Introduction to the Special Issue: Posttraumatic Stress Related to Pediatric Illness and Injury

Nancy Kassam-Adams, PhD
Children's Hospital of Philadelphia

Traumatic stress has emerged as a useful framework for understanding key aspects of individual and family responses to the experience of children's medical illness, injury, and medical treatment. Research and intervention development in this area have grown, in largely separate streams, within both the traumatic stress field and the field of pediatric psychology. In recent years, there has been increasing attention within the pediatric psychology field to a posttraumatic stress framework for child and family responses to pediatric cancer, transplant, burns, and injury. Concurrently, the field of traumatic stress studies has begun to delineate traumatic aspects of medical events and of events that commonly bring individuals to medical attention; for example, car crashes. The aim of this special issue has been to bring together empirical and conceptual work in the area of medical traumatic stress that integrates knowledge from the pediatric psychology and traumatic stress fields.

Traumatic Stress as a Framework for Pediatric Medical Experiences

A traumatic stress framework for understanding child and family responses to illness and injury is not limited to assessing symptoms and psychopathology, or the presence of posttraumatic stress disorder (PTSD). Instead, the message of much traumatic stress research, including that related to pediatric medical events and conditions, is that traumatic stress reactions are extremely common and can be considered normative in the early days and weeks after an event (an injury, a new diagnosis of serious illness, a painful/difficult procedure). Further, research on traumatic stress related to pediatric medical events suggests the importance of attention to coping, resilience, and competence in children and families, and even the possibility of posttraumatic growth (Barakat, Alderfer, & Kazak, 2005; Salter & Stallard, 2004). Although we need to attend to acute distress and try to identify those who need greater levels of support or intervention, most children and families do well in the long run without any professional intervention (Kassam-Adams & Winston, 2004; Kazak et al., 2004).

Some aspects of traumatic stress reactions are not only normative but adaptive. Though distressing, these reactions may be part of naturally occurring processes of psychological recovery after an extreme experience. Traumatic stress theorists have long observed the balance between psychological reexperiencing and avoidance of trauma-related thoughts and images and postulated the adaptive role of this interplay in the recovery process after a traumatic experience (Horowitz, 1976). Traumatic stress responses may serve multiple adaptive purposes, including communicating with the social environment to signal distress and recruit support, processing and resolving traumatic memories, and using avoidance or distraction in moderation to be able to tolerate distress and proceed with survival tasks in the aftermath of a traumatic experience (Foa, 1997; Shalev & Ursano, 2003). Part of the value of a traumatic stress conceptualization for child and family reactions to medical events is that it seems to fit children's and parents' lived experience of responding as best they can to what feels like an overwhelming stressor.

An additional benefit of a traumatic stress framework may be in understanding the experiences of health care personnel who care for ill and injured children, often with recurrent exposure to potentially traumatic events during their professional relationships with these children and families. Compassion fatigue and secondary traumatic stress have been observed among pediatric hospital professionals (Robins, Meltzer, & Zelikovksy,

All correspondence concerning this article should be addressed to Nancy Kassam-Adams, PhD, TraumaLink 3535, 10th floor, Children's Hospital of Philadelphia, 34th Street and Civic Center Boulevard, Philadelphia, Pennsylvania 19104. E-mail: nlkaphd@mail.med.upenn.edu.

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2004). In the face of severe or life threatening pediatric conditions, tension and conflicts may arise between health care professionals and parents under extreme stress (Studdert et al., 2003). A traumatic stress framework can provide medical and nursing staff with a useful perspective for understanding the impact of traumatic events on themselves and an appreciation for the experiences of patients, families, and colleagues.

Traumatic Stress as a Disorder

The idea that some aspects of traumatic stress reactions may be a part of a normal recovery or adaptation process does not imply that all such reactions are positive or helpful, either in the short- or long-term. Acute traumatic responses can be severe and distressing and can interfere with the ability to successfully manage essential tasks. Persistent traumatic stress symptoms (e.g., continued intrusive and distressing thoughts or images, avoidance of trauma reminders, heightened arousal, and hypervigilance) over weeks and months can create substantial distress and impair day to day functioning across some domains. Diagnostic formulations such as PTSD, though imperfect, help to define the boundary where symptoms should be considered pathological. Traumatic stress diagnostic definitions have evolved over time, from earlier concepts of "shell shock" or traumatic neurosis through the inclusion of PTSD in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM*-III; American Psychiatric Association, 1980) and acute stress disorder (ASD) in *DSM*-IV (American Psychiatric Association, 1994).

Among psychiatric diagnoses, ASD and PTSD are unusual in requiring the occurrence of an external event as well as a constellation of symptoms related to that event in time. Since the introduction of the PTSD diagnosis, the definition of what constitutes a potentially traumatic event has undergone several changes that are relevant to whether medical events could be officially considered as traumatic stressors. In 1980, the *DSM*-III required that an individual experience a "recognizable stressor that would evoke significant symptoms of distress in almost everyone." Many injuries and serious illnesses would seem to fit this definition. In 1987, the *DSM*-III-R redefined a potentially traumatic stressor as an event "outside the range of usual human experience" that would be distressing for almost everyone, including witnessing or learning of such an event experienced by family or a loved one. Injury, illness, and other medical events may not have qualified, under this definition, as traumatic stressors as they are common enough to be within the range of usual human experience. This definition did introduce the idea that parents and family members of those directly experiencing an event may also be affected. In 1994, the *DSM*-IV created a two part stressor criterion, requiring that the individual "has experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others" and that the person experienced fear, helplessness, or horror at the time of the event. This definition clearly includes injury and for the first time being diagnosed with a serious illness was explicitly listed as a potentially traumatic event in the accompanying explanatory text. This recognition has helped spark increased attention to injury and illness as potential traumatic stressors in children and in adults.

Integrating Traumatic Stress and Pediatric Psychology

A traumatic stress framework complements traditional areas of pediatric psychology expertise and practice by bringing a specific and helpful new lens to the question of how illness, injury, or medical procedures affect children and families. This framework has the potential to broaden our conceptualizations of the impact of medical events by drawing from a rich literature on the effects of other sudden or frightening experiences that may involve dimensions shared by many medical events, for example, life threat, physical risk, pain or anticipated pain, or exposure to the suffering of others.

As experts in child and family responses to medical illness and treatment, pediatric psychologists have much to offer which would enrich the traumatic stress field. For example, much research and clinical practice focused on child traumatic stress has occurred in traditional mental health settings where children and families are more likely to be seen after PTSD symptoms have developed, rather than in the immediate aftermath of a potentially traumatic event. (Studies on children after disaster are one exception.) Because pediatric psychology research and clinical practice is firmly grounded in the health care system, often involving work with children who are in the midst of a potentially traumatic experience, pediatric psychology interventions and research methodology have potentially valuable application for traumatic stress research and intervention in other "front line" settings.

Pediatric psychologists interested in increasing their knowledge of the broader traumatic stress field have some excellent resources available. The International

Society for Traumatic Stress Studies (ISTSS; www.istss.org) is the leading professional organization in this area that unites clinicians and researchers interested in a wide range of traumatic stress issues. ISTSS publications and training programs are an ongoing source of information about traumatic stress. The National Child Traumatic Stress Network (NCTSN; www.nctsnet.org) is a federally funded network of centers around the US whose mission is to "raise the standard of care and improve access to services for traumatized children, their families and communities throughout the United States." NCTSN collaborative working groups have produced useful resources in a variety of child traumatic stress topics, many of which are available on the NCTSN website. The National Center for PTSD (NCPTSD; www.ncptsd.org) provides excellent resources for professionals including the PTSD Research Quarterly (available online) and the searchable PILOTS database of traumatic stress literature (also accessible via the NCPTSD website).

Research Regarding Medical Traumatic Stress

The field of traumatic stress related to pediatric medical events, illness and injury is young enough that it is still forging a common language. Terms such as medical traumatic stress, pediatric traumatic stress, and medical trauma have been used to describe this area of inquiry and of intervention development. The term "trauma" itself can create problems for understanding across disciplines because for medical practitioners it has a clear meaning related to physical injury. "Medical traumatic stress" will be used here for clarity and consistency, with the recognition that terminology is still evolving.

Since the mid-1980s, there has been a steadily growing literature regarding medical traumatic stress in ill or injured adults, and in ill or injured children and their parents and other family members (for useful reviews of the adult and child literature on medical traumatic stress see Bryant, 2001; Kangas, Henry, & Bryant, 2002; O'Donnell, Creamer, Bryant, Schnyder, & Shalev, 2003; Saxe, Vanderbilt, & Zuckerman, 2003; Stuber, Shemesh, & Saxe, 2003; Tedstone & Tarrier, 2003). Within the child literature on medical traumatic stress, separate lines of investigation have developed within different diagnostic groups such as cancer, injury, organ transplant and other illness groups. Within these separate streams, the group that has probably been studied most extensively is children and adolescents with cancer and their families. These studies have moved from early prevalence studies to the development of assessment measures and focused interventions. The literature regarding children with injuries (unintentional or violence related) and their parents is more recent than that for pediatric cancer but growing rapidly. Other diagnostic groups represented in the child medical traumatic stress literature include pediatric organ transplant and diabetes. Unfortunately only a few studies of medical traumatic stress in children or family members have included multiple diagnostic groups (Landolt, Vollrath, Ribi, Gnehm, & Sennhauser, 2003).

Like pediatric psychology as a whole, pediatric medical traumatic stress is an area that *by definition* crosses disciplinary boundaries. At minimum, it involves the subdisciplines of pediatric psychology, child clinical psychology, child psychiatry, traumatic stress specialists who may be clinical psychologists, psychiatrists or those trained in another mental health discipline, as well as the various medical specialties within which patients at risk for medical traumatic stress are treated. Publication in this arena is also dispersed across disciplinary boundaries in psychology, psychiatry, social work, and medical specialty journals, increasing the difficulty of creating an integrated field of study. For instance, studies of traumatic stress within specific pediatric diagnostic groups may be published in a journal oriented to mental health professionals or in a key medical journal related to that medical specialty. Either option is very appropriate but either is likely to be missed by a key part of the potential audience for this information.

Studies in this Special Issue

The articles in this special issue address traumatic stress responses to a range of illness and injury experiences in children, adolescents, and young adults, as well as in parents. This group of articles provides a snapshot of current investigations in this area and addresses some key issues with regard to the development of traumatic stress and the interplay among child and family factors. In forging a conceptual framework that integrates knowledge from traumatic stress and pediatric psychology fields, Kazak et al. (2005) look across illness/injury types to identify key dimensions of traumatic stress responses related to any pediatric medical experience. This model also provides a framework for thinking about prevention and intervention opportunities at different time points and in different settings.

The field of medical traumatic stress is moving beyond studies of the prevalence of traumatic stress responses within a single diagnostic group to studies that help to hone our understanding of the impact of

illness/injury-related traumatic stress and the interplay of traumatic stress responses with other aspects of child and family functioning. Several of the articles in this issue address these topics. Schwartz and Drotar (2005) compare young adult cancer survivors to healthy peers, examining not only traumatic stress but also life satisfaction, health-related quality of life, mood and depression. Stoppelbein, Greening, and Elkin (2005), by assessing both cancer survivors and children facing the death of a parent, help to place the experience of cancer in the context of other childhood traumatic experiences such as parental bereavement. Zatzick et al. (2005) examine both traumatic stress and depression symptoms in adolescents and parents after traumatic injury, within a study design (random sampling) that allows conclusions to be drawn about the population from which the sample was drawn. Phelps et al. (2005) take a qualitative approach to understanding mothers' traumatic stress and coping after a child's violent injury, helping to elucidate the context within which mothers' traumatic stress responses may emerge.

Our understanding of mechanisms and mediational processes in pediatric medical traumatic stress is advanced by prospective studies that are able to examine the interplay between child and family factors over time. Meiser-Stedman et al. (2005), in a prospective study of injured children, examine both parent and child responses and the potential mediating effects of family factors such as parental worry as they affect child traumatic stress outcomes over time. Hall et al. (2005) report on a prospective investigation with parents of children with burns that examines both parent and child factors and identifies pathways to parental traumatic stress outcomes.

In keeping with a broad perspective on the human response to potentially traumatic events, it is important not only to remember the potentially adaptive nature of some traumatic stress "symptoms" but also to consider the possibility of growth and development in response to extremely difficult experiences. Barakat et al. (2005) examine posttraumatic growth in adolescents and their parents after cancer, providing an understanding of positive changes identified by many survivors and parents even as they also experience traumatic stress symptoms.

In the area of assessment of traumatic stress in children, there is a need to identify practical and empirically sound measures for a range of ages and practice settings. Hawkins and Radcliffe (2005) provide a useful review of the issues involved in selecting and validating posttraumatic stress measures, and report on the current use of traumatic stress measures as indicated by published studies in five key psychology or psychiatry journals. Dehon and Scheeringa (2005) evaluate the use of an empirically derived PTSD scale within a widely used parent-report measure for preschool children, expanding on the literature regarding the use of this scale with older children.

Future Directions

Future work in the area of pediatric medical traumatic stress must take on the challenge of elucidating key dimensions of potentially traumatic medical events that may be shared among disparate illness and injury experiences and providing more sophisticated investigation of mechanisms and pathways in the course and development of children's medical traumatic stress. One area that is notably missing from the empirical studies reported in this special issue is intervention. The development of screening, secondary prevention, and treatment interventions in this area is still in its infancy, with just a few published empirical studies of screening or intervention models designed specifically for pediatric medical traumatic stress (Kazak et al., 2004, submitted for publication; Winston, Kassam-Adams, Garcia-España, Ittenbach, & Cnaan, 2003). Given the opportunities that exist for intervention with children and families in health care systems (Horowitz, Kassam-Adams, & Bergstein, 2001; Ruzek & Cordova, 2003), studies are especially needed that evaluate the effectiveness of theoretically sound and practical secondary prevention and intervention models for pediatric medical traumatic stress.

It will be very important to address the integration of "trauma-informed" practice into the standard of care for physicians, nurses, and other health care providers, in addition to psychologists and other psychosocial staff embedded in medical settings. There are practical and logistic challenges involved in enlisting healthcare providers in this effort, and pediatric psychologists, with a long history of fruitful collaboration with health care teams, have much to offer here.

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