

Original Publication

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A Novel, Trauma-Informed Physical Examination Curriculum for First-Year Medical Students

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Abstract

Introduction: Trauma is prevalent in the general population in various forms and has lasting effects on health. Physicians routinely examine patients who have experienced trauma, although most providers lack training in trauma-informed care, a well-established framework for providing quality care to trauma survivors. To address this gap, we implemented a novel curriculum on trauma-informed physical examination skills for first-year medical students. **Methods:** We held a large-group lecture for 148 first-year medical students and 40 faculty members to introduce a framework for a trauma-informed physical examination, using a standardized patient for demonstration. The framework included specific language and behaviors to employ before, during, and after the examination in order to enhance patients' sense of safety, control, and trust. Students then transitioned to small groups to practice performing vital signs using a trauma-informed approach, with supervision from MD faculty. **Results:** Five-point scales were used to evaluate students' knowledge gained from the session and satisfaction with the session. Overall satisfaction with the session was rated as 4.08 ($SD = 0.81$), and students felt that the session was highly effective in defining a trauma-informed physical examination (4.29, $SD = 0.70$). **Discussion:** The session was well received and effective in teaching future physicians trauma-informed skills. We offer other institutions a model for incorporating trauma-informed care into clinical skills curricula.

Appendices

- A. TIC Presentation.pptx
- B. TIC Faculty Guide.docx
- C. TIC Overview.docx
- D. TIC Pre-session Survey.docx
- E. TIC Post-session Survey.docx
- F. TIC Evaluation Rubric.docx

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

Keywords

Editor's Choice, Clinical Skills, Physical Examination, Trauma-Informed Care

Educational Objectives

By the end of this activity, learners will be able to:

1. Define trauma and trauma-informed care.
2. Describe key principles of performing a physical examination in a manner that is sensitive to all patients, particularly those with a history of trauma.
3. List specific examples of trauma-informed language and behaviors that can be utilized during the physical examination.
4. Practice taking vital signs using a trauma-informed approach.

Introduction

Trauma is prevalent in the general population in various forms; it is estimated that 89% of people living in the U.S. have experienced at least one traumatic event in their lifetime.¹ Examples of trauma include physical abuse, psychological abuse, sexual assault, intimate partner violence, adverse childhood experiences, neglect, loss, poverty, war, racism, community violence, medical trauma, natural disasters, and vicarious trauma. Multiple studies have demonstrated an association between trauma and chronic mental and physical health conditions such as substance use, depression, diabetes, and cardiovascular disease.² Additionally, trauma can affect individuals by taking away their sense of safety, autonomy, and trust. Trauma can affect patients' utilization of health care and their relationships with medical providers, further leading to adverse health outcomes.²

Trauma-informed care (TIC) is a framework with a rich and proven history of providing professionals with key tools to be conscientious of trauma and its impact when working with an individual or population.³

Despite the high prevalence and clinical impact of trauma, most health care professionals lack training in TIC. To address this gap, we created a first-of-its-kind trauma-informed physical examination curriculum for first-year medical students at The Warren Alpert Medical School of Brown University as part of their standard clinical skills curriculum. We focused on the physical examination because of its key role in the clinical encounter, as well as its potential for unintentional harm. While the physical examination can reinforce a sentiment of care and establish trust between provider and patient, it can also expose patients to shame, vulnerability, and/or triggers of prior trauma.

Our curriculum includes a trauma-informed physical examination framework that teaches first-year medical students specific language and behaviors that create a safe space in the examination room for all patients, particularly those with a history of trauma. This framework adheres to key principles of TIC, including trauma awareness, safety, patient choice, collaboration, and empowerment.^{4,5} We aimed to meet the characteristics of a trauma-informed program as outlined by the Substance Abuse and Mental Health Services Administration—one that realizes the widespread impact of trauma, recognizes the signs and symptoms of trauma, responds by fully integrating knowledge about trauma into practice, and actively resists retraumatization.⁶

To the best of our knowledge, this is the first time that a complete framework for a trauma-informed physical examination has been described. Best practices have been delineated for components of a physical examination and for examinations of specific patient populations (e.g., LGBT patients).⁷ Current literature on sensitive examination practices is limited and largely focuses on the gynecologic pelvic examination.^{8,9} Furthermore, this is the first time that TIC has entered into a standard clinical skills curriculum in undergraduate medical education. Previous TIC training programs have been implemented with residents, nurses, and other health care providers.^{10,11} Medical student training has been limited and primarily offered to small groups of participants.^{12,13} Larger-scale medical student participation in TIC education has been more broadly focused.¹⁴ We believe that providing this training to physicians early in their careers is critical for successful integration of skills, professional development, and transformation of clinical practice.

Methods

We used the following resources to teach trauma-informed physical examination skills in a small-group–based clinical skills course. We delivered our main teaching tool, the TIC presentation (Appendix A), as a large-group lecture to standardize messaging to students and faculty. To highlight correct technique for specific maneuvers in preparation for subsequent student practice, we utilized a standardized patient for demonstration during the lecture. Students then broke out into small groups for the practice portion of this session to get hands-on, timely experience. Physician faculty supervised the small groups to provide clinical context and direct feedback. We presented this material in a 3-hour course session; however, the session could be shortened and adapted for use with health care professionals of various specialties and levels of training and practice.

The clinical skills course for first-year medical students at The Warren Alpert Medical School of Brown University meets for a 3-hour session on a weekly basis. We identified one of these sessions to teach the trauma-informed physical examination. Students in this course are assigned placement in small groups of eight. Each small group is co-led by one physician faculty member and one social-behavioral science (SBS) faculty member. SBS faculty have a variety of professional backgrounds, including social work, psychology, nursing, pastoral care, and health care administration. This particular session was modeled after our typical clinical skills course structure, as follows:

- First hour: Large-group lecture on the trauma-informed physical examination.
- Second hour: Group one (four students) practiced trauma-informed physical examination skills with physician faculty, while group two (four students) practiced medical interviewing skills with SBS faculty.

- Third hour: Group one practiced medical interviewing skills with SBS faculty, while group two practiced trauma-informed physical examination skills with physician faculty.

The following resources were used to implement our curriculum:

- TIC presentation (Appendix A).
- TIC faculty guide (Appendix B).
- TIC overview (Appendix C).
- TIC presession survey (Appendix D).
- TIC postsession survey (Appendix E).
- TIC evaluation rubric (Appendix F).

Using a flipped classroom model, we asked students to review the TIC overview (Appendix C) prior to class. This document provided a brief overview of trauma and TIC, an outline of our framework for a trauma-informed physical examination, and quick tips for behaving and speaking in a trauma-informed manner. Prior to class, faculty reviewed the faculty guide (Appendix B), which gave instructions for facilitating the session.

To begin the session, students and faculty gathered in a large lecture hall for the first hour. Students were asked to complete a 7-minute survey (Appendix D) that assessed baseline knowledge of and familiarity and comfort with TIC based on a 5-point Likert scale. Once students completed this presession survey, the first author presented a PowerPoint lecture on the trauma-informed physical examination. A standardized patient sat in the front of the lecture hall on an examination table for additional demonstration of specific techniques, both during the lecture and immediately afterward, to help answer questions. The standardized patient required no particular training, and a specific standardized patient case was not used.

For the second hour of the session, students broke into their assigned small groups of eight. These small groups split further into two groups of four. Group one (four students) and an assigned physician faculty member moved from the lecture hall into clinical skills suites, which simulated real medical examination rooms. Group two (four students) moved from the lecture hall to seminar rooms with their assigned SBS faculty member. Students in the first group practiced taking vital signs on one another using a trauma-informed approach. Students in the second group practiced performing a medical interview. This medical interviewing portion was not related to the TIC curriculum specifically, nor is it considered part of this training module. A suggested guide for the 1-hour trauma-informed physical examination practice portion is as follows:

- 8-10 minutes: Student A takes student B's vital signs.
- 3-5 minutes: Feedback and discussion.
- 8-10 minutes: Student B takes student A's vital signs.
- 3-5 minutes: Feedback and discussion.
- 8-10 minutes: Student C takes student D's vital signs.
- 3-5 minutes: Feedback and discussion.
- 8-10 minutes: Student D takes student C's vital signs.
- 3-5 minutes: Feedback and discussion.
- 5-10 minutes: Students fill out postsession survey (Appendix E).

For the final hour of this session, student groups switched activities. Group one moved into seminar rooms with SBS faculty to practice the medical interview. Group two moved into clinical skills suites with physician faculty to practice vital signs using a trauma-informed approach. It was the physician faculty's responsibility to ensure that all students filled out the 7-minute survey by the end of each 1-hour practice session in order to assess their satisfaction with and the efficacy of the session.

By the time we introduced this teaching session in the clinical skills course, our first-year medical students had already learned accurate technique for taking vital signs. We selected vital signs for practice given their broad applicability and appropriateness for early learners. However, the session can easily be adapted for learners to practice physical examination skills of other organ systems. If selecting a physical examination that requires more patient exposure and draping (e.g., cardiovascular examination) or a physical examination that is considered sensitive (e.g., genitourinary examination), we recommend utilizing standardized patients for practice rather than having students practice on peers. Although no specific prerequisite is required, this curriculum is best delivered to learners who have experience and responsibility conducting one or more components of a medical physical examination.

Students are regularly assessed in our clinical skills course with 28-minute Objective Structured Clinical Encounters (OSCEs). In the OSCEs that followed this teaching session, students were asked to employ trauma-informed techniques when examining standardized patients. Physician faculty, SBS faculty, and standardized patients offered comments to students on these techniques using the TIC evaluation rubric (Appendix F). This document provided a suggested grading rubric as well as sample language for assessment. In the first year of implementing this curriculum, students received written and verbal feedback on their trauma-informed physical examination skills but were not formally graded in this category on OSCEs.

Results

Our curriculum was piloted in a workshop for 35 first-year medical students, and the results from this pilot showed that 3 months after the workshop, students' perceived familiarity with, confidence in, and frequency practicing TIC rose significantly by 85%, 62%, and 61%, respectively ($p < .001$).¹⁵ Given these results, we decided to scale the curriculum to the entire first-year medical school class at Brown University.

According to the TIC pre-session survey, first-year medical students generally felt that using a trauma-informed approach to the physical examination was important to patient care ($M = 4.3$, $SD = 0.7$) and would improve care for all patients, including those who have and do not have histories of trauma ($M = 4.9$, $SD = 0.4$; $M = 4.4$, $SD = 0.8$, respectively). In spite of believing a trauma-informed approach to the physical examination to be important, students reported low baseline levels of familiarity with the approach's key components ($M = 1.8$, $SD = 0.8$).

In the TIC post-session survey, students overall reported high levels of satisfaction with the session ($M = 4.1$, $SD = 0.8$). Students felt the presentation was highly effective in defining a trauma-informed physical examination ($M = 4.3$, $SD = 0.7$), teaching trauma-informed language ($M = 4.2$, $SD = 0.8$), and teaching trauma-informed maneuvers ($M = 4.1$, $SD = 0.8$). Students also provided qualitative feedback. Nearly half of survey respondents (49%) identified the demonstrations included in the presentation as a major strength, with the majority of these students referring specifically to the use of a standardized patient. Many survey respondents (25%) also found the use of examples of trauma-informed language and maneuvers helpful. A few students noted that highlighting behaviors that are trauma-informed juxtaposed with those that are not was especially helpful. Other strengths students cited included the presentation's clarity and focus on language.

When asked about areas of improvement for the workshop, students most often identified increasing the allotted practice time (23%), especially practice time involving a standardized patient (14%). Students found the time moderately useful for practicing both trauma-informed language ($M = 3.6$, $SD = 1.1$) and maneuvers ($M = 3.6$, $SD = 1.1$). Some would have preferred to have more time to receive feedback, as well as more time for structured small-group discussion. A few students felt that the presentation would have been more effective in small groups alone, without a large-group lecture. While some found it beneficial to incorporate trauma-informed training early in their education, others felt that the session may have made more sense once they had a higher comfort level performing a physical examination in general.

A topic related to TIC that students wanted to explore more after the workshop was what to do in situations where trauma explicitly comes up in the patient encounter (9%), including instances where a patient feels triggered or discloses trauma. Additional recommendations were to include more discussion on various types of trauma, evidence surrounding the impact of TIC on patient outcomes, additional examples of trauma-informed phrasing and techniques, and tips on how to incorporate TIC into the medical interview portion of patient encounters. Other interesting ideas for improvement included supplementing the presentation with trauma-informed physical examination videos as an additional resource to which students could refer and hearing directly from trauma survivors about their perspectives on TIC.

Discussion

Our curriculum was successful in defining a trauma-informed physical examination and describing trauma-informed language and maneuvers for an audience of first-year medical students. Students were highly satisfied with the session overall. Strengths of the program included live demonstration of specific examples of trauma-informed techniques using a standardized patient. Given the overwhelmingly positive results, we believe that our innovative, educational framework for a trauma-informed physical examination can be adapted to teaching health care practitioners in multiple settings.

A primary limitation of the workshop was time. Future iterations of the session may include more allotted time for students to practice learned skills with a standardized patient, further discussion of trauma and trauma-informed language, and optimizing the use of small groups to reflect upon and hone skills learned in a large-group setting. Another limitation of this workshop was the lack of postsession measures assessing the impact of the training on participants' attitudes and behaviors over time. We recommend that future iterations of this training adapt relevant questions from the pre-session survey for inclusion in the postsession survey to better assess the development of learners' knowledge and beliefs.

Future directions include weaving TIC into other aspects of the standard clinical skills curriculum to allow for adequate practice, discussion, feedback, and evaluation, as well as application across the spectrum of clinical skills training (medical interview, physical examination of all organ systems, counseling, oral presentation, etc.). Successful integration of TIC into the broader clinical skills curriculum would also require a thoughtful robust faculty development program on the subject. We must also further develop tools that assess objective evidence of clinical skills gained from TIC education. Finally, we need to investigate the downstream impact that TIC training ultimately has on patient care.

At our own institution, we are developing innovative approaches for further integration of TIC into early medical education. This includes inserting trauma-informed principles into standard physical examination checklists and videos, enhancing preexisting curricula for safety/violence screening and counseling, and crafting trauma survivorship cases for use in small-group role-plays. Introduction of the trauma-informed physical examination will take place in the second semester of the first year of medical school, after students have had more basic training in physical examination skills and more exposure to patients at clinical practice sites.

Our curriculum is feasible and effective in teaching medical students concrete clinical skills that integrate core principles of TIC. Using it, we hope that trauma-informed measures can become ingrained into the standard clinical practice of future health care practitioners. By creating a safer, more comfortable clinical environment that supports patient autonomy, we believe that trauma-informed physical examinations can result in improved care for all patients, including, but not limited to, trauma survivors. Given the novelty of this approach, future research is required in order to demonstrate a benefit for patients who undergo physical examinations conducted by trainees and providers using this method. We offer other academic institutions a model for teaching TIC using a physical examination–based educational framework. Moving forward, we hope this framework brings us one step closer to making TIC a mainstay in undergraduate medical education.

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Disclosures

None to report.

Funding/Support

None to report.

Informed Consent

All identifiable persons in this resource have granted their permission.

Prior Presentations

Our resource includes an educational framework for how to perform a trauma-informed physical examination (see Appendix A). The framework itself has been presented at the following venues:

Elisseou S. Trauma-informed physical examination. Workshop presented at: The Warren Alpert Medical School of Brown University; May 2017; Providence, RI.

Elisseou S. Trauma-informed physical examination. Lecture presented at: Doctoring I, The Warren Alpert Medical School of Brown University; September 2017; Providence, RI.

Elisseou S. Trauma-informed physical examination. Virtual lecture presented at: Primary Care Grand Rounds, VISN 1 (VA New England); September 2017.

Elisseou S. Trauma-informed physical examination. Lecture presented at: MedEd Talks, The Warren Alpert Medical School of Brown University; October 2017; Providence, RI.

Elisseou S. Trauma-informed physical examination. Lecture presented at: Noon Conference, Brown University Internal Medicine Residency; October 2017; Providence, RI.

Elisseou S. Trauma-informed physical examination. Lecture presented at: Advanced Health Assessment, Nursing 506, Rhode Island College School of Nursing Graduate Program; November 2017; Providence, RI.

Elisseou S. Trauma-informed physical examination. Lecture presented at: Emergency Medicine Resident Conference, Brown University Emergency Medicine Residency Program; April 2018; Providence, RI.

Elisseou S. Trauma-informed physical examination. Lecture presented at: Resident Conference, Brown University Emergency Medicine Residency Program; April 2018; Providence, RI.

Elisseou S. Trauma-informed physical examination. Webinar presented at: Innovation Community on Trauma-Informed Care, SAMHSA-HRSA Center for Integrated Health Solutions, National Council for Behavioral Health; May 2018.

Ethical Approval

Reported as not applicable.

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