The Issue Is . . .

Childhood Toxic Stress: A Community Role in Health Promotion for Occupational Therapists

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MeSH TERMS
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People who experience the toxic stress of recurrent traumatic events in childhood have a higher risk for mental and physical health problems throughout life. Occupational therapy practitioners have a remarkable opportunity to be involved in addressing this significant public health problem. As health care practitioners already situated in the community, we have a responsibility to lead and assist in establishing and implementing occupation-based programs and to nurture the links between the child welfare system and existing intervention systems. In this article, we review the current research on toxic stress and recommendations made by other health care disciplines and offer strategies for occupational therapy practitioners to begin a dialogue on this critical, emerging issue.


Early life experiences profoundly influence the capacity of children to develop the range of competencies necessary to transition to adulthood and become contributing members of society (Felitti et al., 1998; National Scientific Council on the Developing Child [NSCDC], 2012). Childhood trauma, including being threatened with, witnessing, or experiencing physical, emotional, or sexual abuse, exploitation, violence, or extreme poverty, has become a major public health issue. Research has found that people who experience recurrent traumatic events in childhood, called toxic stress syndrome, have a higher risk for mental and physical health problems throughout life. Additionally, evidence has indicated that repeated exposure to trauma is not uncommon; most children who experience trauma are exposed to multiple events rather than a single traumatic incident (Felitti et al., 1998).

Despite its potential to be significantly reduced by appropriate prevention and intervention efforts, childhood trauma occurs at disturbingly high rates, threatening the future economic and social viability of the United States (Copeland, Keeler, Angold, & Costello, 2007; Flaherty & Stirling, 2010). The term toxic stress denotes the impact of early exposure to pronounced and sustained stress on a developing nervous system and the lifelong sequelae for physical, emotional, and mental health and economic potential (Felitti et al., 1998; NSCDC, 2012; Shonkoff, 2012).

Although current research comes primarily from medicine, psychology, neuroscience, and economics, occupational therapy practitioners are in an ideal position to provide important contributions to the evidence through our scientific knowledge, our expertise in focusing on the occupations of children and families, and our focus on environmental context, particularly at the community level (Baum, 2011). Our profession has a remarkable opportunity to address this profound public health problem. Occupational therapy practitioners and researchers can build evidence through the study of program efficacy, particularly in the areas of family-focused interventions.
that promote mental and emotional health. We are equally suited to investigating the ways toxic stress restricts occupational performance and the impact of sociocultural environments on everyday activities and quality of life. In this article we review the current research on toxic stress and recommendations made by various disciplines and offer strategies for occupational therapy practitioners to begin a dialogue on this critical current issue.

Developmental Impact of Toxic Stress

The NSCDC (2005) proposed a conceptually guided taxonomy based on three categories of stress experience: positive, tolerable, and toxic stress. Positive stress occurs during typical childhood experiences, such as going to day care for the first time or spending the night without a parent. Experiences that create positive stress, as the term implies, are important for optimal child development. Tolerable stress refers to stress that occurs with traumatic events such as a serious illness, loss of a loved one, car accident, or tornado, flood, or fire affecting the home, but it is mitigated by the support of a loving caregiver who helps the child cope with the stress appropriately. Toxic stress occurs through chronic or cumulative traumas that the child experiences without the available support of a loving caregiver (e.g., child abuse, maternal depression, caregiver substance abuse; NSCDC, 2005).

Although stress responses are vitally important for survival, constant activation of these responses has been shown to cause long-term physiological, cognitive, and psychological damage (NSCDC, 2012; Shonkoff, 2012). Because of the heightened plasticity of the prenatal, infant, and early childhood brain, scientists believe that it is during this time that the brain is most sensitive to chemicals, such as stress hormones, that can alter brain structure and chemistry (Bruce, Fisher, Pears, & Levine, 2009). Such alterations may lead to deficits in performance, including impaired learning, memory, executive function, and mood control and increased anxiety (NSCDC, 2005). Adversity experienced during sensitive periods of brain development, in which the brain is most malleable, can result in changes to the operating system that determines how the neural network responds to stress (NSCDC, 2012). Early experiences are also critical to the development of a healthy immune system through appropriately regulated stress responses.

The impact of chronic and sustained stress during childhood is not limited to that developmental period, however. Chronic overuse of the body’s stress response system is correlated with a number of prevalent adult conditions, including cardiovascular disease, hypertension, diabetes, liver cancer, asthma, chronic obstructive pulmonary disease, autoimmune disease, and depression (Shonkoff & Garner, 2012). Thus, toxic stress exposure can influence the occupational competence of individuals and populations for a lifetime (Anda et al., 2006; Shonkoff & Garner, 2012). Those particularly at risk for toxic stress include the children of young, undereducated, and single parents. These parents and, subsequently, their children often experience challenges related to poverty, such as residential instability, limited education, low income and earning potential, food scarcity, and limited access to health care (Felitti et al., 1998; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Shonkoff, 2012).

Several protective factors against toxic stress have been identified. These indicators of strong social capital include the presence of a caring and supportive adult, the availability of extramural support, access to quality health care and education, regular church attendance, and targeted social welfare services (Runyan et al., 1998).

From an economic perspective, it is clear that toxic stress and its consequences have a staggering cost to society. Children who display learning or behavioral problems are at higher risk for school failure, incarceration, and economic dependency later in life (Agency for Healthcare Research and Quality, 2008). Moreover, the physical and mental health consequences of toxic stress create a tremendous burden on the country’s medical resources. Although evidence has shown that attempts to “remediate” an older child are much less effective than prevention efforts and early intervention (Heckman, 2007), it is a challenging and complex task to convince policymakers to spend current funds with the promise of a return on investment later.

Taking the lead, the Center on the Developing Child at Harvard University (2010), citing the urgency of the situation, has compiled a number of policy recommendations aimed specifically at early childhood intervention, including:

- Improve access to basic health care for pregnant women and children
- Provide intensive family support to at-risk families through evidence-based home visiting programs
- Increase at-risk children’s access to very high-quality early education centers
- Address early education centers that fail to meet minimal health and safety standards.

These recommendations have important direct implications for occupational therapy practice. The focus of occupational therapy practitioners is on the health and well-being of individual clients and their classrooms, schools, homes, and neighborhoods. Practitioners must also focus their attention on the occupational wellness of families and at-risk populations, considering toxic stress from a societal, social policy, or population perspective.

New Role for Occupational Therapy: Community, Capacity, Prevention

Occupational therapy practitioners are poised to offer support in building the capacities of the identified protective factors. Practitioners work with families in different settings, are valued as early intervention team members, and are ideally positioned to be part of the toxic stress prevention effort. As with any emerging role in our profession, we need to establish a strong, viable, and visible presence with supporting evidence affirming this emerging role (Grady, 1995; Thibeault & Hébert, 1997).

The American Occupational Therapy Association (AOTA) supports the profession’s role in health promotion, mandating practitioners “to promote healthy life styles; to emphasize occupation as an essential element of health promotion strategies; and to provide interventions, not only with individuals but also with populations” (AOTA, 2008b, p. 696). We are able to intervene at multiple levels: directly with the child by building a child’s
capacity; with families by identifying and intervening with those at risk for toxic stress; with community agencies by partnering to support families, by collaboratively expanding the capacity of programs to serve unmet needs, and by promoting new program development to meet population needs; and on the macro level by advocating for policy changes. AOTA’s Centennial Vision includes meeting the occupational needs of society (AOTA, 2007). Embracing our role in health promotion demands that we take a broader view of health to expand the boundaries of occupational therapy practice through building capacity in communities. Our role is to create supportive environments and address the underlying determinants of health such as access to healthy foods, safe shelter and neighborhoods, quality education, and social support resources such as respite care (Trentham, Cockburn, & Shin 2007).

Health promotion requires a shift in how we approach the needs of children in the management of toxic stress. First and foremost, we must be cognizant of the role that a stable, responsive relationship plays in mitigating the effects of toxic stress. As we work to support families at risk, we must not inadvertently undermine the nuclear relationship. We may encounter family struggles and priorities that challenge our role because the particular situation causing toxic stress may originate outside of the individual child’s referral or agency parameters.

Implementing Change

Current early intervention approaches are based on Bronfenbrenner’s (1977) ecological theory, which asserts that the needs of the family embedded in a community should be assessed along with the needs of the child because the two are inseparable. It is widely accepted that family-centered interventions are integral to effective early intervention therapy (Brotherson et al., 2010; Fleming, Sawyar, & Campbell, 2011; Mahnke, 2005). Early intervention specialists are providers of skilled therapy to “promote child development and foster the capacity of the family to advocate for their child while enhancing the family’s occupational role in caregiving capacity” (AOTA, 2010, p. 1).

Despite the fact that a poor home environment and dysfunctional family interactions are known sources of stress in early childhood, occupational therapists do not traditionally or routinely provide direct family intervention to ameliorate these family stresses (Brotherson et al., 2010; Fitzgerald, Ratcliffe, & Blythe, 2012). Although family work is recommended in government guidelines and many practice models are available to support practitioners, little evidence is available to guide the implementation and documentation of a family focus in occupational therapy practice (Fitzgerald et al., 2012). Interventions that strengthen the capacities of families and communities can help mitigate and protect children from the adverse effects of toxic stress and are likely to promote healthy brain development and enhanced well-being (Runyan et al., 1998; Shonkoff & Garner, 2012). The focus needs to begin with the family and then expand to include the broader family community support system, beyond early childhood program staff, to neighborhood resources such as police and fire stations, libraries, grocery stores, well child medical care, and places of work and worship, to name a few. These supportive systems will assist in strengthening the foundations of child health (Shonkoff & Garner, 2012).

The majority of services currently provided to children by occupational therapy practitioners are characterized as remediation or modification (AOTA, 2008a). A health promotion and prevention ethos is not currently the primary intervention mode for pediatric occupational therapy practitioners, although it is addressed in the Occupational Therapy Practice Framework: Domain and Process (AOTA, 2008a). The evidence for shifting toward prevention seems obvious, particularly in the area of toxic stress. The remediation paradigm inherently stipulates waiting for children to struggle before identifying the problem. Even then, the policies and narrow definitions of disability limit eligibility to receive services to address toxic stress sequelae. Moreover, occupational therapy services are couched in policies that focus on school readiness, language and literacy development, and academic achievement. Early intervention practice has trended toward these same priorities. Social, emotional, and overall mental health have not been promoted as a priority for intervention, even though challenges in these areas are the very ones that can overwhelm a child’s ability to learn and perform age-appropriate occupations when faced with adverse and traumatic environments (Shonkoff, 2012).

Recommendations of the U.S. Department of Health and Human Services in association with the Centers for Disease Control and Prevention for addressing toxic stress fall under individualized health promotion and prevention models, which include programming that incorporates parent education, child education, teacher and caregiver education, and home visitation (Middlebrooks & Audage, 2008). Viewing toxic stress as a public health issue—in contrast to solely an educational or individual disability issue—is a powerful indicator that a focus on community-based, multidisciplinary prevention is the ideal solution to replace occupational therapy’s historic, more reactive stance of remediation. Our profession’s challenge is to bridge the gap between the theory of providing family-centered, community-based, preventive care for children and the reality of day-to-day practice.

New Policy and Systems Implications

Occupational therapists typically receive a referral because a parent, teacher, or physician has identified a developmental delay or limitation affecting a major life activity. Because a child experiencing toxic stress may not show obvious delays or problems, however, we need to create ways to reach and intervene with at-risk children and families to most effectively prevent toxic stress from occurring and to put positive strategies in place. This effort may require innovative payment mechanisms and new community partnerships supporting new occupational therapy roles (e.g., drug and alcohol recovery programs for parents, outreach programs to prevent incarceration recidivism, domestic violence shelters, obstetric care). Occupational therapy practitioners, as well as other health care providers, often have difficulty practicing within their potential full scope because of the current
payment system built on the “sick care” as opposed to prevention model. The ecobiodevelopmental (EBD) framework is an effective, evidence-based approach that can be used to further guide occupational therapy’s response to toxic stress (Shonkoff & Garner, 2012). An EBD approach to childhood adversity suggests the following principles:

- Early experiences with significant stress can undermine the development of adaptive capacities and coping skills.
- The roots of stressful lifestyles, maladaptive coping patterns, and weak social networks are often reflected in behavioral and physiological responses to significant adversity.
- The prevention of long-term, adverse consequences is best achieved by the protection of stable, responsive relationships that help children develop a sense of safety, thereby facilitating the restoration of their stress response systems to baseline (NSCDC, 2012).

The application of the EBD framework to toxic stress in the literature has led not only to changes in the primary pediatric medical care provided to individual children, but also to policy statements and key recommendations calling for sweeping changes in the delivery model for pediatric services, the ways pediatricians are educated, the reimbursement models for the associated health care, and the social and health policies that drive the root causes. The same opportunity applies to occupational therapy because the profession defines a parallel role in toxic stress intervention. Occupational therapy practitioners must use evidence and work with other health service providers, educators, and policymakers as the details of the Patient Protection and Affordable Care Act (2010; Pub. L. 111–148) are translated into practice and payment.

The American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health and Task Force on Mental Health (2012) recommended that pediatricians consider implementing standardized measures that will help identify family- and community-level factors that may put children at risk for toxic stress. The screenings will be most effective if collaborative referral relationships already

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<th>Occupation</th>
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<tr>
<td>Socially connect with neighbors</td>
<td>Build healthy community relationships for families Establish after-school community work preparation programs Design community space for collective intergenerational gatherings</td>
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<tr>
<td>Care for and increase knowledge of health</td>
<td>Advocate for workers’ health and safety Provide health and wellness centers for immigrants Build fitness into elementary school classrooms Assist health care teams in being culturally and socially responsive</td>
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<tr>
<td>Care for self and others</td>
<td>Develop programs for parents, prospective parents, child care workers, grandparents, foster parents, and day care staff Encourage spiritual and religious inclusion</td>
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<td>Manage mental health needs, manage stress</td>
<td>Teach adolescents skills in managing daily health Build a conflict resolution curriculum for youth Promote mental health through advocacy and education Develop bully management programs</td>
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<td>Obtain resources to fulfill basic needs</td>
<td>Promote successful transitions from homelessness Train volunteers for community service Improve access to neighborhood grocery stores Promote childproof homes with safe exit strategies</td>
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<td>Identify and participate in desired activities</td>
<td>Empower neighborhood walking to promote connectedness Develop museum programs offering education to underserved youth Build character in youth through community service</td>
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<tr>
<td>Get involved in community organizations</td>
<td>Participate in agency programs for immigrant families Promote fitness for obesity prevention and health promotion Establish library programs to disseminate resources for families Provide occupation-based mentoring programs</td>
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<tr>
<td>Enhance community integration</td>
<td>Develop intergenerational day care center programs Establish long-term transitional homes or shelters for homeless families Provide workforce development Develop transitional programs for youth emerging into adulthood</td>
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<tr>
<td>Meet basic daily needs</td>
<td>Locate resources for those who are food insecure Develop capacities in nutrition literacy</td>
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<tr>
<td>Meet instrumental needs</td>
<td>Design teen work skills programs Engage in goal setting with imprisoned youth Enhance the road to college for at-risk youth</td>
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<tr>
<td>Organize collectively to build on strengths and make needs known</td>
<td>Enable access to mental health services for parents recently incarcerated Advocate for accessible public transportation Work with local agencies and governments for effective health promotion</td>
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(Continued)
exist with local services, such as occupational therapy, that have demonstrated evidence of effectiveness in dealing with toxic stress. As pediatricians become more systematic in addressing this need, occupational therapy practitioners need to be ready to intervene as part of the community team working to prevent toxic stress. Occupational therapists need to invest in the development, testing, continuous improvement, and replication of models of cross-disciplinary policy and occupation-based program interventions. To receive proper payment for the time used to screen all children deemed at risk and to develop evidence-based programs for those that have been affected by toxic stress, we must advocate at the state and national levels. As we continue to discover the potentially lifelong significant impact of toxic stress on a child’s developing system, we must be willing to advocate for and seek systemic changes in reimbursement strategies that will allow us to provide services in a broad array of programs.

Implications for Occupational Therapy

Ameliorating toxic stress will require occupational therapy practitioners to embrace an environmental systems perspective and to look beyond individualized delivery of services to collaborative community prevention approaches with responsive multidisciplinary teams and additional community partners for solutions to community toxic stressors (e.g., unemployment, gun violence, neighborhood safety, homelessness, substance abuse, mental illness, domestic violence; Anda et al., 2006). As health care practitioners already situated in the community, occupational therapy practitioners play a critical role in leading and helping establish, implement, and nurture the links among the established child welfare system, the educational system, the medical system, and other existing intervention systems. We envision occupational therapy playing a significant role within communities to promote health for all populations through programs that are not dependent on federal legislation or eligibility requirements for their provision but are supported through the principle of occupational justice (Townsend & Wilcock, 2004) and through tax support and grant possibilities for the development and delivery of evidence-based, health-promoting parent education programs, youth skill development, and neighborhood and residential services (Anderson, Scrimshaw, Fullilove, & Fielding, 2003; AOTA, 2008a; Poland, Krupa, & McCaII, 2009; Table 1).

As occupational therapy educators, we propose that entry-level curricula emphasize professional advocacy roles for our work in health promotion and address the practice of being a member of responsive community teams protecting the welfare of communities, youth, and families. Educators should continue to ask themselves, “What capacities are required among occupational therapists to promote health effectively for populations in communities?” We may encounter issues affecting families that we might perceive as outside of our scope of practice or capacity to treat. Effective responses to such issues will require new collaborative models of community practice in partnership with community resources to ensure that all family needs are being met. Building the capacity of families by focusing on family strengths is a hallmark of our practice (AOTA, 2008b).

Table 1. Expanded Occupations for Families, With Program Examples (cont.)

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<tr>
<th>Occupation</th>
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<tr>
<td>Participate in agency programs</td>
<td>Engage parents as education partners</td>
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<td></td>
<td>Develop violence reduction programs</td>
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<td></td>
<td>Provide community recreational programs</td>
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<td></td>
<td>Participate in senior center programs</td>
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<tr>
<td>Learn new skills to problem solve barriers</td>
<td>Provide life skills programs for teenage parents</td>
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<td></td>
<td>Develop disaster relief programs</td>
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<td>Provide community college programs</td>
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Conclusion

Occupational therapy professionals might address building community strengths in many ways. Addressing hospital recidivism for children born prematurely, working to prevent high school dropout, securing community pathways for fitness, and providing occupation-focused mentoring programs for young parents are a few ways we can assist in toxic stress reduction. The toxic stress literature informs us that working in early childhood education provides opportunities to influence a child’s life trajectory and calls on us to be mindful of this life course perspective in the focus of our daily work. Practitioners in early childhood education argue that they must work within the current reimbursement system. We counter that now is the time to gather data to support a broader professional role to serve families, reduce toxic stress, improve outcomes, and help broaden the scope of future reimbursable practice. ▲

References


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