

# Improving Medical School Education on the Care of Sexual Assault Patients: A Quasi-Randomized Controlled Study

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## Abstract

**Introduction:** Comprehensive healthcare for survivors of sexual violence is essential to prevent the diverse sequelae associated with the assault. In partnership with a local rape crisis center, we designed an educational module with the goal of training medical students on the basic needs of sexual assault patients with the aim to see if there was a significant difference in preparedness to counsel such patients. **Methods:** This quantitative quasi-randomized controlled study tested the effectiveness of an educational module on improving medical student preparedness for encounters with victims of sexual assault. A one-hour presentation, focusing on basic medical and legal knowledge regarding sexual abuse and compassionate patient-centered care, was provided to the intervention group during their compulsory Year 4 Emergency Medicine clerkship orientation. At the end of the month, students in the intervention and control groups were assessed using a standardized patient encounter simulating the presentation of a victim of sexual assault. Scores were determined by standardized patients, who utilized two checklists – one widely used for communication skills (KEECC-A) and the other focusing on sexual assault (WC-SAFE-specific). **Results:** For the KEECC-A, there was no significant difference in scores between the control and intervention groups ( $p=0.9257$ , 95% Confidence Interval [95%CI] 14.42,15.58). The WC-SAFE-specific checklists were significantly different between the intervention and control groups ( $p=0.0076$ , 95%CI 3.79,4.21). **Conclusion:** Our sexual assault module increased preparedness of medical students for encounters with sexual assault victims and provide trauma-informed care.

**Key Words:** Counseling; Rape; Survivors; Sex Offenses; Crime Victims; Comprehensive Health Care (Source: MeSH-NLM).

## Introduction

Over 323,000 reports of sexual assault were reported in the United States in 2016 alone, and were experienced by one in six women and one in 33 men.<sup>1</sup> These statistics largely underestimate the total number of rapes as the Rape, Abuse, and Incest National Network estimates that just one in three victims of rape report the assault.<sup>2</sup> The term “sexual assault” is defined as any nonconsensual sexual act, including when the victim does not have the capacity to consent.<sup>3</sup> The population economic burden of sexual assault in the United States is estimated to be about \$3.1 trillion, underscoring the significant public health burden of this crime.<sup>4</sup>

Sexual violence is a public health crisis, with an estimated 23 million women in the United States reporting an attempted or completed rape during their lifetime.<sup>5</sup> As a result, most medical providers will encounter victims of sexual assault during their clinical careers. These interactions can have long-standing impacts on health outcomes.<sup>6</sup> Several medical associations, including the American College of Obstetricians and Gynecologists, the American Psychiatric Association, and the American Academy of Pediatrics describe duties of physicians in providing care to patients who are survivors of sexual assault, thus making our results pertinent to the training of future physicians.<sup>7</sup>

Comprehensive healthcare services for survivors of sexual assault are essential, and survivors should seek emergency medical care as soon as possible to manage the diverse sequelae of sexual assault. These include both short- and long-term physical and mental trauma, sexually

transmitted infections (STIs), and unintended pregnancy. Furthermore, a visit within 72-120 hours after assault is the most optimal time to provide medical care for these patients, which often includes the services of an emergency physician (EP) and a sexual assault forensic nurse examiner.<sup>8</sup>

It is imperative that medical students recognize relevance and value of sexual assault education in their training. Such training for medical students is necessary, as many have never had formal training with regard to appropriate interventions for victims of sexual assault.<sup>5</sup> For example, although EPs are most often the initial medical providers treating victims of violent crimes, many are not adequately trained to care for sexual assault patients as there is currently no standard forensic medical training program.<sup>9,10</sup> Thus, the aim of this study was to design and assess an educational module, with the goal of increasing the preparedness of medical students for encounters with sexual assault victims.

## Methods

### Educational Module

This quantitative quasi-randomized controlled study tested the effectiveness of an educational module on improving medical student preparedness for encounters with victims of sexual assault. Our educational module was designed by a team from Wayne County Sexual Assault Forensic Examiners (WC-SAFE), a local non-profit organization that provides free emergent and ongoing comprehensive medical, legal, and psychosocial care to sexual assault patients in our community. The

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team consisted of the Director of Crisis Services and Outreach and sexual assault nurse examiners.

A one-hour PowerPoint lecture was given live by the WC-SAFE Director of Crisis Services and Outreach to medical students during their compulsory Year 4 Emergency Medicine (EM) clerkship orientation. The PowerPoint presentation was given during the first week of the 4-week EM rotation. The presentation consisted of three sections ([Supplementary Material 1](#)).

1. The first section focused on our local community, including the hospital systems and clinic sites where WC-SAFE provides forensic medical exams (FMEs) and counseling services. The lecture provides phone numbers (including the crisis pager phone number), website information, and contact persons to answer further questions about WC-SAFE.
2. The second section discussed logistics of the FME, described the basic legal ramifications of sexual assault, and outlined the resources that should be offered to patients. As presented in the PowerPoint, the FME involves EPs, law enforcement, and advocacy crisis hotlines. Patients must meet requirements and approve for the exam to be completed. Written consent must be obtained except in situations of intoxication, cognitive impairment, or medical sedation. Additional essential information includes: documentation of the patient's medical and assault history; assessment, written and photographic documentation; coordinated treatment of any injuries; and collection of forensic evidence and toxicology specimens. Treatment and follow-up referrals for pregnancy prevention, STI and Human Immunodeficiency Virus prophylaxis, and other non-acute medical conditions should be provided. Ongoing advocacy services should be offered for future care after resolution of acute medical issues.
3. The final section centered around the neurobiology of trauma. In addition to defining trauma and trauma-informed care, this portion of the presentation described a range of responses a patient might experience after the trauma of a sexual assault.

In addition, a two-page brochure including the WC-SAFE mission statement, clinic sites, phone numbers, services overview, and survivor testimonials was provided to students ([Supplementary Material 2](#)).

### Randomization

Our investigation occurred from June 2019 to January 2020. All medical students completing their compulsory Year 4 EM clerkship were included in the study except for those in December 2019 due to low enrollment. Students were assigned to either the "control" or "intervention" group based on the month they completed their EM clerkship. Students enrolled in July, August, and January (n=71 students) received the educational module during their orientation. Students enrolled in June, September, October, and November did not receive the educational module (n=76 students). This study was exempted by the Wayne State University School of Medicine Institutional Review Board.

### Objective Structured Clinical Examination (OSCE) Administration

Student performance was evaluated as a component of the EM clerkship final examination. Students in both groups completed an OSCE during which one of the standardized patients (SPs) portrayed the role of a fictional sexual assault victim ("Samantha Adams"). This case was modified from an existing OSCE case about domestic violence.

Six female SPs were trained with specific instructions and guidelines to embody Samantha Adams' presentation to the Emergency Department ([Supplementary Material 3](#)). The instruction included Samantha's demographic information, mood, clothing on presentation, employment, and details of her home life. In addition, SPs were provided a history of presenting illness and an opening statement.

### OSCE Scoring

Students' OSCE performances were scored by the six SPs using a combination of two checklists. The first was the adapted Kalamazoo Essential Elements Communications Checklist (KEECC-A), which utilizes seven elements of critical importance of communication between the physician and patient. ([Supplementary Materials 4](#)).<sup>11,12</sup>

The second checklist utilized was specific to sexual assault and trauma-informed care ([Supplementary Material 5](#)). It was designed in conjunction with WC-SAFE to test students' knowledge of the most essential elements of the physician-patient interaction acutely following a sexual assault. It was composed by the investigators of this project and several WC-SAFE employees involved with education and outreach. The checklist was content validated by the director of the clinical skills program at our institution, as well as by the SPs. All feedback was taken into consideration before its finalization and implementation.

Included on this checklist were the following six critical actions: 1) student knows to call the WC-SAFE crisis hotline; 2) student knows that a certified professional will perform the FME; 3) student mentions the time-sensitivity of the FME; 4) student informs the patient that it is not necessary to complete the FME or to press charges; 5) student offers counseling and resources; and 6) student shows concern for patient safety upon discharge. One point was awarded for each critical action met, with scores ranging from 0-5 points.

Results of both checklists were statistically analyzed using p-values reported for the Wilcoxon Rank Sum t-Test Approximation. A p-value <0.05 was considered significant.

### Post-OSCE Survey

Following the OSCE, students were sent a four-question survey using SurveyMonkey (San Mateo, CA) online survey software. The survey asked for:

1. Student identification number (not required for participation),
2. Number of WC-SAFE lectures students had received prior to their EM rotation (required),
3. Past personal experience working with victims of sexual assault (required),
4. Feedback about the experience (required).

### Results

Of the 147 students who completed the OSCE, 76 students were in the control group (51.7%) and 71 students were in the intervention group (48.3%). 93 students completed the post-OSCE survey (response rate=63.27%). Eleven chose to exclude their student identification number (functional response rate=55.78%). **Figure 1** shows the trial Consolidated Standards of Reporting Trials (CONSORT) flowchart. The control and intervention groups did not differ significantly with respect to either prior experience either with WC-SAFE lectures or working with victims of sexual assault (p=0.647) nor did they differ significantly with regards to gender (p=0.052) (**Table 1**).

**Table 3** displays the groupwise comparison of evaluation measures between the control and intervention groups using the Wilcoxon Rank Sum t-Test approximation. Regarding the KEECC-A, which had a total score of 25, there was no significant difference in scores between the control and intervention groups (p=0.9257, 95% CI [14.42, 15.58]). Mean score was 14.9±4.1 in the control group, and 15.1±3 in the intervention group

By contrast, scores for the WC-SAFE-specific checklist were significantly different between the intervention and control groups ( $p=0.0076$ , 95% CI [3.79, 4.21]). Mean score was  $3.8\pm 1.3$  for the control group and  $4.3\pm 1.2$  for the intervention group. Thus, SP evaluations of students using the validated KEECC-A showed no significant difference in communication and patient care skills between the control and intervention groups ( $p=0.926$ ), while SP evaluations of the WC-SAFE specific checklist did result in a statistically significant difference ( $p=0.009$ ).

Figure 1. CONSORT 2010 flowchart.

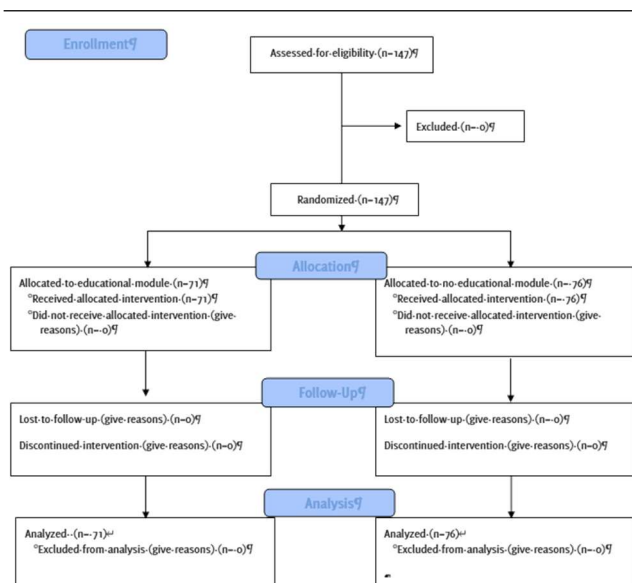


Table 1. Experience and Gender Distributions by Student Group

Characteristic	Total	Control n (%)	Experimental n (%)	p-value
<b>Experience</b>				
No prior lectures or sexual assault experience	106	54 (50.94)	52 (49.06)	0.65
One or more lectures and/or sexual assault experience(s)	38	21 (55.26)	17 (44.74)	
<b>Gender</b>				
Female	59	25 (42.37)	34 (57.63)	0.05
Male	85	50 (58.82)	35 (41.18)	

Discussion

Our findings suggest that while students in both the control and intervention groups from our institution are similarly prepared to communicate with patients, those in the intervention group were better prepared to evaluate and treat victims of sexual assault who present acutely to the ED.

Our module provides specific content to provide medical student or residents with effective training to increase their capacity in counseling and providing compassionate care to sexual assault patients. For example, although the American Board of EM’s Model of Clinical Practice includes sexual assault patient assessment and examination, as necessary topics and skills, there is a lack of recommendations for specific content needed to provide resident training.<sup>9</sup> It is plausible that lack of formal training could decrease compliance with recommended protocols, including pregnancy, STI prophylaxis and psychological referrals.

Though we worked closely with our community-based sexual assault response organization to create our module, this educational module

can be easily reproduced in medical school curricula throughout the United States. In fact, 76 of the 131 medical schools participating in the Association of American Medical Colleges (AAMC) 2018-2019 Curriculum Inventory utilized OSCEs in their Academic Level 3 clerkships.<sup>13</sup>

Standardized sexual assault-focused education and clinical reenactment is lacking in most medical school curricula.<sup>14</sup> Other studies assessing medical student understanding and application of trauma-informed care for survivors of sexual assault are limited; most are comprised of educational videos followed by a survey assessment. One study at Boston University School of Medicine provided an informational video on initial medical management, a simulated patient interview, and audio of additional interviews, in addition to a pre- and post-module questionnaire.<sup>15</sup> Another study involved a two-hour lecture, a training DVD, and questionnaire.<sup>6</sup> Though students’ scores were significantly higher on the post-module questionnaires in both studies, these studies were limited by lack of information application.<sup>6,13</sup>

Thus, although previous studies have been successful in teaching students about sexual assault and its sequelae, our educational module is unique in that it includes an OSCE to allow students to apply their knowledge and compassion to a simulated SP encounter. This provides an unmatched opportunity for students to prepare for future interactions with victims of sexual assault and to better understand trauma-informed care.

The data shows that students in the control and intervention groups were comparable in terms of sex and prior experiences with sexual assault education. However, other possible confounding variables like age, academic performance, or socioeconomic status were not assessed. It was also not assessed whether the OSCE was triggering or in any way impactful for the standardized patients. The discrepancy of standardized patients and sexual assault victims also must be noted. The standardized patients portrayed one form of response while in reality there is a diverse array of reaction a victim may have to an assault. Furthermore, the participants were quasi-randomized based on month of their EM clerkship, which may impact the validity of our results. The longitudinal impact of the educational module on the two control groups is also needed to substantiate our results.

Our checklist was created by experts in the field of sexual assault education and reviewed by members of our institutions’ clinical skills team, however it was not piloted. In addition, power analysis for statistical significance prior to the start of the study was not completed.

The integrative team of this study plans to incorporate our educational module and OSCE into the curriculum of other nearby medical schools. We hope to make variations in future modules to improve the learning experience for medical students. For example, including a victim’s advocate, forensic nurse and a physician who cares for these patients to deliver the module might make it more targeted for medical students. Providing local resources and a framework to approach patients is also important to include to encourage this education module to be used at medical schools where a local rape crisis center is not accessible.

Furthermore, as sexual assault survivors are a heterogenous group (especially in terms of their recovery needs), this curriculum may also be tailored to specific patient populations including black, Hispanic, lesbian, gay, transgender, bisexual, queer, and gender-nonconforming.

The significant difference between the two groups of students in counseling the SPs demonstrates our educational module can improve the preparedness of medical students for future encounters with sexual assault survivors. The PowerPoint presentation and OSCE assessment provides a simple and valuable approach to educate students and evaluate their interactions with victims of sexual assault.

**Table 3.** Groupwise Comparison of Evaluation Measures.

Checklist	All (n=147)		Control (n=76)		Experimental (n=71)	
	Mean (SD)	Median (Q1, Q3)	Mean (SD)	Median (Q1, Q3)	Mean (SD)	Median (Q1, Q3)
WC-SAFE	4 (1.3)	4 (3, 5)	3.8 (1.3)	4 (3, 5)	4.3 (1.2)	4 (4, 5)
m-KEECC	15 (3.6)	15 (12, 18)	14.9 (4.1)	14.5 (12, 19)	15.1 (3)	16 (13, 17)

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