?"



*A) Response numbers shown in grey, with percentage of responses in parentheses for each survey question. Students were most frequently unaware of nicotine nasal spray and the option to use combination nicotine replacement, which, interestingly, has been shown to be more effective than monotherapy with a single nicotine replacement therapy. The N/A category includes responses such as students who had already received the training or input a more detailed response than the preset answers. B) A bar graph demonstrating responses to the title question. 47 responses are included. Most medical students found the smoking cessation training very helpful with no students reporting that it was entirely unhelpful. *Varenicline and bupropion*

Results

Between 8/16/2023-10/25/2024, a total of 54 responses were received from approximately 150 unique eligible volunteers, yielding a response rate of 39%. 76% of surveyed volunteers report having a discussion on smoking cessation during their shift. In response to whether the pre-shift training helped their ability to address this topic with patients, 45 volunteers responded, with 67% answering "definitely yes" and 24% answered "somewhat yes", with no students reporting that the session was unhelpful. Of the cessation aids discussed in training, the 3 least familiar to the 47 students that responded were nicotine nasal spray (51.1% unaware), combination nicotine replacement therapy (42.6%) and nicotine lozenge (36.2%). Comprehensive results for each survey question are shown in Figure 3a and 3b.

Discussion

Smoking Cessation Counseling in the Student Run Clinic Setting

The findings from analysis of this initiative reveal the vital role of SRCs in enhancing smoking cessation education in preclinical years. Students attending medical school receive a standardized robust education that may lack specificality regarding smoking cessation techniques. The integration of smoking cessation education within SRCs not only equips medical students with clinical skills but also provides them with a deeper understanding of the complexities surrounding tobacco dependence. In the interactive setting of SRCs, students can practice counseling techniques and tailor their own personalized approach to smoking cessation conversations with patients. The involvement of a variety of MS2 and MS4 volunteers in the training session allows for a collaborative approach in navigating this complex topic. Implementation of training sessions such as these emphasizes the importance of creating empathetic practitioners who can address a myriad of health concerns outside of a singular chief complaint. Presenting students with information on smoking cessation just prior to their engagement in these conversations with patients is more helpful than a traditional classroom lecture format.

The Role of a Medical Student in Smoking Cessation Discussion

Research on medical students' comfort with smoking cessation reveals a concerning gap in confidence and training.[3] Many students report feeling ill-prepared to engage patients in discussions about quitting smoking, often due to inadequate exposure to smoking cessation strategies during their education.[4] Studies highlight that increased clinical experience can boost comfort levels, suggesting that hands-on training is crucial.[3] To improve this situation, it is recommended that medical curricula integrate more structured training on smoking cessation, emphasizing practical skills and available resources. This will lead to better patient care in addressing tobacco use. Even in fourth-year medical students, studies have found that focused multimodal training sessions increased students' confidence in engagement in smoking cessation conversations.[6]

Future Directions

The implementation of targeted training programs within SRCs could serve as a step toward enhancing the counseling skills of future healthcare providers regarding habits other than tobacco use such as exercise and healthy eating. In addition to giving students the useful skills they need to address these health determinants; this training method would promote a patient-centered approach that prioritizes wellness and prevention. For example, we are in the process of piloting this lifestyle health training in coordination with the Tulane University Goldring Center of Culinary Medicine. This training which follows a similar format to the smoking cessation initiative but instead teaches students how to provide general nutrition counseling, strategies to smart grocery shopping, and even specific inexpensive healthy recipes We are hopeful that by establishing this training format, it may be further adopted by individuals with other initiatives to empower students to address

topics including harm reduction, physical fitness, oral health or mental health, with patients. By focusing on counseling techniques, SRCs can empower students to effectively engage patients in meaningful conversations about lifestyle changes, thus improving health outcomes in underserved communities.

Evaluating documented trends over the next year can measure the success of this potential program and its impact on influencing patient's lifestyle changes. The smoking cessation training is continuously revised based on the responses from the post-survey. Feedback on the survey revealed that students also found a printout version of the smoking cessation pharmaceutical guidelines helpful, demonstrating that multimodal instruction may be more effective for content retention and thus have implemented a printed handout for all volunteers. Future research should explore effective strategies for training medical students to deliver consistent and evidence-based smoking cessation counseling. In addition, any effect of the training's impact on patient's cessation attempts should be analyzed. A future investigation should examine the rates of cessation over time in patients seen by Tulane medical students receiving this training. A patient survey would also be helpful to determine the patient's perception of the effectiveness of cessation discussions they have with students. Lastly, an analysis of the MS4 experience in this training would help provide a unique perspective on areas for improvement. As MS4s have more clinical experience than earlier medical students, a survey examining their impression of the clinical utility of the training would help sharpen its relevance to actual patient discussions. Ultimately, the goal is to ensure all patients receive high-quality care in addition to attempting to measure patient satisfaction and success with cessation.

Limitations

There is inherent variability in the training practices of the different leaders that rotate clinic shifts from week to week. As consistency of the training will best ensure its effectiveness, similar training implementations should consider methods such as checklists or formal scripts to promote standardization. Additionally, medical students come into school with varying degrees of experience and comfort regarding smoking cessation education from personal, professional, or familial experience. As the post shift survey is not made mandatory, the low response rate of 36% limits the generalizability of our findings. Investigation into inexpensive incentives for its completion, such as entrance into a prize giveaway, might help increase the response rate moving forward. Lasty, due to the limitations in the SRC setting, it is difficult to measure smoking cessation success, which requires a significant longitudinal follow up.

Conclusion

Most medical students benefit from a short, targeted training on smoking cessation counseling before engaging in such conversations. By bridging the gap between knowledge and practical application, SRCs prepare future healthcare providers to tackle tobacco dependence conversations with competence and confidence. More research is needed to investigate the efficacy of these conversations regarding patient experience and success in cessation.

Disclosures

The authors have no conflicts of interest to disclose.

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