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Opioid Use Disorder and Assessment of Patient Interactions Among Family Medicine Residents, Medical Students, and Physician Assistant Students

John G. Spangler, MD, MPH, Catherine N. Shull, PA-C, MPAS, Carol A. Hildebrandt, Keli Beck Jones, MD, Andrew L. Brewer, MS, Mark P. Knudson, MD, MS, Gail S. Marion, PA-C, PhD, Julienne K. Kirk, PharmD*

*Corresponding author: jkirk@wakehealth.edu

Abstract

Introduction: In light of the opioid overdose epidemic in the US and the necessity of developing training to conduct difficult conversations around opioid dependence, three case-based videos were created to demonstrate providers using motivational interviewing (MI) with patients who have opioid use disorder (OUD). These vignettes displayed a primary care provider interacting with a patient seeking opioids. **Methods:** Learners—including third-year medical and physician assistant (PA) students, and family medicine residents—viewed three videos set in a family medicine clinic and assessed clinician use of MI when interacting with patients with OUD. The patients were at different levels of acknowledging their need to change their opioid use behaviors and/or pursue treatment. Learners rated each video with an MI rating scale, and a facilitator debriefed strengths, weaknesses, and omissions regarding MI. **Results:** Medical and PA students, and resident family physicians provided 572 ratings. Analysis of variance of mean percent incorrect was lower in residents than in all groups combined, but failed to reach statistical significance (47% + 12.0 vs 53% + 15.0, $p = .43$). **Discussion:** These case-based videos with MI ratings afforded students and residents the opportunity to assess clinician use of MI techniques with patients with OUD. The MI rating scale had clinical significance (residents scored +5 points and had more training) despite lacking statistical significance. These scenarios allowed learners to recognize how to use MI when having a difficult conversation with patients who misuse opioids. We envision individual use or use for group discussion.

Keywords

Addiction, Curriculum, Drug Dependence, Opioid Use Disorder, Medical Learners, Medication Assisted Treatment, Video Review, Nurse/Nurse Practitioner, Pharmacist, Physician, Physician Assistant, Psychologist, Substance Abuse/Addiction, Case-Based Learning, Clinical Teaching/Bedside Teaching, Problem-Based Learning, Self-Assessment, Opioids

Educational Objectives

After reviewing these videos, learners will be able to:

1. Identify interviewing skills as described in the motivational interviewing (MI) framework and the screening, brief intervention, and referral to treatment (SBIRT) method.
2. Discuss the use of MI and SBIRT frameworks as they relate to opioid use disorder (OUD).
3. Identify strategies that may be used to address denial in patients suspected of OUD.

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Introduction

Patients misuse an estimated 21% to 29% of prescribed opioids.[1] Over 2.2 million Americans, in 2016, were identified by the US Surgeon General as having opioid use disorder (OUD).[2] In 2017, the North Carolina State legislature passed the Strengthen Opioid Misuse Prevention (STOP) Act restricting the quantities of opioids prescribed for acute and postoperative pain.[3] Few providers have training to identify the problem of opioid addiction or to use appropriate screening and conduct difficult conversations with patients about addiction and therapy options.[4-6] Moreover, in the primary care setting, medication assisted therapy (MAT) is underutilized.[7] Curricula to portray the application of interviewing techniques to approach patients with OUD is imperative to prepare future providers on how to evaluate opioid misuse, addiction, and treatment strategies.

One evidence-based practice is the screening, brief intervention, and referral to treatment (SBIRT) process that is an evidence-

based practice used to identify, reduce, and prevent problematic use, abuse, and dependence on alcohol and illicit drugs.[8-10] Motivational interviewing (MI) facilitates an engaged discussion with the patient and can influence health behavior outcomes, providing an appropriate setting in which to introduce delicate questions regarding opiate use behaviors.[11-13] MI is a counseling technique used to address patient factors to change their behavior. By assessing the patient's goals or values with current behavior, the use of open-ended questions, affirmation, reflections, summary statements and developing a helping relationship can be utilized. The use of a screening tool, such as the drug abuse screening test (DAST-10),[14] is necessary to assess a patient's level of drug abuse quantitatively, along with measuring drug involvement and problems association with the abuse drugs. The tools including SBIRT, MI, and the DAST-10 were utilized to build this education framework for assessing patients with OUD.

Primary care providers are in a pivotal role to diagnose and treat OUD and opioid dependence. A topic review of the present literature in *MedEdPORTAL* did not identify any publications that offer a facilitator guide with actual video demonstrations as a training program with a patient suspected to have an OUD. Related topics included identification of opioid withdrawal and substance use disorder training.[15,16] Exposure to an OUD curricula during training can provide a platform on which to approach a patient with OUD and provide MAT using medications like buprenorphine/naloxone and/or pain treatment alternatives. As part of an effort to meet the needs of patients seeking care outside the primary care clinic for buprenorphine/naloxone and a review of our increased number of patients on high-dose opioids, we prioritized teaching this topic with a plan to offer MAT in our clinic. We implemented an OUD teaching curriculum in an academic medical center utilizing three case vignettes to demonstrate the components of how to have a conversation with a patient about their opioid use. The video vignettes were for teaching learners about how to have a conversation regarding OUD using techniques of MI and SBIRT. The three case vignette videos can easily be part of various internet conferencing/instructional platform delivery of this training program to help train future providers regarding OUD. The facilitator should be someone who has experience with MI and SBIRT as well as an understanding of DAST-10.

Methods

We created three case vignettes derived from previous patients with OUD. Our learners possessed a baseline skill level of MI, but if this is not typical of your learners we recommend reviewing these activities for instruction or a refresher on MI technique.[17-19] There is also instructional SBIRT material in *MedEdPORTAL* that incorporated MI that learners have access to review.[19] Prior to the session, facilitators for each learner group attended an education session that included reviewing the case vignettes and the rating scales along with debriefing instructions.

Implementation required a s single large-space room to accommodate the cohort plus one or two facilitators, A/V equipment for viewing the videos, and laptops for each cohort member to fill out questionnaires.

Our team scripted encounters detailing clinic interactions with family medicine providers to replicate real clinical experiences. A professional videographer captured the case vignettes and debriefing. After viewing a short case video introduction (Appendix A), the four learner groups, third-year medical students ($n = 43$), two classes of physician assistant (PA) students ($n = 86$ and 84), and family medicine residents ($n = 10$) viewed the videos. We evaluated the learner groups separately as the training level for each was different, including the family medicine residents who were in their second year of practice. The three vignettes depicted a physician initiating a discussion with a coffee shop manager (Appendix B), a football player (Appendix C), and a traveling salesman (Appendix D) about OUD that we will refer to as the difficult conversations. The case vignettes were included in learning modules on OUD offered to medical learners. We have organized three different cases of patients with OUD and at different stages in recognizing their opioid misuse/addiction as well as in their outlook for readiness to change their behavior.

After viewing the videos (Appendices A-D), all learners rated the case vignettes on how well the physician utilized the elements of MI using a 5-point Likert scale (1 = *no use during the interview,* and 5 = *best use during the interview*). A written synopsis of each case vignette was included in Appendix E. The rating scale for MI (Appendix F) along with the DAST-10 (Appendix G) were both provided so learners were able to become familiar with these approaches. The learners should identify the parts of the video discussion that demonstrated, omitted, or did a poor job of revealing the components of screening, MI, and SBIRT in the patient interaction. All learner scoring of the three scenarios (coffee shop worker, traveling salesman, and football player) occurred before learners saw the video of a faculty member (John G. Spangler) debriefing each scenario at its end.

Viewing of the videos in a group with a facilitator(s) debriefing after each of the three cases was necessary to elicit substantial feedback and discussion. We created a facilitator guide

(Appendix H) and recommend educators use it to engage the discussion for debriefing on the cases and the selected MI ratings. Specifically, the MI scale (Appendix F) provided the learner with a tool to assess how the provider performed in asking open-ended questions, giving affirmation, offering reflection, employing summarization, and developing a helping relationship with the patient.

Video scripts included an array of MI techniques delivered with varying frequency. Learners' ratings were compared with the ratings of the videos' creators (John G. Spangler, Julienne K. Kirk), one of whom (Julienne K. Kirk) has been certified in MI. Using an analysis of variance (ANOVA) test, the mean percent of second-year family medicine residents who correctly scored the five MI skills were combined for all three scenarios and compared to the same ratings of all other learns combined into one group. There were a potential 15 ratings per learner. We hypothesized that the MI rating scale would have significance if the mean percent of second-year family medicine residents correctly rating the scenarios was higher than that of all three other groups combined (third-year medical students and first- and second-year PA students). We set statistical significance at $p < .05$, and carried out all calculations with IBM SPSS Statistics 26.0.

Results

A total of 572 ratings for all scenarios were provided by four groups of learners: PA students in the class of 2020 ($n = 86$), PA students in the class of 2019 ($n = 84$), third-year medical students in the class of 2021 ($n = 43$), and second-year family medicine residents in the class of 2020 ($n = 10$). Table 1 presented the mean percent of learners by group who correctly identified the MI techniques for the three vignettes, based on the correct answers identified by the faculty who developed the scenarios (John G. Spangler and Julienne K. Kirk). Across all three case vignettes and four groups of learners, the mean percent of correctly identified MI techniques ranged from 16% (third-year medical students identifying *developing a helping relationship* in the traveling salesmen vignette) to 90% (family medicine residents identifying *open-ended questions* in coffee shop worker vignette; Table 1).

Using the ANOVA test, the mean percent of second-year family medicine residents who incorrectly scored the five MI skills was combined for all three scenarios and compared to the same ratings of all other learners combined into one group. Table 2 displayed the mean percent of family medicine residents compared to mean percent of all other groups combined who incorrectly identified all MI techniques in all three vignettes (47% + 12.0 vs 53% + 15.0, $p = .43$).

The overall feedback from all learners was that the videos were helpful to see how a conversation regarding OUD would occur in a primary care setting. The brief encounters in the case vignettes were noted to be informative and a useful exercise. The sessions for debriefing were most helpful for learners to discuss their concerns about OUD in practice and the use of community resources.

Discussion

To address an educational intervention regarding OUD, we developed video case vignettes that depicted a primary care provider discussing opioid misuse in three different scenarios. We found that second-year family residents had the lowest

Table 1. Mean Percent of Learners by Group Who Correctly Identified MI Techniques in the Three Case Vignettes

		MI Technique (mean %)				
Vignette	**Learner Type**	**Open-Ended Questions**	**Affirmation**	**Reflection**	**Summarization**	**Developing a Helping Relationship**
Coffee shop worker	PA students ('20)[a]	83	71	68	47	69
	PA students ('19)[b]	80	71	76	62	73
	Third-year medical students ('21)[c]	61	57	57	44	65
	Second-year FM residents ('20)[d]	90	44	40	56	89
Traveling salesman	PA students ('20)[a]	40	35	56	35	30
	PA students ('19)[b]	45	32	36	29	41
	Third-year medical students ('21)[c]	47	35	55	28	16
	Second-year FM residents ('20)[d]	50	20	40	30	60
Football player	PA students ('20)[a]	50	45	50	50	34
	PA students ('19)[b]	32	29	31	35	30
	Third-year medical students ('21)[c]	41	37	51	36	31
	Second-year FM residents ('20)[d]	50	50	70	60	40

Abbreviation: MI, motivational interviewing; PA, physician assistant; FM, family medicine
[a] $n = 86$
[b] $n = 84$
[c] $n = 43$
[d] $n = 10$

Table 2. Percent of FM Residents Incorrectly Identifying all 5 MI Techniques Compared With All Other Groups Using ANOVA

Learner Type	Incorrectly Identified MI Techniques % (*SD*)	*P*
Second-year FM residents ('20)[a]	47 (12.0)	.43
All others[b]	53 (15.0)	.43

Abbreviations: MI, motivational interviewing; ANOVA, analysis of variance; FM, family medicine; PA, physician assistant
[a] $n = 10$
[b] PA students, class of 2020 ($n = 86$); PA students, class of 2019 ($n = 84$); and third-year medical students, class of 2021 ($n = 43$).

percent incorrect ratings compared to the other groups (47% + 12.0 vs. 53% + 15.0, respectively, $p = .43$). Although this did not reach statistical significance, the 10-point difference is likely clinically significant. The lack of statistical significance might have been due to a small sample. Better performance by residents in recognizing MI techniques was presumably due to their increased experience, more than double the years of training than the other learner groups. It was noteworthy that family medicine residents did not score as well as other groups in recognizing affirmation and reflection behaviors. This may have been due to two factors combined. First, there were only 10 family medicine residents compared to learners in the other groups ($n = 213$). Second, we had one resident that did not score well on these two items, bringing down the score of the whole group. In addition, affirmation and reflection behaviors may be areas that our residents need more experience and coaching with patients. Moreover, the travelling salesman (Appendix C) was the most difficult case overall as reflected by all groups' scores. Limitations to consider included that learners had various exposure to OUD and MI. However, if students were to improve their scores relative to family medicine residents, the bias would be towards the null.

The learners appreciated the practical application of MI. The video vignettes helped to portray that opioid misuse and addiction, so prevalent in our communities, can develop in all types of patients, dismantling the stereotypical image of an addict. The vignettes demonstrated the vital strategies needed for a clinician to have when approaching challenging conversation with a patient who has OUD, relevant to the patient's degree of readiness for behavior change. We did not posttest the learner scoring because the video debriefing discussed the potential answers.

A limitation noted by many of the PA students who viewed the videos during their clinical year was that they would have preferred to see them in their didactic year. For the second cohort, the class of 2020, the teaching exercise changed to the clinical year prep course offered at the end of their didactic year prior to starting clinical rotations.

Conclusion and Reflections

The cost of the videos for professional videography and editing was about $600 per video. If programs use this type of activity for teaching, it would be more cost effective than simulated patients. We have submitted these videos to *MedEdPORTAL* so programs that do not have the resources to create their own videos can have access to these teaching tools. Reflecting on the use of the three case vignettes, we plan to continue to use the clinical vignettes as an integral part of medical education. The learners found the case studies to be extremely helpful. While the sample size did not lend itself to broad assumptions about the effectiveness of the vignettes in teaching MI skills, it did offer tangible examples of utilizing these skills in the clinical context of OUD. Moving forward, we would like to investigate further the degree to which practice training influences the ability of students to identify MI techniques. We believe that live examples can be applied with a variety of learners of varied levels of training, and has value in teaching the universal skill of MI in the setting of OUD.

Appendices

A. Case Video Introduction - Dr. John Spangler.mp4

B. Coffee Shop Manager Video.mp4

C. Traveling Salesman Video.mp4

D. Football Player Video.mp4

E. Description of Case Vignettes.docx

F. Motivational Interview Rating Scale.pdf

G. Drug Abuse Screening Test (DAST-10).pdf

H. Facilitator Guide.pdf

All appendices are peer reviewed as integral parts of the Original Publication.

John G. Spangler, MD, MPH: Professor, Wake Forest School of Medicine, Department of Family & Community Medicine

Catherine N. Shull, PA-C, MPAS: Assistant Professor, Wake Forest School of Medicine, Departments of PA Studies, Family & Community Medicine

Carol A. Hildebrandt: Academic Curriculum Coordinator, Wake Forest School of Medicine, Department of PA Studies

Keli Beck Jones, MD: Assistant Professor, Wake Forest School of Medicine, Department of Family & Community Medicine

Andrew L. Brewer, MS: Instructional Technologist, Northwest Area Health Education Center

Mark P. Knudson, MD, MS: Professor, Wake Forest School of Medicine, Department of Family & Community Medicine

Gail S. Marion, PA-C, PhD: Professor, Wake Forest School of Medicine, Department of Family & Community Medicine

Julienne K. Kirk, PharmD: Professor, Wake Forest School of Medicine, Department of Family & Community Medicine

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Informed Consent
All identifiable persons in this resource have granted their permission.

Ethical Approval
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