

# Medical Students' Perspectives on Trauma-Informed Care Training

Ellen Goldstein, PhD; Jann Murray-García, MD, MPH; Andrés F Sciolla, MD; James Topitzes, PhD, LCSW

Perm J 2018;22:17-126

E-pub: 01/18/2018

<https://doi.org/10.7812/TPP/17-126>

## ABSTRACT

**Introduction:** Adults exposed to traumatic events during childhood commonly seek medical services, but health care practitioners hesitate to address and assess early trauma despite its known negative health effects. This study examines medical students' perspectives on a brief course that addressed the health care needs of patients exposed to adverse childhood experiences.

**Methods:** A convenience sample of 20 University of California, Davis medical students from the Summer Institute on Race and Health received 6 hours of trauma-informed care training. The course was delivered in 2-hour modules during the course of 3 days, and included lectures, discussions, and practice. A questionnaire assessing students' perspectives on training benefits, current practice challenges, and necessary resources to provide trauma-informed medical care was distributed posttraining.

**Results:** From the students' perspectives, this course increased their ability to recognize various clinical manifestations of adverse childhood experience exposure in adult patients. Students said they learned how to ask about and respond to adverse childhood experience disclosures and identify necessary resources to responsibly implement trauma-informed care in medical settings. Students identified provision of adequate resources and links to appropriate treatment identified as common challenges in providing health care to trauma-affected patients.

**Conclusion:** Study findings illustrate that trauma training can fill a knowledge gap and provide associated benefits for medical students. Initial training may pique students' interest by demonstrating the relevance of trauma knowledge in clinical practice; additional training likely is needed to support skills and confidence.

## INTRODUCTION

Exposure to a traumatic event increases risk for mental and behavioral health problems and chronic physical diseases.<sup>1-3</sup> Trauma's cumulative impact increases the body's toxic stress burden.<sup>4</sup> An increased allostatic load can underlie medical problems, which can result in higher rates of health care utilization.<sup>5-8</sup>

Trauma experienced during childhood is especially consequential.<sup>9-11</sup> There is a well-established link between early-life stressors and poor health later in life.<sup>7,12-15</sup> Adverse childhood experiences (ACEs) such as abuse, neglect, and household dysfunction have been causally linked to some of the leading causes of morbidity and mortality such as heart, lung, and liver diseases and obesity, diabetes, depression, substance use, and sexually transmitted

infections.<sup>3,13,16</sup> There is limited knowledge about the best approach to address ACEs in medical settings.

Primary care often is a crucial point of contact for people who have experienced traumatic events or ACEs.<sup>17,18</sup> However, practitioners often report discomfort in discussing trauma experiences with their patients; this unease can result in undetected and untreated trauma-related symptoms.<sup>17,19-21</sup> On the other hand, patients believe that practitioners are capable of inquiring about ACEs and are comfortable with having this information included in their medical records.<sup>22</sup> Substantive evidence shows that increasing practitioners' recognition of trauma exposure and its clinical manifestations can reduce trauma's impact on mental and physical health.<sup>6,23,24</sup> Adequate medical training can help practitioners address the recursive interactions among behavior, environment, and neurobiology that link trauma exposure to health impairments.<sup>25-27</sup>

Cultivating a setting in which it is routine to ask patients about trauma exposure can confer several benefits. First, this line of inquiry can enhance patients' perceptions of practitioners and strengthen the bond between patients and practitioners.<sup>28</sup> Studies demonstrate that people who have been exposed to trauma appreciate when they are asked to describe their experience.<sup>29,30</sup> In 2006, investigators reported that asking about abuse is both ethical and defensible.<sup>31</sup> Not asking reinforces societal avoidance, and, in some cases, can be harmful for trauma survivors. Most people with a trauma history report that they can respond to sensitive questions without experiencing substantial distress.<sup>32-34</sup>

Assessing for trauma exposure may improve medical outcomes. Kaiser Permanente's Department of Preventive Medicine in San Diego reported a 35% reduction in physician office visits when trauma-oriented questions were used compared with a control group that did not use trauma-oriented questions (which had an 11% reduction in physician visits).<sup>29</sup> In addition, there was an 11% reduction in Emergency Department visits and a 3% reduction in hospitalizations during the subsequent year for 130,000 patients undergoing a comprehensive medical evaluation that incorporated ACE and other trauma-oriented questions. Felitti and others<sup>29</sup> concluded that asking, listening, and accepting is an intervention in and of itself that can support patient health outcomes. A trauma-informed approach can help practitioners be more understanding and responsive to patients' needs regardless of the setting.<sup>35</sup> Studies demonstrate that talking with patients about adverse events and health status in a medical setting can

Ellen Goldstein, PhD, is a Postdoctoral Fellow at the University of Wisconsin-Madison Department of Family Medicine and Community Health Primary Care Research Fellowship. Email: [egoldstein5@wisc.edu](mailto:egoldstein5@wisc.edu). Jann Murray-García, MD, MPH, is an Assistant Health Sciences Clinical Professor at the Betty Irene Moore School of Nursing at the University of California, Davis. Email: [jmurraygarcia@ucdavis.edu](mailto:jmurraygarcia@ucdavis.edu). Andrés F Sciolla, MD, is an Associate Professor of Clinical Psychiatry in the Department of Psychiatry and Behavioral Sciences at the University of California, Davis. Email: [afsciolla@ucdavis.edu](mailto:afsciolla@ucdavis.edu). James Topitzes, PhD, LCSW, is an Associate Professor at the Helen Bader School of Social Welfare at the University of Wisconsin-Milwaukee and the Clinical Director of the Institute for Child and Family Well-Being. Email: [topitzes@uwm.edu](mailto:topitzes@uwm.edu).

increase patient-centered interactions and potentially reduce health impacts.<sup>36-38</sup>

Trauma-informed care competence is an emerging concept that conveys a practitioner's knowledge about trauma and its impact.<sup>39</sup> Even though physicians indicate they would benefit from dedicated training, substantial gaps remain in education and practice regarding ACEs.<sup>37,40-42</sup> Some studies have focused on ACE training for graduate-level health professionals,<sup>38</sup> residents,<sup>43,44</sup> and physicians,<sup>45</sup> yet a dearth of studies explores the value of increasing trauma-informed competence for undergraduate medical students. The present study examines the feasibility of a brief training program designed to increase medical students' ability to address the health care needs of adults exposed to ACEs. Course content development and methods for a larger follow-up study also are discussed.

## METHODS

### Participants and Setting

A convenience sample of 20 University of California (UC), Davis medical students received 6 hours of trauma training at the UC Davis Race and Health Summer Institute. The Summer Institute on Race and Health is an intensive 4-week course that is offered during the summer between the first and second years of medical school.<sup>46</sup> The Summer Institute on Race and Health consists of mini-lectures, community presentations, films, field trips, and readings from a variety of disciplines. Students explore the myriad ways in which racial and social determinants of health influence health status and interactions and health care delivery. The trauma training program was included as an integral learning component of the Summer Institute on Race and Health curriculum for 2 consecutive years during the first 2 weeks of June 2014 ( $n = 9$ ) and June 2015 ( $n = 11$ ). The training was provided in a classroom setting at the UC Davis School of Medicine on the Sacramento campus by a nursing doctorate student (EG) who was trained in clinical psychology with a specialty in mind-body interventions for trauma recovery. The combined study sample of the Summer Institute on Race and Health medical students consisted of men (40%) and women (60%) with diverse racial and ethnic backgrounds (Asian [40%], Latino [35%], white [15%], black/African American [5%], and biracial [5%]). The data collected for this study were incorporated under the broader UC Davis Institute Review Board approval for the Race and Health Summer Institute curriculum.<sup>45</sup>

### Training Content

The principal underpinnings of this training program were informed by trauma experts who convened June 1, 2012, at the Women's College Hospital in Toronto, Canada, to identify competencies that would enable practitioners to evaluate their knowledge of interpersonal trauma and trauma-informed care.<sup>47</sup> A three-step modified Delphi method was used among experts to establish consensus. The guiding foundational competencies selected for this training program included knowledge of prevalence, impact, recognition, and interventions; skills to perform culturally sensitive assessments, ask about trauma, and respond to patient disclosures; and confidence to provide sensitive care to trauma-affected patients.

These competencies can be used in a self-evaluation survey in future studies to compare pre- and posttraining changes in the domains of knowledge, skills, and confidence.

The complete trauma-informed care training program, which included lectures, discussions, and practice, was delivered in two-hour modules during the course of three days. Although each module can be presented independently, the first two modules provide the learner with a solid base from which to more securely launch into the third module. An experiential learning style of how to put the acquisition of knowledge about trauma into clinical practice was used for the third module.<sup>48,49</sup> When students take an active role in the learning process, learning is optimized.<sup>50</sup> The learning objectives for this training were 1) to understand trauma prevalence, 2) to understand ACEs and trauma's impact on mental and physical health and how they affect behavior, and 3) to gain a foundation on how to provide trauma-informed care in practice. Students also had an opportunity to practice taking trauma-sensitive assessments. The training involved six total hours of in-class and one to two suggested hours of out-of-class time. Relevant readings,<sup>29,35,51,52</sup> an interactive case-based posttraumatic stress disorder clinical assessment,<sup>53,54</sup> and a 2014 TEDMED talk with Nadine Burke Harris on how childhood trauma affects health across the lifespan<sup>55</sup> were assigned as homework between session meetings.

The first of three training modules was a lecture that focused on recognizing, understanding, and honoring the complexities associated with ACEs and trauma. Trauma was broadly defined as any event or series of events that overwhelm a person's capacity to cope and can have lasting impact.<sup>56</sup> Content addressed the broad impact of both recent and lifetime trauma on health behaviors and health outcomes. Topics included trauma definition, prevalence, and etiology; symptoms as adaptations to trauma; neurobiology of ACEs; health-risk behaviors as coping; healing mechanisms; and resources. Each student also completed the ACE Study and Resilience Questionnaires<sup>57</sup> to assess the impact of ACEs and resilience in their lives. Resilience refers to the ability to recover from a stressful event, adapt well to change, and persist in the face of adversity.<sup>58</sup> Understanding the extent and effects of one's own ACE exposure and resilience can help deepen insight into the forces that undermine and support patient health trajectories.<sup>38</sup> The limited time practitioners spend with patients is always an issue, but learning about strengths in addition to asking about trauma serves as a building block with which to create stronger relationships and care.

The second training module, also administered as a lecture, focused on implementing trauma-informed care in the workplace. The presentation consisted of elaborating on a sensitive-practice framework to better understand the ways in which certain aspects of routine care can be triggering for patients with trauma histories. Curricula content conveyed basic trauma-informed principles (ie, safety, trustworthiness, collaboration, empowerment, and respect for patient choice).<sup>39</sup> Through the lens of clinical case scenarios, students learned how to apply universal precautions in a trauma-informed manner. Universal precautions refers to a framework in

which all patients receive sensitive care regardless of whether the practitioner knows if patients have encountered traumatic events.<sup>35</sup>

The third training module provided students with experiential practice and the opportunity to role-play their clinical experience. The instructor (EG) used a trauma-sensitive assessment simulation that previously was developed in collaboration with a colleague and delivered to nursing students. Active, experiential learning in the form of simulated teaching can help improve learners' attitudes toward a given aspect of care.<sup>59</sup> The simulation was intended for learners to practice trauma assessment skills by using ACE exposure and posttraumatic stress disorder symptom screening tools at index primary care visits. Trauma-sensitive assessments can help practitioners communicate with patients about the link between past trauma exposure and current mental and physical health conditions, including the functional role that health-risk behaviors attempt to fulfill during trauma-related physiological activation.<sup>60</sup>

Initially, didactic instruction outlined a step-by-step process that included assessment of trauma sequelae and specific examples of sensitive inquiry and responses to patient disclosures. Introduction of the CARE acronym (Create safety and support; Acknowledge adaptive coping; Reframe as smart, creative, and resourceful; Encourage new and safer coping), developed by the instructor (EG), was taught to mitigate physiologic dysregulation and build inherent resilience and resource capacity for trauma-affected people who may react negatively to trauma-related inquiry. Students also viewed a short trauma narrative video designed to evoke an emotional response. Emotions can enhance the learning process by connecting people beyond cognition and adding contextual meaning to learned information. After watching the videos, students observed a live demonstration as the instructor (EG) administered a trauma-sensitive assessment in a patient simulation with a practitioner who role-played a brief script consisting of an amalgam of various patients with histories of ACE exposure and common clinical presentations. Thereafter, students also role-played a compilation of their most complex patient presentations and practiced administering trauma-informed assessments to one another. Peers provided feedback on how the role-play assessments were received to help each other identify strengths and target areas for improvement (eg, "Did the interaction feel comfortable and supported?"). Training concluded with the entire group engaging in a structured debriefing facilitated by the instructor (EG).

## Measures

### Qualitative Questions

A questionnaire assessing students' perspectives on trauma-training benefits, current practice challenges, and resources required to provide trauma-informed medical care was distributed posttraining. Five open-ended questions were used to identify strengths gained from participating in the trauma training program, commonly encountered challenges with trauma-exposed patients, situations in which the information presented in the training may have been helpful, further tools and resources needed to provide trauma-informed medical care, and further tools and resources needed by the respondent's organization to provide trauma-informed medical care.

### Data Analysis

A qualitative content analysis was performed using MAXQDA (VERBI GmbH, Berlin, Germany) software to identify primary themes.<sup>61</sup> To distinguish medical students' perspectives on training, qualitative content was independently coded. Participant responses within each question were hierarchically ordered into subcodes on the basis of the total number of participants who responded. In a subsequent joint session, themes were compared for agreement by assessing interrater reliability.

## RESULTS

Qualitative data revealed medical students' perspectives on training benefits, challenges faced when addressing trauma, and resources needed to provide trauma-informed care. Table 1 shows emergent themes of student responses and highlights the utility and relevance of the training program. Students identified these

Table 1. Qualitative student responses to survey questions <sup>a</sup>	
Open-ended questions	Participant themes (no. of responses)
Strengths gained from the training	<ul style="list-style-type: none"> <li>• Knowledge of resources and tools (3)</li> <li>• Creating patient safety and preventing retraumatization (4)</li> <li>• Practitioner training of and knowledge of recognition and understanding impact (4)</li> <li>• Practitioner confidence and comfort in discussing trauma with patients (5)</li> <li>• How to ask about trauma (6)</li> </ul>
Commonly encountered challenges with trauma-affected patients	<ul style="list-style-type: none"> <li>• Practitioner training and knowledge (1)</li> <li>• Practitioner sensitivity (3)</li> <li>• Creating patient safety and preventing retraumatization (3)</li> <li>• Adequate time (5)</li> <li>• Providing resources and links (7)</li> </ul>
Situations in which this information may have been helpful	<ul style="list-style-type: none"> <li>• Identifying victims of domestic violence and sex trafficking (1)</li> <li>• Recognizing issues of cultural trauma (1)</li> <li>• Recognizing trauma-related mental health problems such as depression and anxiety (3)</li> <li>• Recognizing trauma-related medical conditions such as somatic complaints (7)</li> </ul>
Further tools and resources needed by you to provide trauma-informed care	<ul style="list-style-type: none"> <li>• Cultural sensitivity (2)</li> <li>• Knowledge and training (3)</li> <li>• Referrals and collaborative care (4)</li> <li>• Instruction/mentorship and practice (4)</li> <li>• Screening tools and resources (7)</li> </ul>
Further tools and resources needed by your organization to provide trauma-informed care	<ul style="list-style-type: none"> <li>• Culturally sensitive health care practitioners (1)</li> <li>• Institutional and professional support (ie, time, money, dedication, effort) (1)</li> <li>• Screening tools and resources (4)</li> <li>• Referrals and coordinated collaborative care with other practitioners (ie, mental health) (5)</li> <li>• Medical curriculum and training (8)</li> </ul>

<sup>a</sup> These categories are not mutually exclusive because of possible multiple responses by a given participant. Interrater reliability was conducted to compare the degree of agreement among raters.

gains from participating in the training: Knowledge, recognition, and understanding of trauma's impact; ability to establish patient safety; and increased confidence and comfort to discuss trauma with patients. A primary skill that respondents reported having acquired from the training was how to ask about trauma; more specifically, "how to notice, ask, and talk about [trauma] in a sensitive way," which is a key feature of providing trauma-informed care.

Providing adequate resources and links to appropriate treatment were among common challenges encountered while implementing trauma-informed medical care. Students consistently identified a lack of adequate resources to appropriately treat patients with lived experiences of trauma. One student said, "At our clinics, we generally lack the kind of coordinated care that I would need to feel comfortable consistently bringing up traumatic events with patients." Students expressed the frustrations of not having enough time with patients, not having a strong mental health service network, and lack of collegial support. Another student acknowledged, "Getting to the trauma will take time and realizing that the patient will not admit everything up front. Also, trying to get health care providers to take the time to implement this [trauma assessment and screening] into their 10-minute practice is a foreseeable challenge, but now that I've gone through the training I'm not sure I could ever justify overlooking it!"

Students described situations in which training could be useful, such as when working with patients who may have experienced suspected and undiagnosed trauma. One student wrote, "When I saw a patient diagnosed with anxiety attacks, all I could do was diagnose and didn't know what else to do." Training can help practitioners recognize trauma-related medical conditions such as somatic issues and differentiate physical from mental health symptoms. One student reflected, "This ... [training] ... would have been helpful at a free clinic where I work with a young female patient. She was experiencing headaches and chest pain, but ... [I] ... could not diagnose her. Now that I think about it she might have PTSD." Another student commented, "I saw a patient in clinic whom a preceptor suspected may have had a psych/mental health issue. I didn't ask the patient about this, but [I] could have used some of these tools." Students identified vulnerable populations such as "victim(s) of domestic violence or sexual trafficking/abuse" and "immigrant/refugee population(s)" as primary candidates for trauma-informed medical care.

Cultural sensitivity, appropriate screening tools, knowledge and training, collegial support, and mentorship also were identified as tools and resources that can help practitioners provide trauma-informed care. Many students identified the need for more practice addressing difficult situations. One student admitted, "This is a good start, but I have a long way to go before this feels comfortable." Students expressed the need for "more awareness of the impact of trauma on not only mental health but physical health and chronic conditions." Students also emphasized the need for coordinated care and low-cost referrals to help them feel more comfortable initiating trauma-related discussions with patients.

Culturally sensitive health care practitioners, institutional and professional support (eg, time, money, dedication, effort),

trauma-informed medical curriculum and training, and coordinated collaborative care with other providers such as mental health professionals were identified by students as necessary tools and resources for provision of trauma-informed health care. One student said, "It would be helpful if there was a central number to call or Web site with resources and tools that we can use." Other students emphasized the need for competent health care practitioners by stating, "This needs to be incorporated into the medical school curriculum (if it is not already). We also need to figure out ways to partner better with the community to bridge the gaps in service/care."

## DISCUSSION

This study assessed the feasibility of implementing a trauma learning program for medical students and demonstrated the potential for such training to improve medical education. Findings from this study are supported by literature suggesting that brief training on the benefits associated with asking about trauma, including structured practice and feedback, can help practitioners overcome initial discomfort with trauma-sensitive inquiry.<sup>19,36,37</sup> The extant literature suggests that the majority of practitioners express discomfort about discussing trauma with patients, and they are not well prepared after participation in traditional medical education instruction and curriculum. Studies show that practitioners report feeling least confident in their ability to know what to do after they discover their patient has experienced trauma.<sup>17</sup> Although initial training can pique the interest of students by demonstrating the relevance of learning about trauma to clinical practice, additional training probably is needed to support skill and confidence gains. Targeted training can potentially address practitioner discomfort by building knowledge, skills, and confidence.<sup>42</sup>

Consistent with prior studies involving practicing physicians and residents, responses to five open-ended questions demonstrated the potential benefit and impact that trauma training can have when added to medical school curriculum.<sup>36-38,44,60</sup> From the students' perspectives, this course increased recognition of the multifaceted clinical manifestations of trauma exposure in adult patients. In addition, it helped students learn how to ask about ACEs and respond to trauma disclosures. A number of students said that one-time training offered as an elective or adjunct to the core curriculum did not provide sufficient opportunity to master trauma-informed medical care. Trauma-informed care training integrated throughout medical education and offered in specialized sessions can optimally prepare health care providers to address the consequences of trauma.<sup>43</sup>

This study reinforced the need to improve links between mental health and primary care services. This barrier or missing resource, which is needed to ethically offer trauma-informed care, also was noted in earlier studies.<sup>17,24,62</sup> One possible solution is to integrate behavioral health with primary care and to strengthen community resources related to trauma-specific counseling. Primary care clinics that offer multiple services are optimal settings in which comprehensive health care needs of trauma-affected patients can be addressed.<sup>63</sup> Further, people from underserved minority communities in which stigma often exists regarding mental illness

are more likely to be receptive to mental health services if they are integrated into primary care settings.<sup>64</sup>

Resources identified by the medical students in this study, such as low-cost referrals, coordinated care, mentorship, and practice with administering sensitive questionnaires, are needed to responsibly implement trauma-informed care in medical settings. Students also pointed to the need for workplace resources dedicated to creating a trauma-informed culture and environment. The effectiveness and sustainability of a trauma-informed clinic is dependent upon an organizational culture in which values are aligned with trauma-informed principles, practices, and policies that are supportive for staff, providers, and patients.

Several limitations of this pilot study should be noted. This study consisted of a convenience sample of second-year medical students enrolled in the Race and Health Summer Institute. These students likely are not a representative sample of medical students as a whole. Race and Health students have a strong interest in providing medical care to underserved populations, and many students were raised in similar communities. It is possible that this convenience sample may be more motivated to learn about trauma than other medical students. Also, this study relied on self-report surveys, which are subject to social desirability bias.

## CONCLUSION

Results from this feasibility study suggest that medical students who participate in trauma training can improve relevant skills and confidence in their reported ability to discuss ACEs and health effects with patients. Findings from this study elucidate the gap that trauma training can fill and the potential benefits it can confer for medical students. Incorporating trauma education into medical curricula may provide a way to integrate ACE and trauma competencies early into medical practice to better serve the health care needs of trauma-affected patients. A brief, interactive learning program for medical students may accelerate the adoption of trauma-informed medical practice; however, additional training probably is required to strengthen the confidence and skills necessary to deploy trauma-informed care. We intend to conduct a follow-up controlled study that includes a comparison group and a larger sample of diverse health care professionals in training to further evaluate outcomes of trauma-informed training in health care settings. Future research directions should assess the long-term impacts of trauma and ACE training on patient health outcomes, patient-practitioner interactions, and health care delivery. ♦

## Disclosure Statement

*The author(s) have no conflicts of interest to disclose.*

## Acknowledgements

*The authors wish to acknowledge the University of California, Davis medical students who participated in the 2014-15 Race and Health Summer Institute. Ellen Goldstein is a postdoctoral fellow with the University of Wisconsin Department of Family Medicine and Community Health Primary Care Research Fellowship, which is supported by Health Resources and Services Administration research training grant T32HP10010.*

*Brenda Moss Feinberg, ELS, provided editorial assistance.*

## How to Cite this Article

Goldstein E, Murray-García J, Sciolla AF, Topitzes J. Medical students' perspectives on trauma-informed care training. *Perm J* 2018;22:17-126. DOI: <https://doi.org/10.7812/TPP/17-126>

## References

- Dutton MA, Green BL, Kaltman SI, Roesch DM, Zeffiro TA, Krause ED. Intimate partner violence, PTSD, and adverse health outcomes. *J Interpers Violence* 2006 Jul;21(7):955-68. DOI: <https://doi.org/10.1177/0886260506289178>.
- Johnson SL, Solomon BS, Shields WC, McDonald EM, McKenzie LB, Gielen AC. Neighborhood violence and its association with mothers' health: Assessing the relative importance of perceived safety and exposure to violence. *J Urban Health* 2009 Jul;86(4):538-50. DOI: <https://doi.org/10.1007/s11524-009-9345-8>.
- Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*. 1998 May;14(4):245-58. DOI: [https://doi.org/10.1016/s0749-3797\(98\)00017-8](https://doi.org/10.1016/s0749-3797(98)00017-8).
- Friedman MJ, McEwen BS. Posttraumatic stress disorder, allostatic load, and medical illness. In: Schnurr PP, Green BL, editors. *Trauma and health: Physical health consequences of exposure to extreme stress*. Washington, DC: American Psychological Association; 2004. p 157-88.
- Arnoff BA, Hart S, Scott C, Dea R, O'Connell L, Taylor CB. Childhood sexual abuse, psychological distress, and medical use among women. *Psychosom Med* 1999 Nov-Dec;61(6):762-70. DOI: <https://doi.org/10.1097/00006842-199911000-00008>.
- Walker EA, Katon W, Russo J, Ciechanowski P, Newman E, Wagner AW. Health care costs associated with posttraumatic stress disorder symptoms in women. *Arch Gen Psychiatry* 2003 Apr;60(4):369-74. DOI: <https://doi.org/10.1001/archpsyc.60.4.369>.
- Felitti VJ. Long-term medical consequences of incest, rape, and molestation. *South Med J* 1991 Mar;84(3):328-31. DOI: <https://doi.org/10.1097/00007611-199103000-00008>.
- Newman MG, Clayton L, Zullig A, et al. The relationship of childhood sexual abuse and depression with somatic symptoms and medical utilization. *Psychol Med* 2000 Sep;30(5):1063-77. DOI: <https://doi.org/10.1097/00007611-199103000-00008>.
- Burke NJ, Hellman JL, Scott BG, Weems CF, Carrion VG. The impact of adverse childhood experiences on an urban pediatric population. *Child Abuse Negl* 2011 Jun;35(6):408-13. DOI: <https://doi.org/10.1016/j.chiabu.2011.02.006>.
- National Scientific Council on the Developing Child. *Mental health problems in early childhood can impair learning and behavior for life*. Cambridge, MA: Center on the Developing Child at Harvard University; 2008 Dec.
- Shonk SM, Cicchetti D. Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Dev Psychol* 2001 Jan;37(1):3-17. DOI: <https://doi.org/10.1037/0012-1649.37.1.3>.
- Kessler RC. Posttraumatic stress disorder: The burden to the individual and to society. *J Clin Psychiatry* 2000;61 Suppl 5:4-12.
- Bellis MA, Hughes K, Leckenby N, Hardcastle KA, Perkins C, Lowey H. Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: A national survey. *J Public Health (Oxf)* 2015 Sep;37(3):445-54. DOI: <https://doi.org/10.1093/pubmed/dfu065>.
- D'Andrea W, Sharma R, Zelechoski AD, Spinazzola J. Physical health problems after single trauma exposure: When stress takes root in the body. *J Am Psychiatr Nurses Assoc* 2011 Nov-Dec;17(6):378-92. DOI: <https://doi.org/10.1177/1078390311425187>.
- Shonkoff JP, Boyce WT, McEwen BS. Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *JAMA* 2009 Jun 3;301(21):2252-9. DOI: <https://doi.org/10.1001/jama.2009.754>.
- Neumann DA, Houskamp BM, Pollock VE, Briere J. The long-term sequelae of childhood sexual abuse in women: A meta-analytic review. *Child Maltreatment* 1996 Feb 1;1(1):6-16. DOI: <https://doi.org/10.1177/1077559596001001002>.
- Meredith LS, Eisenman DP, Green BL, Basurto-Dávila R, Cassells A, Tobin J. System factors affect the recognition and management of posttraumatic stress disorder by primary care clinicians. *Med Care* 2009 Jun;47(6):686-94. DOI: <https://doi.org/10.1097/mlr.0b013e318190db5d>.
- Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry* 1995 Dec;52(12):1048-60. DOI: <https://doi.org/10.1001/archpsyc.1995.03950240066012>.
- Green BL, Kaltman S, Frank L, et al. Primary care providers' experiences with trauma patients: A qualitative study. *Psychol Trauma* 2011 Mar;3(1):37-41. DOI: <https://doi.org/10.1037/a0020097>.
- Samson AY, Bensen S, Beck A, Price D, Nimmer C. Posttraumatic stress disorder in primary care. *J Fam Pract* 1999 Mar;48(3):222-7.
- Stein MB, McQuaid JR, Pedrelli P, Lenox R, McCahill ME. Posttraumatic stress disorder in the primary care medical setting. *Gen Hosp Psychiatry* 2000 Jul-Aug;22(4):261-9. DOI: [https://doi.org/10.1016/s0163-8343\(00\)00080-3](https://doi.org/10.1016/s0163-8343(00)00080-3).

22. Goldstein E, Athale N, Sciolla AF, Catz SL. Patient preferences for discussing childhood trauma in primary care. *Perm J* 2017;21:16-055. DOI: <https://doi.org/10.7812/TPP/16-055>.
23. Taubman-Ben-Ari O, Rabinowitz J, Feldman D, Vaturi R. Post-traumatic stress disorder in primary-care settings: Prevalence and physicians' detection. *Psychol Med* 2001 Apr;31(3):555-60. DOI: <https://doi.org/10.1017/s0033291701003658>.
24. Greene T, Neria Y, Gross R. Prevalence, detection and correlates of PTSD in the primary care setting: A systematic review. *J Clin Psychol Med Settings* 2016 Jun;23(2):160-80. DOI: <https://doi.org/10.1007/s10880-016-9449-8>.
25. Chung JY, Frank L, Subramanian A, Galen S, Leonhard S, Green BL. A qualitative evaluation of barriers to care for trauma-related mental health problems among low-income minorities in primary care. *J Nerv Ment Dis* 2012 May;200(5):438-43. DOI: <https://doi.org/10.1097/nmd.0b013e31825322b3>.
26. Salmon P. Conflict, collusion or collaboration in consultations about medically unexplained symptoms: The need for a curriculum of medical explanation. *Patient Educ Couns* 2007 Aug;67(3):246-54. DOI: <https://doi.org/10.1016/j.pec.2007.03.008>.
27. McFarlane AC. The long-term costs of traumatic stress: Intertwined physical and psychological consequences. *World Psychiatry* 2010 Feb;9(1):3-10. DOI: <https://doi.org/10.1002/j.2051-5545.2010.tb00254.x>.
28. Green BL, Kaltman SI, Chung JY, Holt MP, Jackson S, Dozier M. Attachment and health care relationships in low-income women with trauma histories: A qualitative study. *J Trauma Dissociation* 2012;13(2):190-208. DOI: <https://doi.org/10.1080/15299732.2012.642761>.
29. Felitti VJ, Anda RF. The lifelong effects of adverse childhood experiences. In: Chadwick DL, Giardino AP, Alexander R, Thackeray JD, Esemio-Jenssen D, editors. *Chadwick's child maltreatment: sexual abuse and psychological maltreatment*. 4th ed. Vol 2. Florissant, MO: STM Learning, Inc; 2014. p 203-15.
30. Topitzes J, Berger L, Otto-Salaj L, Mersky JP, Weeks F, Ford JD. Complementing SBIRT for alcohol misuse with SBIRT for trauma: A feasibility study. *J Social Work Pract Addictions* 2017;17(1-2):188-215. DOI: <https://doi.org/10.1080/1533256x.2017.1305392>.
31. Becker-Blease KA, Freyd JJ. Research participants telling the truth about their lives: The ethics of asking and not asking about abuse. *Am Psychol* 2006 Apr;61(3):218-26. DOI: <https://doi.org/10.1037/0003-066x.61.3.218>.
32. Black MC, Kresnow MJ, Simon TR, Arias I, Shelley G. Telephone survey respondents' reactions to questions regarding interpersonal violence. *Violence Vict* 2006 Aug;21(4):445-59. DOI: <https://doi.org/10.1891/0886-6708.21.4.445>.
33. Edwards KM, Kearns MC, Calhoun KS, Gidycz CZ. College women's reactions to sexual assault research participation: Is it distressing? *Psychology of Women Quarterly* 2009 Jun;33(2):225-34. DOI: <https://doi.org/10.1111/j.1471-6402.2009.01492.x>.
34. Decker SE, Naugle AE, Carter-Visscher R, Bell K, Seifert A. Ethical issues in research on sensitive topics: Participants' experiences of distress and benefit. *J Empir Res Hum Res Ethics* 2011 Sep;6(3):55-64. DOI: <https://doi.org/10.1525/jer.2011.6.3.55>.
35. Schachter CL, Stalker CA, Teram E, Lasjuk GC, Danilukewich A. Handbook on sensitive practice for health care practitioners: Lessons from adult survivors of childhood sexual abuse [Internet]. Ottawa, Canada: Public Health Agency of Canada; 2008 [cited 2017 Nov 30]. Available from: [http://publications.gc.ca/collections/collection\\_2010/aspc-phac/HP20-11-2009-eng.pdf](http://publications.gc.ca/collections/collection_2010/aspc-phac/HP20-11-2009-eng.pdf).
36. Helitzer DL, Lanoue M, Wilson B, de Hernandez BU, Warner T, Roter D. A randomized controlled trial of communication training with primary care providers to improve patient-centeredness and health risk communication. *Patient Educ Couns* 2011 Jan;82(1):21-9. DOI: <https://doi.org/10.1016/j.pec.2010.01.021>.
37. Green BL, Saunders PA, Power E, et al. Trauma-informed medical care: CME communication training for primary care providers. *Fam Med* 2015 Jan;47(1):7-14.
38. Strait J, Bolman T. Consideration of personal adverse childhood experiences during implementation of trauma-informed care curriculum in graduate health programs. *Perm J* 2017;21:16-061. DOI: <https://doi.org/10.7812/TPP/16-061>.
39. Harris M, Fallot RD. Envisioning a trauma-informed service system: A vital paradigm shift. *New Dir Ment Health Serv* 2001 Spring;(89):3-22. DOI: <https://doi.org/10.1002/yd.23320018903>.
40. Oral R, Ramirez M, Coohy C, et al. Adverse childhood experiences and trauma informed care: The future of health care. *Pediatr Res* 2016 Jan;79(1-2):227-33. DOI: <https://doi.org/10.1038/pr.2015.197>.
41. Szilagyi M, Kerker BD, Storfer-Isser A, et al. Factors associated with whether pediatricians inquire about parents' adverse childhood experiences. *Acad Pediatr* 2016 Sep-Oct;16(7):668-75. DOI: <https://doi.org/10.1016/j.acap.2016.04.013>.
42. Hamberger LK. Preparing the next generation of physicians: Medical school and residency-based intimate partner violence curriculum and evaluation. *Trauma Violence Abuse* 2007 Apr;8(2):214-25. DOI: <https://doi.org/10.1177/1524838007301163>.
43. Tink W, Tink JC, Turin TC, Kelly M. Adverse childhood experiences: Survey of resident practice, knowledge, and attitude. *Fam Med* 2017 Jan;49(1):7-13.
44. Stefanski K, Mason K. Acing education: Pilot curriculum on adverse childhood experiences. *Med Educ* 2017 Nov;51(11):1167-1168. DOI: <https://doi.org/10.1111/medu.13436>.
45. Green B, Saunders P, Power E, et al. Improving communication between trauma patients and primary care providers [abstract]. Washington, DC: American Psychological Association; 2013. DOI: <https://doi.org/10.1037/e533652013-356>.
46. TEACH-MS Program Curriculum [Internet]. Sacramento, CA: UC Davis School of Medicine; 2016 [cited 2016 Feb 13]. Available from: [www.ucdmc.ucdavis.edu/mdprogram/TEACH-MS/curriculum.html](http://www.ucdmc.ucdavis.edu/mdprogram/TEACH-MS/curriculum.html).
47. Classen CC. A self-assessment tool for providers on trauma-informed care [Internet]. Toronto, Ontario, Canada: Trauma Talks; 2012 [cited 2015 Oct 18]. Available from: [www.traumataalks.ca/presentations/pdf/8-Catherine-Classen.pdf](http://www.traumataalks.ca/presentations/pdf/8-Catherine-Classen.pdf).
48. Yardley S, Teunissen PW, Dornan T. Experiential learning: Transforming theory into practice. *Med Teach* 2012;34(2):161-4. DOI: <https://doi.org/10.3109/0142159x.2012.643264>.
49. Kolb DA. *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Prentice Hall, Inc; 1984.
50. Smart KL, Csapo N. Learning by doing: Engaging students through learner-centered activities. *Business and Professional Communication Quarterly* 2007 Dec 1;70(4):451-7. DOI: <https://doi.org/10.1177/10805699070700040302>.
51. Poole N, Greaves L, editors. *Becoming trauma informed*. Toronto, Ontario, Canada: Centre for Addiction and Mental Health; 2012.
52. Tough P. The poverty clinic: Can a stressful childhood make you a sick adult? *New York, NY: The New Yorker*; 2011 Mar 21. p 25-32.
53. Brown JJ, Weisler RH. Posttraumatic stress disorder screening practices: A 2010 Internet assessment of customary care. *Prim Care Companion CNS Disord* 2011;13(5):PCC.11m01171. DOI: <https://doi.org/10.4088/pcc.11m01171>.
54. Brown JJ. Posttraumatic stress disorder screening: A clinical practice assessment [Internet]. New York, NY: Medscape; 2010 Aug 20 [cited 2017 Oct 19]. Available from: [www.medscape.com/viewarticle/727096](http://www.medscape.com/viewarticle/727096).
55. Burke Harris, N. Nadine Burke Harris at TEDMED 2014: How childhood trauma affects health across a lifetime [Internet]. New York, NY: TED Conferences, LLC; 2014 [cited 2017 Dec 4]. Available from: [www.ted.com/talks/nadine\\_burke\\_harris\\_how\\_childhood\\_trauma\\_affects\\_health\\_across\\_a\\_lifetime](http://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime).
56. SAMHSA's Trauma and Justice Strategic Initiative. SAMHSA's concept of trauma and guidance for a trauma-informed approach [Internet]. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2014 Jul [cited 2017 Nov 30]. Available from: <https://store.samhsa.gov/shin/content/SMA14-4884/SMA14-4884.pdf>.
57. Stevens JE. Blog: Got your ace score? [Internet] ACEs Too High News; [cited 2017 Dec 4]. Available from <https://acestoohigh.com/got-your-ace-score/>.
58. Schetter CD, Dolbier C. Resilience in the context of chronic stress and health in adults. *Soc Personal Psychol Compass* 2011 Sep;5(9):634-52. DOI: <https://doi.org/10.1111/j.1751-9004.2011.00379.x>.
59. Lewis C, Reid J, McLernon Z, Ingham R, Traynor M. The impact of a simulated intervention on attitudes of undergraduate nursing and medical students towards end of life care provision. *BMC Palliat Care* 2016 Aug 2;15:67. DOI: <https://doi.org/10.1186/s12904-016-0143-2>.
60. Glowa PT, Olson AL, Johnson DJ. Screening for adverse childhood experiences in a family medicine setting: A feasibility study. *J Am Board Fam Med* 2016 May-Jun;29(3):303-7. DOI: <https://doi.org/10.3122/jabfm.2016.03.150310>.
61. MAXQDA 12 Reference Manual (v1.0) [Internet]. Berlin, Germany: VERBI GmbH; 2015 [cited 2017 Jul 6]; Available from: [www.maxqda.com/download/manuals/MAX12\\_manual\\_eng.pdf](http://www.maxqda.com/download/manuals/MAX12_manual_eng.pdf).
62. Pomerantz A, Cole BH, Watts BV, Weeks WB. Improving efficiency and access to mental health care: Combining integrated care and advanced access. *Gen Hosp Psychiatry* 2008 Nov-Dec;30(6):546-51. DOI: <https://doi.org/10.1016/j.genhosppsych.2008.09.004>.
63. Shiner B, Tang C, Trapp AC, Konrad R, Bar-On I, Watts BV. The provision of mental health treatment after screening: Exploring the relationship between treatment setting and treatment intensity. *Gen Hosp Psychiatry* 2014 Nov-Dec;36(6):581-8. DOI: <https://doi.org/10.1016/j.genhosppsych.2014.07.009>.
64. Roberts KT, Robinson KM, Topp R, Newman J, Smith F, Stewart C. Community perceptions of mental health needs in an underserved minority neighborhood. *J Community Health Nurs* 2008 Oct-Dec;25(4):203-17. DOI: <https://doi.org/10.1080/07370010802421202>.