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Trauma-informed care (TIC) is a comprehensive approach to clinical practice that evolved from the treatment of mental health and substance misuse among populations of disenfranchised, low-income, ethnic minority women in the 1980s to encompass modifications at individual provider, team and systems levels in provision of healthcare to all patients in all settings. This evolution has been buttressed by a remarkable surge of traumatic stress-related research in multiple disciplines over the last two decades. Both clinical experience and research suggest strongly that patient care should reflect an awareness of the prevalence and impact of trauma in the lives of patients and providers and should offer conditions for recovery from exposure to traumatic experiences, such as feeling safe and minimizing the risk for retraumatization.

This chapter begins with an overview of TIC from an historical perspective, describing the various definitions of TIC that have emerged over the years. The chapter also features a focused discussion on the neurobiology of fear learning, including fear acquired early in life. Research into the neural basis of fear provides an empirical context to explain the emphasis of TIC on the adaptive nature of posttraumatic stress reactions (i.e., "What happened to you?" instead of "What's wrong with you?"), normalizes the persistence of such reactions, and highlights the path to recovery and resilience. In addition, the particular relevance of TIC to provision of healthcare services to LGBT individuals is reviewed while making a case for trauma-informed *approaches* in other settings where LGBT populations receive services, such as education, foster care, and corrections. The chapter closes with a discussion of current practice gaps and a critique of some features of

TIC and resilience, understood to be cultural products of highly individualistic western, educated, industrialized, rich, and democratic societies. From a global perspective, it remains to be seen how collectivistic societies, in which the majority of humans live, can adapt and test the effectiveness of TIC to their populations, including LGBT individuals, their resources, and their needs.

Definitions of TIC

Several definitions of TIC have been advanced over the years. Recently, Elizabeth Hopper and colleagues arrived at a consensus definition from a review of the literature, which contains cross-cutting themes from previous definitions:

> Trauma-Informed Care is a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment. [1]

These cross-cutting themes are largely captured and elaborated in the Substance Abuse and Mental Health Administration's (SAMHSA's) influential definition and promotion of a trauma-informed approach to care, which is grounded on four assumptions and six principles (Table 14.1) [2]. This approach includes understanding the definition of trauma, its impact across settings, services, and populations, and appreciating the role of context and culture on individuals' perceptions and processing of traumatic events. A later publication by SAMHSA added several key elements, including the importance of trauma screening and assessment, the difference between trauma-informed (i.e., may not target trauma sequelae) and trauma-specific (i.e., designed to target trauma sequelae) services and steps recommended to build a workforce capable of implementing TIC [3].

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Table 14.1 Assumptions and principles of trauma-informed approach (SAMHSA) for human services organizations and systems [2]

Assumptions	Comments
Realize the widespread impact of trauma and potential paths for recovery	The subjective experience and overt behavior of individuals are understood as attempts at coping overwhelming events or circumstances
	Exposure to trauma plays a role in the emergence of health risk behaviors, substance use and mental disorders, as well as medical illness directly linked to (e.g., sexually transmitted infections) or mediated (e.g., cardiovascular disease) by health risk behaviors
	In addition to healthcare, opportunities for recovery are found among individuals seen in other sectors, such as schools, child welfare, criminal justice, and faith-based organizations
Recognize signs and symptoms in patients and members of the healthcare system, including staff and providers	Familiarity and recognition of signs and symptoms of traumatic exposure is achieved through timely screening and assessment, workforce development, supervision, and self-care practices
Respond by fully integrating knowledge about trauma into policies, procedures, and practices	Members at every level of the organization adapt their language, policies, and procedures to conform to the trauma-based needs of the people they serve
	Practitioners in the organization are trained in evidence-based therapies and best or promising trauma practices
	Inclusion of trauma awareness in mission statement
Resist retraumatization	Commitment to an ongoing identification and modification of organizational practices that may retraumatize staff or clients or interfere with recovery
	Maintenance of "universal precautions" (See Fig. 14.2)
Principles	Examples
Safety	The physical environment and interpersonal relationships promote a sense of physical and psychological safety, as defined by those served
Trustworthiness and transparency	Trust between clients and providers is built and maintained through operations and decisions that are transparent
Peer support	To promote recovery and healing, safety and hope, services integrate the mutual self-help and collaboration of those with lived experiences of trauma (often referred as "trauma survivors")
Collaboration and mutuality	Power differences among clients, providers, and organization members are minimized in order to promote meaningful participation in decision-making
Empowerment, voice, and choice	The primacy of the people served is affirmed, strengths are recognized and built upon, resilience and the ability to heal and recover from trauma are intrinsic to individuals, organizations, and communities
	Self-advocacy skills are cultivated and clients are given choices and supported in goal-setting
Cultural, historical, and gender Issues	The organization offers gender culture and sexual orientation-responsive services, understands the impact of historical trauma, and leverages the healing potential of traditional cultural practices

The Origins of Trauma-Informed Care

Throughout the 1980s, as homelessness, poverty, and the use of crack cocaine reached epidemic proportions in larger cities across the USA, providers of substance use and mental health services observed that childhood and adult victimization affected nearly every client they served. Among those clinicians were social worker Helen Bergman and psychologists Maxine Harris and Roger D. Fallot, founders of Community Connections, the largest private, nonprofit agency providing a full range of supportive services in the metropolitan Washington, DC, area. In a series of interviews with 99 homeless individuals, mostly African American women with serious mental illness, Harris and collaborators found extraordinarily high prevalence rates of 87% and 65%

for childhood physical and sexual abuse, respectively, and similarly high rates (87% and 76%, respectively) for adult physical and sexual assault [4]. Sadly, only 3 of the 99 women reported no experience of physical or sexual abuse in either childhood or adulthood [4]. Further analysis revealed that the degree of trauma, as measured by recentness, frequency, and number of types of exposure to violence, was positively associated with the severity of a broad range of psychiatric symptoms. The authors therefore concluded that there was an urgent need for services that would include consideration of the impact of trauma in the lives of women who are homeless [5]. Paradoxically, these women had come to view abuse and violence as normative, not their primary problem, and presented to providers with complaints of physical or mental symptoms, while accepting the psychiatric labels of "sad," "bad," or "mad" as given to them by others [6].

While acknowledging the contributions to the field of contemporary authors in diagnostic challenges [7], treatment [8], and theoretical conceptualizations regarding coping with trauma exposure [9], Harris saw the need for new treatment approaches for the women who sought help at Community Connections, whose substance misuse, and poorer mental and physical health were embedded in socio-economic disadvantage and stigmatization [6]. Because of the complexity of the relationships between trauma exposure, adaptation to trauma, and the larger socioeconomic context, treatment focused primarily on the reduction of symptoms from diagnosed posttraumatic stress disorder (PTSD) was often insufficient [10]. Moreover, these women did not have the resources to access individual therapy, were deemed too disturbed or disruptive for group therapy, and lacked the resources to sustain participation in peer-led or self-help substance recovery programs [6]. In response to these gaps, Harris and Fallot developed the Trauma Recovery and Empowerment Model (TREM), a manualized group intervention in which feminist principles are central to the intervention's empowerment goals [11]. TREM is based on four core assumptions: (1) perceived dysfunctional behaviors and/or symptoms can be legitimate coping responses to trauma; (2) women exposed to childhood trauma frequently do not develop typical adult coping skills because of the impact of trauma on development; (3) sexual and physical abuse sever core connections to women's families, communities, and sense of self; and (4) women who have been abused repeatedly feel powerless and unable to advocate for themselves [11].

Later, in considering how mental health and substance use treatment *served* individuals exposed to childhood trauma without *treating* the sequelae of that exposure, Harris and Fallot distinguished between trauma-specific services – designed to treat the psychological and behavioral sequelae of trauma – and trauma-informed services [12]. The latter, while not designed to treat trauma sequelae per se, make the necessary accommodations to be responsive to the needs of individuals who have been exposed to trauma across a wide variety of missions (e.g., physical health, mental health, employment counseling, housing supports, etc.)[12]. Harris and Fallot listed structural and organizational conditions required to support the establishment of trauma-informed systems of care, and delineated a set of core principles that should be cultivated and maintained among the people providing services (Table 14.2).

Around the same time that Bergman, Fallot, and Harris made their observations with homeless women, psychiatrists noted a similar high prevalence of histories of abuse and violence among adult psychiatric inpatients, most of which

Table 14.2 Requirements and principles of a trauma-informed system (Harris and Fallot [12])

Requirements	1. Administrative commitment to allocate resources, set priorities, and design programs that acknowledge the role that trauma plays in the presenting problems of consumers 2. Universal screening for trauma history 3. Training and education of all staff members on trauma-related issues 4. Hiring practices that target trauma champions 5. Review policies, procedures, and practices (i.e., client–provider relationships that reenact abusive dynamics) that may retraumatize clients or trigger their trauma-based coping	
Principles	Traditional approach	Trauma-informed approach
1. Understanding trauma	Understood as a single event frequently associated with PTSD impacting predictable areas of functioning (e.g., fear and avoidance of riding or driving a car after a car accident)	Repeated traumas that challenge fundamental assumptions about the self, relationships, and the world that come to define an individual's identity and impact unpredictable areas of functioning (e.g., learning difficulties in a girl repeatedly raped by a babysitter)
2. Understanding the consumer survivor	The appreciation of the whole person is blocked by the importance of the chief presenting problem	The understanding of a problem or symptom is placed in the context of the whole individual and her or his life trajectory and context
3. Understanding services	Services are time-limited, cost-conscious, and risk-aversive, and goals are circumscribed (e.g., stabilization after a crisis)	Services are strengths-based. Emphasis on skills building, promotion of autonomy, and prevention of problematic behavior in the future. Symptom management is secondary. Risks associated with interventions are negotiated between consumers and service providers
4. Understanding the service relationship	Hierarchical relationship between a professional expert and an passive recipient of services. Trust and safety are assumed from the outset of the relationship. Can replicate dynamics of childhood trauma	Collaborative relationship in which the professional expert's recommendations can be questioned and the consumer is an active participant. Emphasis on consumer choice. Trust and safety are earned over time

were not being documented in clinical charts [13]. Among these psychiatrists was Sandra L. Bloom, whose experience adapting the therapeutic community model (or "therapeutic milieu") to this population eventually led her to develop another model of trauma-informed care – the Sanctuary Model – in the early 1990s [14]. This Model is informed by four types of evidence: the neurobiology of trauma, the creation of nonviolent environments, social learning, and the study of complex adaptive systems [15]. Specifically, Bloom and colleagues recognized the challenge of helping individuals recover from trauma when a healthcare team functions in ways reminiscent of family or other systems that caused trauma in the first place [14]. To the extent that the traumatizing system abused power, induced helplessness, manipulated information, and discouraged the expression of positive emotions while engendering negative emotions such as shame and fear, the new approach would mitigate these abuses by distributing power among patients and team members, offering options and choice, sharing information freely, maintaining safety, and avoiding retraumatization [14]. However, in Bloom's opinion, children who grow up in dysfunctional, traumatic environments often understand these systems and behaviors as normative and are more likely to propagate that abuse on themselves or others into adulthood even when the abuse causes additional suffering. As noted by Bloom, "the more dangerous the environment is and the more normalization of that environment has been mandatory to survival, the greater the resistance to change" [14].

In the Sanctuary Model, the view of mental illness itself shifted from a "sickness model" to an "injury model." The injury model encompasses the meaning of symptoms, the role of the patient, and treatment goals. Instead of equating problems to psychopathology, behavioral adaptations were viewed as stemming from developmental trauma; instead of a passive patient meeting a sickness expert, a person presenting for care was considered to be actively seeking to learn about the nature of their injuries and recovery; instead of a magical cure, the goal of treatment was to work on rehabilitation, even if this meant learning to live with limitations [14]. For Bloom, violence "[threatens] the integrity of attachment relationships" and "is broadly defined as anything that hurts the self or the community," while safety includes a moral dimension that "is an attempt to reduce the hypocrisy that is present, both explicitly and implicitly, in our social systems" [14].

In its latest iteration, published in 2013, the Sanctuary Model places even greater emphasis on organizational culture, making a distinction between trauma-organized systems (i.e., those that continuously reproduce the conditions that traumatize its members) and developmentally grounded trauma-informed systems [16]. According to Bloom, "developmentally grounded" refers to a system built around the implications of attachment theory and neurobiology. Here Bloom expands the traditional view on attachment in psychologically intimate dyads to the relationships that develop among all members of a system or organization. Borrowing computer terminology, Bloom equates metaphorically the attachment relationships that characterize organizational culture to an "operating system" and trauma to a "virus" infecting a trauma-organized organization [16]. The trauma-informed healthy system she proposes entails the commitment to address seven "universals": (1) the inevitability of change, (2) managing power, (3) envisioning safety, (4) emotional intelligence, (5) learning all the time, (6) the constancy of communication, and (7) justice and the common good [16].

Although Bloom's Sanctuary Model has limited empirical evidence [17–19], it inspired what is arguably the most widely known dictum of TIC: a shift from the symptom-oriented, detached questioning of "What's wrong with you?" to the narrative-based, compassionate inquiry of "What happened to you?" [20].

Toward a Synthesis: Raja's Pyramid Model of Trauma-Informed Care

In a scoping review of the literature of TIC in medical settings, Raja and colleagues identified core principles of TIC in medical settings and characterized how providers can apply these principles to maximize patient engagement and empowerment [21]. Principles were divided into two domains: "universal trauma precautions" and "trauma-specific care." Because the former are foundational – used with all patients and in all settings – while the latter are appropriate in a smaller percentage of specific circumstances, these investigators arranged the core principles of TIC into a pyramid, further subdividing the two aforementioned domains to create a total of five key clinical strategies (see Fig. 14.1) [21].

A. *Universal trauma precautions*. The first domain in the pyramid contains two strategies – patient-centered care and cultural competence/humility and understanding the health effects of trauma. Individuals exposed to trauma are frequently sensitive to and react emotionally (e.g., with fear or avoidance) to the power differential that is ubiquitous in healthcare settings and encounters with providers. *Patient-centered* communication and behavioral practices [22] – care that is respectful and responsive to patient beliefs and needs in clinical decision making – are well suited to address such emotional reactions by engendering rapport, trust, and safety. To increase the applicability of patient-centeredness to diverse populations, the concept of *cultural competence*
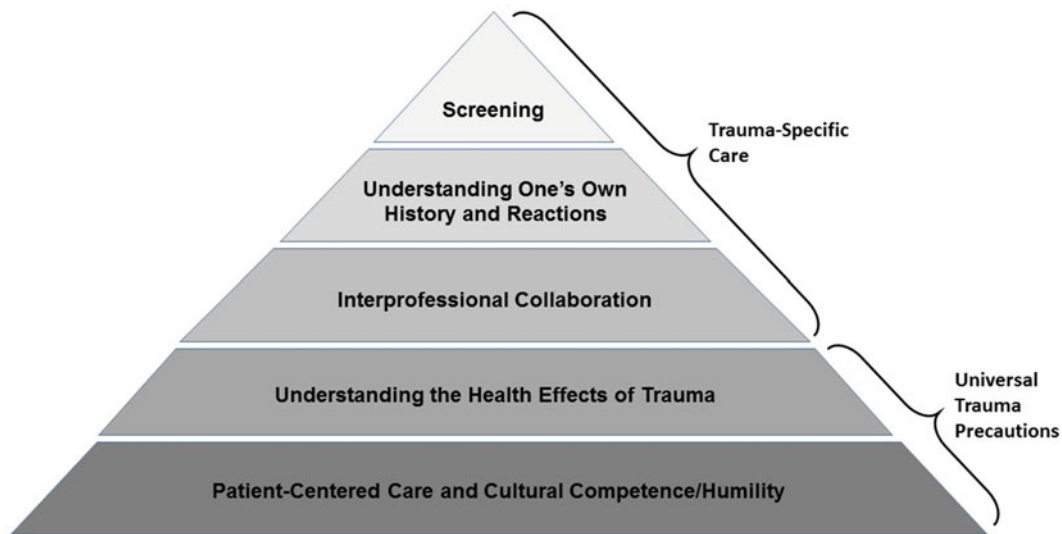
Fig. 14.1 The pyramid model of trauma-informed care. The base of the pyramid is comprised of "universal trauma precautions," the knowledge, skills, and attitudes of healthcare providers that increase the engagement – and ultimately health outcomes – of patients with trauma histories, without requiring screening or knowledge of trauma exposure. The "trauma-specific care" domain is depicted above this base and correspond to the strategies in which healthcare providers engage when a patient's trauma exposure history is known. The shape of the figure represents the recommendation that universal trauma precautions should be used with all patients, while trauma-specific care should be adopted with a smaller percentage of patients and clinical situations. Having screening for trauma on top of the pyramid reflects the fact that this topic is debated and it requires training and appropriate resources for patient referral (Reproduced from Raja et al. [21], with permission from Wolters Kluwer Health, Inc.)

– the behaviors, attitudes, and institutional policies required to effectively provide cross-cultural care – is also included at the foundational level [23]. With its explicit commitment to redressing power imbalances in the patient–provider dynamic and community-based care and advocacy [23], *cultural humility* can synergize patient-centered care, especially for patients from socially disadvantaged or stigmatized backgrounds. Such patients are not only at higher risk for exposure to traumatic events across the lifespan but also are detrimentally affected by microaggressions [24, 25], defined as "indignities, slights or insults that send a message of derogatory or negative status to members of marginalized group" [26]. The second strategy in the universal trauma precautions domain requires an *understanding [of] the health effects of trauma*. Providers commonly feel unprepared to work effectively with patients presenting with psychiatric comorbidity and health risk behaviors in so-called difficult encounters because of the negative attitudes toward or limited training in dealing with psychosocial aspects of patient care [27]. Providers may feel better able to handle this common clinical presentation if they keep in mind the health effects of trauma, which include increased prevalence of health risk behaviors such binge drinking, heavy drinking, smoking, risky HIV behavior as well as medical-psychiatric comorbidity [28]. By linking childhood adversities and self-destructive behaviors, essentially shifting from "what's wrong with you?" to "what happened to you?" perspective, providers may be more likely to empathize with patients and minimize patient shame and maladaptive behaviors. Training programs can leverage this strategy with patient-centeredness and motivational interviewing techniques.

B. *Trauma-specific care*. The second domain in the pyramid includes three strategies: interprofessional collaboration, understanding one's own history and reactions pertaining to trauma, and trauma-screening practices. *Interprofessional collaboration* in this model underscores the importance of cultivating relationships with other providers, knowledge of their expertise or scope of practice, and education regarding trauma-specific services and resources to which patients can be referred. This includes developing a thorough understanding of professional roles and responsibilities, such as mandated reporting laws. *Understanding one's own exposure history and reactions to trauma* underscores the need for clinicians to acknowledge their own vulnerability as human beings to trauma and its sequelae, including exposure during the course of professional work to so-called vicarious or secondary traumatic stress. Secondary traumatic stress (also called "compassion fatigue") and vicarious traumatization are distress reactions in care providers who, as a result of their work, are exposed to disturbing images, intense affect, and intrusive memories recounted to them by their patients or clients. Although

conceptually related, secondary traumatic stress emphasizes symptoms of PTSD while vicarious traumatization highlights changes in cognitive schemas in providers about the self, relationships, and the world. Sitting atop the pyramid, is *screening* for traumatic events. Whether or not and how to offer such screening is a complex decision for both individual practitioners and healthcare systems, and involves careful consideration of patient preferences, the scope of screening (universal versus case-finding) and the availability of resources to which patients who screen positive may be referred.

The Relationship Between the Neurobiology of Trauma and TIC

Research on the neurobiology of trauma in early life has progressed rapidly during the last three decades. Due to space constraints, this section will focus on the manner in which knowledge of threat conditioning and extinction (see Chap. 4 for more detail) informs TIC's emphasis on conveying a sense of safety and avoiding retraumatization. Interested readers can glean additional support of TIC tenets from recent comprehensive reviews in fields such as genetics and epigenetics [29], cellular aging [30], neuroendocrinology [31], neuroimmunology [32], and neuroimaging [33]. By documenting the automatic and nearly instantaneous sequelae of early life trauma in molecular and physiological processes, findings from these fields suggest that the persistence of neurobiological changes long after trauma exposure cannot be reversed simply by individual determination or effort. Indeed, brain systems underlying the executive control necessary to consciously alter behavior to become more adaptive are those that are most compromised by childhood trauma. Appreciation of this body of work may thus facilitate expressions of empathy from providers and the general public and decrease the ongoing discrimination experienced by patients with trauma-related problems. For people exposed to childhood trauma, these research findings may foster development of self-compassion and self-forgiveness through metacognitive processes in which they see themselves as individuals with their own strengths and resilience. Readers may also be interested in sweeping attempts at cross-disciplinary syntheses [34–36] as well as clinical applications of this neurobiological research [37, 38].

The learning and extinction of defensive behaviors evoked by discrete and acutely threatening stimuli and the modulation of those behaviors according to context depend on highly interconnected brain structures in the so-called "fear" circuit. This system detects, interprets, and guides the behavioral response to fear. In PTSD, this circuit reorganizes such that the response to threat is no longer contextual and appropriate to certain threatening stimuli; rather, it is a prolonged and generalized response that shuts down other brain systems important for appropriate behavioral responses and adaptations to emotional stimuli. The circuit includes, among other structures, the hippocampus, amygdala, and medial prefrontal cortex [39]. While the amygdala appears to be crucially involved in detecting and responding to threatening stimuli, the ventromedial prefrontal cortex and the hippocampus appear to be essential in the process of learning and remembering when stimuli that predicted threat before no longer do so [39]. In maladaptive responses to threat like those that occur in PTSD, heightened amygdala activity amygdala and aberrant function of the medial prefrontal cortex and hippocampus are thought to underlie deficits in response discontinuation and contextual processing (i.e., disregard of safety signals) [39]. Figure 14.2 depicts a schematic representation of this circuit.

The anxious anticipation of day-to-day events that evoke previous traumatic experiences (commonly referred to as "triggers") and a low threshold for recurrent posttraumatic "fight, flight, or freeze" reactions are pervasive among individuals exposed to trauma. Many may not know what their triggers are until they encounter them and, even then, may not be aware of their reactions to these triggers. For others, their sense of helplessness can be compounded by knowing that their triggers seem innocuous to most people, and their reactions to them inappropriate. These anecdotal observations can be related to a neuroimaging study of healthy adults exposed to childhood maltreatment. For example, subjects showed activation of the amygdala in response to sad faces presented to them *subliminally* (i.e., the pictures were shown too briefly to permit conscious recognition), and the amygdala activation was positively related to the severity of reported maltreatment [40]. This finding corresponds to the fast, subcortical pathway of threat depicted in Fig. 14.1.

Research [41–44] and anecdotal reports [45] have consistently shown that individuals with trauma histories can experience severe posttraumatic reactions in response to prevalent aspects and practices of healthcare environments that serve as reminders of previous trauma. For example, it has been documented for some time that anxious individuals require significantly higher doses of anesthetics for induction and maintenance of anesthesia during surgical procedures [46]. More recently, a multicenter, prospective cohort study found that accidental awareness during general anesthesia was associated with both the incidence and
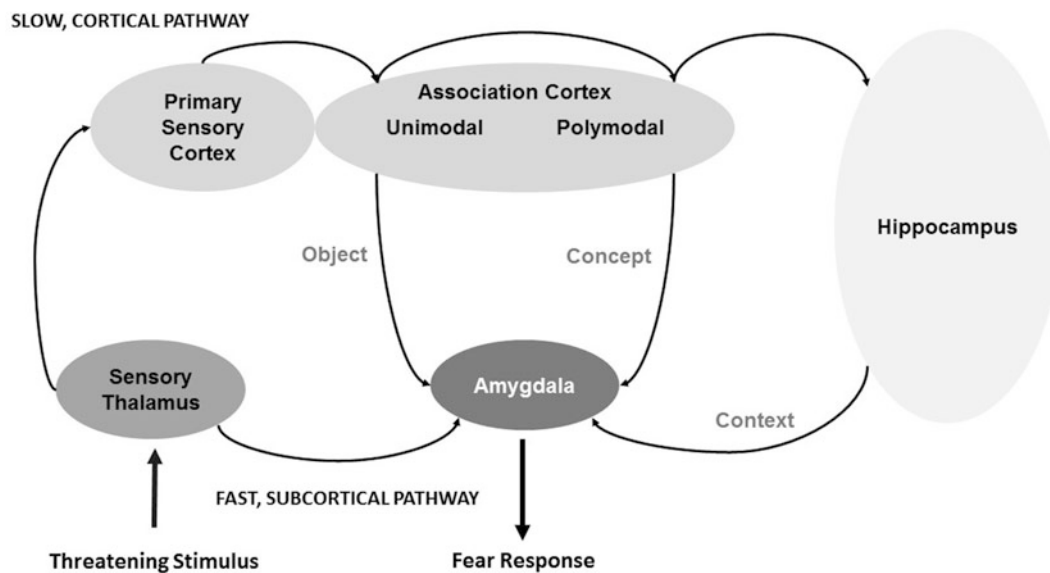
Fig. 14.2 The two pathways of responding to threat. In the fast subcortical pathway, threatening stimuli are routed directly to the amygdala from the sensory thalamus. This is an unconscious process that involves implicit memory systems. In the slow, cortical pathway, threatening stimuli engage higher order cognitive processes that provide the amygdala increasingly more complex appraisal of the stimuli, including the explicit memory context provided by input from the hippocampus (Adapted from The Brain from Top to Bottom, The Two Pathways of Fear, available at http://thebrain.mcgill.ca. The content of the site is under copyleft)

severity of PTSD symptoms 2 years postoperatively, and that prior history of PTSD and perioperative dissociation were independent predictors of PTSD after surgery [47]. A case report of two young male veterans with a history of PTSD who underwent elective surgery contrasts the outcomes of trauma-uninformed and trauma-informed care [48]. While recovering from anesthesia, one patient exhibited flashbacks in the form of a prolonged agitated delirium that did not respond to several attempts to reorient him; indeed, he believed he was in battle and that his buddies needed his help [48]. The other patient had an uneventful emergence from anesthesia after the team followed several trauma-informed modifications. These included avoiding touching the veteran's upper body when waking him up and instead using a "foot touch" (the latter being less likely to trigger a defensive reaction than the former), the use of clonidine (a medication that decreases the release of norepinephrine associated with the fight, flight, or freeze response), and discharge instructions that included referral to a primary care-psychiatry collaborative program [48].

The central argument of this section is that knowledge of the cross-species neural [49] and genetic basis of the fear circuit [50], fear conditioning and extinction [51], stress sensitization [52], and fear generalization [53] makes understandable – indeed, "normalizes" – the distress reactions that patients with trauma histories can experience in response to healthcare practices and features in the physical environment. This normalization is also aided by research showing that fear conditioning can be established or elicited without conscious awareness of being exposed to a threatening stimulus, as evidenced by experiments in patients with hippocampal damage and subliminal exposure [54].

Abnormalities in the acquisition and extinction of responses to threat in PTSD patients have received the most research attention. In contrast to trauma-exposed subjects without PTSD, those with PTSD exhibit both enhanced conditioned responses to a trauma reminder during acquisition as well as impaired extinction [55]. Extinction of a learned threat response depends on the intactness of at least three brain regions, including the prefrontal cortex, hippocampus, and amygdala [51]. Integrity of these structures ensures that the environmental context in which an individual encounters a threatening stimulus is encoded [49]. A meta-analysis of neuroimaging studies found evidence of structural changes of these brain regions in individuals with PTSD [56]. Summarizing a large body of evidence, a recent review concluded that "people suffering from PTSD have difficulty learning and remembering that stimuli that used to predict threat [are] no longer [predictive]" [57]. Since stress itself can impair extinction of conditioned fear responses and PTSD is associated with heightened stress, the conditions for a vicious cycle that perpetuates symptoms and undermines treatment efforts are thus established [58].

The changes in brain structures and failure to discriminate between threat and safety cues documented in PTSD patients have also been observed in maltreatment-exposed

children without PTSD [59]. Furthermore, both animal and human models show that early life stress is associated with early appearance of the adult mode of extinction of responses to threat [60]. In contrast to the infant extinction mode, which leads to a permanent reduction in the threat response, the adult system is characterized by greater relapse of fear response after extinction training [60]. These observations are consistent with evidence that exposure to childhood adversities, especially when associated with adult revictimization or trauma, is associated with subsequent development of PTSD [52].

In summary, research on the neurobiological basis of trauma provides a theoretical foundation for some of the tenets (safety) and principles (resist retraumatization) of trauma-informed approaches (Table 14.2) and suggests modifications of practices and the physical environment in healthcare. The impact of these modifications on patient experience, satisfaction with care, and health outcomes can subsequently be empirically tested.

TIC and Trauma-Informed Approaches Outside Healthcare

Besides healthcare settings, individuals exposed to trauma are overrepresented in other human services systems and, consequently, the tenets of trauma-informed approaches may be of benefit to consumers and providers in many settings. Children and adolescents exposed to trauma interact with multiple systems, and members of the National Child Traumatic Stress Network (NCTSN) have made recommendations to make the education, healthcare, corrections, juvenile justice, first responders, and child welfare systems more trauma-informed [61]. In addition to reviewing the literature supporting the adoption of trauma-informed approaches for each of these systems, NCTSN made seven recommendations to help independent practitioners interact with clients and coordinate services from a trauma-informed perspective [61]. The recommendations are:

1. Promote the integration of trauma-focused practices across formal mental health treatment and other service sectors.
2. Identify changes in practice that providers and policymakers in each system view as important to achieving outcomes that matter to them (e.g., school attendance, grades, recidivism, physical health outcomes, service utilization, cost-effectiveness).
3. Rigorously evaluate the benefits of implementing trauma-informed care.
4. Introduce trauma-informed services into the core education and training for every child- and family-serving system.

5. Provide trauma-informed care and traumatic stress interventions early and strategically.
6. Replicate specialized evaluation, assessment, and treatment services provided by programs within the NCTSN.
7. Emphasize interdisciplinary collaboration and relationship-building.

These recommendations have improved care in a variety of settings [62–64]; interested readers are referred to these references for further information.

Another system highly impacted by trauma is the corrections system. A comparative study found a 48% prevalence rate of PTSD in a prison sample, while the corresponding rate in the general population was 4% [65]. Prevalence rates of PTSD represent only one aspect of trauma burden in this population, as the prevalence of childhood sexual abuse in the prison population was 70% for women and 50% for men [65]. The high trauma burden found in this study has been replicated in various samples of incarcerated individuals, such as women [66], youth [67], and older adults [68]. Additionally, a history of childhood maltreatment has been shown to be associated with disciplinary actions while in custody, especially for women [69]. Given the pervasive risk of violence and further retraumatization during incarceration, and the fact that systems of incarceration are separated based on biologic sex, a model of trauma-informed correctional care has been proposed that considers gender-specific responses to trauma [70]. According to this model, treatment for cisgender women needs to emphasize empowerment, emotion regulation, and safety, considering that internalizing behaviors (e.g., anxiety, social withdrawal, and somatic concerns) are more common in cisgender women. For cisgender men, on the other hand, treatment needs to emphasize feelings, relationships, and empathy since externalizing behaviors (e.g., bullying, substance use) are associated with cisgender men. It is worth noting that this model adopts a binary view of gender and, for a gender-based TIC model to be truly comprehensive, transgender individuals must be included. As in trauma-informed approaches in healthcare, the authors of the proposed model argue that trauma-informed principles may be helpful even in the absence of trauma-specific clinical interventions available to inmates [70]. The model also includes specific recommendations to increase buy-in from leaders and administrators, group exercises for staff (e.g., demonstrating how to sensitively talk inmates through pat downs and searches) and encouraging the sharing of stories of trauma healing while keeping trauma details to a minimum to avoid triggering of staff's own traumatic memories or vicarious traumatization [70]. Miller and Najavits' model also considers the integration of trauma-specific treatment, which others have extended to community-based programs

available to inmates upon reentry [71], which have promising empirical support [72]. The literature on trauma-informed interventions for incarcerated women has been systematically reviewed, revealing decreases in PTSD symptoms and other outcomes such as drug use and reincarceration [73].

SAMHSA has also published specific recommendations for a trauma-informed criminal justice system and its Gather, Assess, Integrate, Network, and Stimulate (GAINS) Center for Behavioral Health and Justice Transformation offers apropos training for criminal justice professionals (samhsa.gov/gains-center).

TIC for LGBT Healthcare and the Promotion of Wellness Among LGBT Individuals and Communities

Although the topic remains understudied, especially among bisexual, transgender, and gender nonconforming individuals, a meta-analysis of school-based studies showed that sexual minority youth are at increased risk of exposure to abuse and violence, with odd ratios of 1.2, 1.7, 2.4, and 3.8 for physical abuse, violent threat or assault, missing school because of fear, and sexual abuse, respectively [74]. Using the Adverse Childhood Experiences (ACE) Study scale in a probability-based sample from three US states (Maine, Washington, Wisconsin), researchers found a higher rate in the number of reported ACEs as well as increased odds of exposure to each ACE category among LGB respondents [75]. The ACE Study scale inquires about five categories of childhood maltreatment and five categories of household dysfunction (familial mental illness, substance abuse, incarceration, parental discord, and domestic violence) [76]. Likewise, a systematic review of stressful childhood experiences including probing for household dysfunction in addition to maltreatment showed that nearly one in two LGBT individuals reported childhood emotional abuse in both probability (47.5%) and nonprobability samples (48.5%) [77].

Predictably, given that sexual minority groups have an increased likelihood of exposure to early life adversities, prominent disparities have been documented in PTSD prevalence between LGBT and heterosexual populations. Using data from a representative US sample and heterosexual adults without same-sex attraction or partners as comparison, researchers showed that LGB and heterosexual respondents with same-sex sexual partners had significantly elevated risk of exposure to nearly all traumatic events, especially childhood maltreatment and interpersonal violence (risk was not elevated among heterosexuals with same-sex attraction but no same-sex sexual partners, perhaps due to lower stigma levels) [78]. The adjusted odd ratios for

PTSD onset were 2.03, 2.06, and 2.13 for lesbian and gay, heterosexual with same-sex sexual partners and bisexual participants, respectively [78]. Further insight into how gender nonconforming behaviors elevate risk for lifetime PTSD has been shed by the Growing Up Today Study, a US population-based longitudinal cohort of children of the Nurses' Health Study II participants. PTSD prevalence was highest among bisexual women (26.6%) and lesbians (18.6%), followed by mostly heterosexual women (13.5%) and men (11.8%) [79]. Between 32.3% and 48.4% of the variance in PTSD risk among sexual minorities in this sample (heterosexual with same-sex contact, mostly heterosexual, bisexual, lesbian/gay) was explained by childhood abuse, which in turn was partly explained by gender nonconformity [79].

LGBT individuals are not only targets of acts of abuse and violence by heterosexual individuals but also their own romantic and sexual partners. A systematic review of US studies of men who have sex with men revealed similar or higher rates of intimate partner violence (IPV) to those documented among presumed heterosexual women [80]. Results from a systematic review of IPV in self-identified lesbians found multiple limitations in the literature, including convenience samples and near-absent consideration of the role of homophobia and heterosexism in the emergence of violence or abuse. Victimization rates of any type of IPV ranged widely from 9.6% to 73.4%, and perpetration rates similarly ranged widely from 17% to 75% [81]. Considering probabilistic samples only, lesbians report lower rates of IPV than bisexual women, whose perpetrators are generally their male partners [81]. In another systematic review, LB women were at higher risk for lifetime and childhood sexual assault than GB men, although the authors cautioned that further studies are needed that disaggregate gay/lesbian from bisexual individuals [82]. Similar to adults, a cross-sectional, school-based study in three US states (Pennsylvania, New Jersey, and New York) showed that, in comparison to heterosexual youth, sexual minority adolescents reported significantly higher rates of all types of dating victimization and perpetration experiences, with the highest rates reported by transgender youth [83].

In addition to various forms of interpersonal violence, indirect forms of chronic stress in the lives of LGBT individuals have been the subject of systematic studies, mostly inspired by the Minority Stress Model [84, 85]. Undeniably, structural stigma, defined as "societal-level conditions, cultural norms, and institutional practices that constrain the opportunities, resources, and wellbeing for stigmatized populations" [86], is a source of chronic psychological stress to LGBT populations, often lying outside conscious awareness [87]. Conceptually, however, structural stigma does not meet a widely accepted definition of trauma that emphasizes the *individual experience* of an

event, series of events, or set of circumstances [2]. Nevertheless, as is discussed in more detail in Chap. 4, structural stigma has been shown to be associated with a blunted hypothalamic-pituitary-adrenal axis response in LGB young adults [88], which has also been associated with PTSD [80] and environmental [81] and psychological distress [82]. Moreover, Hatzenbuehler and colleagues have shown that sexual minorities living in communities with high levels of structural stigma exhibit a shorter life expectancy of approximately 12 years due to an excess of suicide, homicide, violence, and cardiovascular disease [86].

The TIC implications of the increased prevalence of abuse, victimization, and structural stigma observed among LGBT populations have been the subject of multiple lines of research. Among the earliest is the association between childhood sexual abuse (CSA) and HIV infection. During the early 1980s, data from a small sample of adult men with a history of CSA (partnered with women at the time of the study) showed that most reported preoccupation with sexual thoughts, compulsive masturbation, and multiple female and male sexual partners [89]. A few years later, a longitudinal study of heterosexual men and women attending an HIV testing and counseling program found that 28% and 15% of the women and men, respectively, reported a history of CSA, and were four and almost eight times more likely, respectively, to have engaged in sex work at some point in their lives [90]. Participants reporting CSA were also more likely to report sex with anonymous partners, a higher average number of partners in a given year and to abuse substances [90]. These findings were replicated in a sample of gay men from three large urban centers in the USA who reported significantly increased HIV risk behaviors, including unprotected anal intercourse, being paid to have sex, positive syphilis serology, and being HIV-positive [91]. Studies since then have been the subject of a meta-analysis indicating that men who have sex with men (MSM) with CSA history are almost twice as likely to engage in recent unprotected anal intercourse and 1.5 times more likely to be HIV-positive as compared to MSM without such a history [92]. Studies of HIV-positive women have also been the subject of a meta-analysis, which found that recent PTSD is five times more common and IPV more than twice as common than in HIV-negative women in the general population [93].

A systematic review of studies of HIV-positive men and women indicated an increased risk for PTSD and poorer adherence to antiretroviral regimens in these populations [94]. Strikingly, in a cross-sectional study of HIV-positive biological and transgender women, those who answered affirmatively to a single screening question regarding exposure to abuse or violence in the past month had over four times the odds of antiretroviral failure (defined as having a detectable viral load or ≥ 75 copies/mm) as compared to women with negative trauma screening [95]. The recursive interactions between trauma, PTSD, substance use disorder, and HIV risk [96] have led more recently to a syndemic conceptualization of the intersecting epidemics of trauma and HIV infection calling for a TIC approach [97], as well as delivery of trauma-specific therapies [98] and trauma-informed risk reduction interventions [99–101].

Mirroring results from the ACE Study, which found a dose-response relationship between ACE score and health risk behaviors [102], a survey with representative samples in three US states (North Carolina, Washington, and Wisconsin) found that sexual orientation was no longer associated with health risk behaviors after adjusting for the increased prevalence of ACEs in sexual minority individuals compared to heterosexuals [103]. Similarly, a large, nationally representative survey found that the increased risk of exposure to early life adversity explained between 10% and 20% of the increased prevalence of tobacco, alcohol and drug use, and psychiatric symptoms among LGB youth versus heterosexual comparisons [104]. Besides family-based childhood adversities, school-based and neighborhood-based abuse and violence have an impact on health risk behaviors as well. A survey of 9th through 12th grade students in Massachusetts and Vermont compared reports of threat or injury with a weapon or deliberately damaged or stolen property while at school among LGBQ and heterosexual youth during the previous year. LGBQ youth reporting high levels of victimization endorsed more health risk behaviors, while health risk behaviors of LGBQ youth who reported low levels of victimization were similar to their heterosexual peers [105]. Another study linked suicidality and relational and electronic bullying reported by sexual minority youth to the rate of neighborhood-level assaultive hate crimes directed at LGBT individuals [106, 107]. Consistent with the increased health risk behaviors reported by LGB and LGBQ youth exposed to violence, a survey of adults recruited at a crowdsourcing internet jobsite showed that maltreatment by adults and peer bullying explained the disparate rates of lifetime physician-diagnosed physical health conditions among sexual minority individuals compared to heterosexuals [108].

In summary, studies reviewed in this section demonstrate that LGBT individuals exhibit a substantially elevated risk of exposure to trauma and that this exposure is highly consequential to physical and mental health outcomes. Additionally, blunted HPA axis reactivity –one of the mechanisms linking trauma exposure to health outcomes– has been observed in sexual minority individuals exposed to environments punctuated by high structural stigma, which may also underlie the association between structural stigma and early death due to cardiovascular causes [109]. This finding argues for considering structural stigma as a context

that not only enables individual exposure to violence and abuse, but possibly amplifies neurobiological changes underlying the deleterious impact of trauma on health.

Together, epidemiological, preclinical, and clinical research makes a compelling case for addressing LGBT healthcare needs and well-being at both individual and population health levels through trauma-informed policies and practices. Those policies and practices should be the target of systematic evaluation and empirical investigation in the future. In the meantime, the studies reviewed comprise a solid theoretical foundation for the design and development of trauma-informed prevention, early intervention, and treatment efforts to address the glaring health disparities affecting LGBT populations.

Evidence of the Effectiveness of TIC

Although TIC formulations have evolved since the 1980s, empirical testing of professed benefits remains limited to date. One of the most ambitious efforts in this direction was the Women, Co-occurring Disorders, and Violence Study (WCDVS), a quasi-experimental nine-site longitudinal study that compared the effectiveness of usual care to comprehensive, integrated, trauma-informed services for women with co-occurring substance use and mental health disorders and a history of physical and/or sexual abuse [110]. Primary endpoints in the WCDVS study were alcohol and drug use, general psychological distress symptoms, and posttraumatic symptoms; secondary outcomes included service costs. Importantly, consumers of mental health services, survivors of trauma, and women in recovery were involved in the design, delivery, evaluation, and governance of the study [111]. In addition to providing trauma-informed services, the nine sites provided one of the following trauma-specific services: TREM [11], Seeking Safety [112], Addiction and Trauma Recovery Model (ATRIUM) [113], and/or the Triad Group model [114].

Six- and 12-month follow-up results painted a mixed picture, in part because improvement was observed in both the intervention and the usual care group [115, 116]. At 6 months, patients receiving the intervention experienced significant improvement in substance use outcomes and posttraumatic symptoms, and nearly significant improvement in psychological distress symptoms as compared to usual care [115]. In a similar comparison at 12 months, there was no significant reduction in addiction symptom severity, but the intervention was associated with statistically significant improvements in both psychological distress and posttraumatic symptoms [116]. In the words of the researchers: "Any multi-site study of this magnitude and complexity, governed by committee, is replete with both creative solutions and hard-won compromises to its methodological challenges. The result is a study with conspicuous strengths and weaknesses" [111]. Considering the similar costs of operating comprehensive, trauma-informed compared with routine services and the potential gains for patients receiving trauma-informed care, the authors concluded that treatment intervention services were cost-effective [117]. In other words, available evidence indicates that there is no reason not to implement trauma-informed and trauma-specific systems.

The reduction or elimination of seclusion and restraint in a wide variety of healthcare settings and populations is congruent with TIC and has received ongoing empirical attention, chiefly in emergency or inpatient psychiatric wards [118–123]. The promise of this practice is illustrated by a randomized controlled trial of an intervention based on the Six Core Strategies TIC model [124] at a psychiatric hospital in Finland involving male patients with schizophrenia who had a history of violent behavior. Before the intervention, the high-security wards used seclusion as the primary coercive method, sometimes preceded by restraints and injectable medication. Four out of the 13 wards served the most treatment-resistant men with schizophrenia (one ward in the control and one ward in the intervention condition). Among other elements, the intervention featured individual crisis plans drawn from a questionnaire of traumatic experiences and violent behavior and a list of common triggers, warning signs, and calming activities. Study outcomes included duration of seclusion-restraint, the number of patient-days with seclusion, restraint, or room observation, and the number of incidents of physical violence against any person, including self-harm. Compared to a 25–19% decrease in seclusion-restraint and observation days in control wards, corresponding decreases of 30–15% were observed in the study wards [125]. Notably, seclusion-restraint time increased in the control wards, from 133 to 150 h per 100 patient-days, while it decreased in the intervention wards from 110 to 56 h [125]. The highly significant statistical differences in study outcomes were achieved without a concomitant increase in patient-to-patient injuries, including self-mutilation [125]. Unfortunately, the authors do not report on other important outcomes, such as associations with duration of hospitalization and symptom severity, which should be investigated in the future. In another study, substantial reductions in seclusion-restraint were observed in child and adolescent psychiatric wards at a state hospital after the Six Core Strategies model was adopted by leadership and staff, although the intervention did not involve a control group [126].

As another example, Project Kealahou is a federally funded program seeking to provide TIC and trauma-specific therapies to female youth exposed to trauma, as well as interagency collaboration among the mental health, education, juvenile justice, and child welfare service sectors in Hawaii [127]. A program evaluation involving 28 youth and

16 caregivers who completed both a baseline and a 6 month follow-up interview, revealed significant improvement in a range of program endpoints, including depression, behavioral problems, emotional problems, and caregiver strain, as well as satisfaction with the program [128].

In summary, these initial studies provide evidence that even a uniform approach to TIC can be beneficial in both healthcare and non-healthcare environments. Studies seeking to determine how approaches can be tailored based on age, setting, sexual orientation/gender identity, etc. are clearly needed.

Knowledge and Practice Gaps in TIC

A trauma-informed approach poses fundamental challenges to certain aspects of human services systems, including the healthcare system, as they are commonly configured in the USA. In its most far-reaching version of TIC, the Sanctuary Model, Bloom challenges the short-term bottom-line focus in for-profit healthcare and calls for commitments to social responsibility and "deep democracy" (i.e., recognizing "the basic ecological fact that everything is interconnected, that all life is a complex and interdependent web" [page 100–101]) in trauma-informed organizations [16]. Even in less comprehensive versions, a trauma-informed approach requires leadership, organizational commitment to change, and investment in the face of limited evidence of effectiveness or efficacy using the gold standard in treatment evaluation, randomized controlled trials. In this instance, it may be beneficial to introduce TIC alongside other social justice and ethical imperatives [129–131].

Development of a trauma-informed workforce is also important to consider. At least in terms of the healthcare workforce, curricular exposure to TIC is limited with few exceptions [132, 133]. Despite increasing inclusion of specific trauma topics (e.g., IPV content) in the curriculum of US medical schools [134], gaps in actual clinical performance remain [135]. Among practicing physicians, few primary care providers and pediatricians regularly screen for trauma exposure across the lifespan or feel confident in their skills [136–138]. Data on actual trauma-informed practices in other healthcare professions are also scarce, despite cogent calls for integration of the science related to ACEs into their work [131, 139]. However, the recent publication of several randomized controlled trials of educational interventions that resulted in self-reported or observed improvement in patient-physician communication around ACEs in primary care providers is decidedly encouraging [140–142].

Anecdotal evidence suggests that one barrier to participation in training and/or routinely incorporate TIC practices is a provider's personal history of trauma. An early survey of providers in social service agencies working with children indicated a prevalence of childhood maltreatment of any type (neglect or abuse) of 28.2% for male providers and 36.8% for female providers [143]. In a second survey of professionals responsible for evaluating child sexual abuse allegations, 13% of men and 20% of women reported a history of childhood sexual abuse, and 7.3% of men and 6.9% of the women reported a history of childhood physical abuse [144]. A third survey involved 297 members of the Massachusetts Academy of Family Physicians who appeared to be representative of the Academy's overall membership, at least in terms of demographics (51.2% female) [145]. Reported rates for childhood abuse were 18.1% and 26.5% for any childhood abuse and 24.3% and 42.4% for any lifetime abuse for men and women, respectively [145]. A fourth, large survey of female nurses ($N = 1981$) found that 17.87% reported childhood physical abuse, 17.99% reported childhood sexual abuse and 10.29% reported witnessing IPV between parents or caregivers during childhood [146]. Childhood maltreatment (but not witnessing IPV during childhood) increased the risk for adult IPV in the sample (25% lifetime) [146].

Interestingly, respondents in three of the surveys who disclosed a history of trauma were more likely to believe children's reports of abuse [143], ascertain abuse in case vignettes [144], or feel confident in their ability to screen patients for a history of childhood abuse [145]. However, the possibility of secondary or vicarious traumatization, particularly for providers who have a personal history of trauma, is an important consideration. If healthcare systems were more trauma-informed, healthcare workers themselves might be less likely to experience both primary traumatization and retraumatization; this is a fertile area for future study. A recent meta-analysis identified a personal trauma history as one of the risk factors for secondary traumatic stress [147].

A study of physicians referred for remediation after making professional boundary violations revealed that 29% of respondents were positive for the minimization/denial subscale of the Childhood Trauma Questionnaire, which indicates a likely underreporting of childhood maltreatment [148]. However, there are no published Childhood Trauma Questionnaire data obtained from nonreferred physicians to serve as a benchmark. Thus, the possibility remains that a significant minority of physicians and other healthcare providers who disavow their histories of childhood adversities may be less likely to engage in trauma-informed practices. This is a tenable question that could be addressed by future research. Future research should also focus on the contrasting hypothesis: Are healthcare providers with avowed histories of trauma that have worked through the psychological sequelae of their trauma particularly competent in TIC practices? Anecdotal experience show that such

individuals seek jobs caring for others who have experienced adversity as a means to "give back" and empowerment.

TIC, Resilience, and the Limitations of Resilience

Even if TIC can be adopted faithfully in contexts far removed from the historical and sociopolitical context in which TIC first emerged in the USA, the preeminence of *individual* empowerment, strengths, and resilience in TIC is intricately linked to the values of an individualistic culture. In this type of culture, "societies exist to promote the well-being of individuals" and "individuals are seen as separate from one another," in contrast to collectivistic societies, where "Individuals are seen as fundamentally connected and related through relationships and group memberships"(page 311) [149]. It therefore remains to be seen if this individualistic feature can be adopted in collectivistic cultures. Social psychology has shown that the individualistic-collectivistic distinction is associated with cross-cultural differences in a range of mental processes and behaviors, ranging from the meaning of suffering [150] to the pursuit of individual goals [151] and the extent to which people view themselves as agents acting independently [152]. Most contemporary formulations of resilience revolve around neurobiological or psychological qualities of an individual [153], although there are recent exceptions to this trend proposing a community view of resilience focusing on robust health systems, social connectedness, psychological health, and vulnerable populations [154]. The concerns about a more culturally responsive view of resilience have been reviewed by Buse and colleagues, who consider the impact of culture on expression of emotions, somatization, locus of control, self-enhancement, dissociation, family and community support, and healing rituals or ceremonies [155].

Conclusions

Since its inception in the early 1980s, TIC has evolved from a therapeutic approach for disadvantaged women with mental illness and co-occurring substance misuse to a veritable social movement. During this evolution, the original focus of TIC on healthcare has expanded into other human service arenas, and now includes proposals to transform organizational policies and procedures in addition to the practices of individual service providers. In giving voice to the lived experience of people who have experienced trauma, TIC emphasizes the importance of respect, dignity, and collaborative patient-clinician relationships. These values are congruent with two broad-based approaches to service provision

– patient-centered care and cultural competence – that enjoy increasing buy-in from stakeholders at all levels, including consumers and communities. While empirical evidence for the added value of adopting a universal, trauma-informed approach to care is being gathered, this congruence of TIC with other approaches and a strong focus on social justice and equity will likely facilitate widespread uptake and dissemination.

In summary, this chapter reviewed the literature to build a case for the relevance of trauma-informed approaches to the provision of services for LGBT and gender nonconforming or genderqueer individuals across the lifespan and in numerous sectors, including school, child welfare, justice, and healthcare. Burdened by both high rates of trauma exposure and health disparities, these populations can benefit from programs and practices that embed TIC principles in their design, implementation, and evaluation.

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