

SIDE BAR:

Trauma, Neurophysiology, and Trauma-Informed Care

Trauma during childhood and beyond is a public health problem. Awareness among health care and public health professionals is important as many children and adults will have had a trauma exposure. Adverse childhood experiences are prevalent. Exposure to violence or disaster increases a population's risk for trauma. For many children and adults, especially those living in marginalized communities, with high levels of violence and limited resources, the trauma exposure may be chronic and on-going. The repeated and chronic stress of trauma exposure may be on-going resulting in an increased allostatic load. This environment, essentially, does not allow 'downtime' or rest from the continuous stress.

While our focus here is on social determinants of health, mental health, and well-being, it is important to remember that psychological trauma may have a profound neurophysiologic impact especially when the traumatic exposures occur in the first two years of life. Traumatic exposure and the associated overwhelming stress can change brain development, function, and structure. These brain changes impact the ability to learn, how we react to strong emotions, and how we attempt to cope with life course challenges. Trauma may manifest itself as sleep disturbances, anxiety, and irritability. Practitioners will want to understand how an altered brain may affect an individual's behavior.

Memories generated by traumatic exposures are encoded and consolidated differently by the brain. Individuals with traumatic exposures often don't remember or can't remember clearly what happened during the exposure.

These brain and body changes often make it difficult to think clearly when intense emotions are experienced. This negative impact on information processing may affect learning, the ability to seek solutions, and act. It may contribute to poor decision-making and resultant criminal and substance abuse activities.

Trauma-informed care begins with realizing the prevalence of trauma exposure in your state and locale. Improved awareness can provide impetus to identifying institutional, professional, and community partners who may be interested in trauma exposure and care,

too. Recognizing and assessing our own trauma, educating ourselves and colleagues about trauma, and inviting experts onto our interprofessional teams, may help as well. We want to be able to use trauma-informed approaches to care based on evidence, and suited to the context the individuals, families, and communities we work with experience. We want to incorporate stress reduction, resilience building, and support into our systems-of-care.

References

- (2016). Encouraging staff wellness in trauma-informed organizations www.chcs.org
- (2016). Responding to trauma in a trauma-informed way. New Jersey HIVLinks, Winter, 21-23.
- Gillespie, C.F. et al. (2009). Trauma exposure and stress-related disorders in inner city primary care patients. *Psychiatry and Primary Care. General Hospital Psychiatry* 31, 505-514.
- Vooris, A. (2015). In brief 1: Introduction to “trauma-informed” care: Important components and key resources. Johns Hopkins Urban Health Institute.
- National Center for Infants, Toddlers, and Families. (2016). Chronic stress and complex trauma. *Zero to Three*, 36, 5, 1-46.
- National Center for Infants, Toddlers, and Families. (2013). Responding to violence, disaster, and trauma. *Zero to Three*, 34, 2, 1-86.
- Wheeler, K. (Editor). (2013). Chapter 2: The neurophysiology of trauma and psychotherapy in *Psychotherapy for the Advanced Practice Psychiatric Nurse, Second Edition: A How-To Guide for Evidence-Based Practice 2nd Edition*. Springer Publishing Company.

TABLE: Emotional/Psychological Trauma Symptoms

Aches and pains
 Agitation
 Anger
 Anxiety
 Confusion
 Difficulty concentrating
 Easily startled
 Edginess
 Fatigue
 Fear
 Feeling disconnected or numb
 Guilt
 Hopelessness
 Irritability
 Learning difficulties
 Mood swings
 Muscle tension
 Racing heartbeat
 Sadness
 Self-blame
 Shame
 Shock, denial, disbelief
 Sleep difficulties, insomnia, nightmares
 Withdrawing from others

TABLE: Data Sources to Learn More About a Community, its Population and its Health

Data Source	Link
500 Cities: Local Data for Better Health	https://www.cdc.gov/500cities/
U.S. Census Bureau	https://www.census.gov/
County Health Rankings	http://www.countyhealthrankings.org/
Kids Count Data Center	http://datacenter.kidscount.org/
New Jersey Health Assessment Data	https://www26.state.nj.us/doh-shad/home/Welcome.html
City of Newark Open Data	http://data.ci.newark.nj.us/

TABLE: Three Trauma Assessment Tools

Tool	Available At:
Abbreviated PCL-C is a shortened version of the PTSD Checklist – Civilian version (PCL-C)	http://www.integration.samhsa.gov/clinical-practice/Abbreviated_PCL.pdf
Life Event Checklist	http://www.integration.samhsa.gov/clinical-practice/life-event-checklist-lec.pdf
Trauma Assessment for Adults – Self Report	https://www.ptsd.va.gov/professional/assessment/te-measures/taa.asp

One way to build a trauma-informed approach into care is by using SDOH based-interventions. Encouraging staff to be more welcoming along with increasing trauma awareness, adapting the environment to be more supportive of social interaction and physical activity, and nature-based interventions may be helpful. Other interventions to consider may be found here:

TABLE: Population Based Interventions to Improve Mental Health and Well-Being and Reduce Psychological Trauma

Key Social Determinant of Health Addressed	“Intervention”	Health Outcomes	Reference
Social and community context Neighborhood and built environment	Green space park walking and physical activity	Personal psychological restoration Children’s health promotion Stress reduction strategy Companionship and social support	Chase, S.M., Munet-Vilaro, F.M., & Echeverria, S. (2017). “I go to the park for a walk ... I’d say for sanity”: Green space, psychological restoration and stress reduction among urban Latinas
Health and health care	Single-session psychoeducation	Increase in mental health service utilization	Ghafoori, B., Fisher, D., Korosteleva, O, & Hong, M. (2016). A randomized, controlled pilot study of a single-session psychoeducation treatment for urban, culturally diverse,

			trauma-exposed adults. <i>J Nerv Ment Dis</i> 204, 421-30.
Neighborhood and built environment Health and health care	Neighborhood Walkability	Protective depression association in older men	Berke, EM, Gottlieb, LM, Moudon, AV, & Larson, EB. (2007). Protective association between neighborhood walkability and depression in older men. <i>Journal of American Geriatric Society</i> , 55, 526-533.
Neighborhood and built environment	Green space especially around schools	Boost cognitive outcomes in children. Working memories and attention spans.	(2015). Proceedings of the National Academy of Sciences.
Neighborhood and built environment Health and health care	Swimming pool and leisure provision	Stress relief Social contact and isolation relief Improved mental health	Thomas, H., Kearns, A., & Petticrew. (2003). Assessing the health impact of local amenities: A qualitative study of contrasting experiences of local swimming pool and leisure provision in two areas of Glasgow. <i>Journal Epidemiol Community Health</i> ; 57: 663-667.
Neighborhood and built environment	Nature-based therapy (forest therapy garden)	Decrease in PTSD symptoms Symptoms less burdensome Easier social interaction with family and friends	Varning Poulsen, D. (2015). How war veterans with post-traumatic stress disorder experience nature-based therapy in a forest therapy garden. University of Copenhagen. (Dissertation).
Neighborhood and built environment	Nature-based therapy (surfing/'blue gym')	Sense of respite from PTSD	Caddick, N., Smith, B., & Phoenix, C. (2015). The effects of surfing and the natural environment on the well-being of combat veterans. <i>Qualitative HealthResearch</i> 25, 76-86.

Social and community context	Racial and Ethnic Approaches to Community Health (REACH) coalition multiprogram intervention	Better self-rated mental health	Carty, DC, Kruger, DJ, Turner, TM, Campbell, B., DeLoney, EH, & Lewis, EY. (2011). Racism, health status, and birth outcomes: Results of a participatory community-based intervention and health survey. <i>Journal of Urban Health</i> 88, 84-97.
Social and community context	Volunteering	Well-being in older men	Goth, U.S. & Smaland, E. (2014). The role of civic engagement for men's health and well-being in Norway—A contribution to public health. <i>Int J Res Public Health</i> 6, 6375-6387.

For even more intervention information and resources:

Healthy People 2020 SDOH Topic Area Interventions & Resources:

<https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources>

Concrete Resources for Individuals and Families

Resource	More Information
Energy Assistance Program	http://www.nj.gov/dca/divisions/dhcr/offices/energy.html
Federally Qualified Health Centers	https://www.cms.gov/Center/Provider-Type/Federally-Qualified-Health-Centers-FQHC-Center.html
Head Start and Early Head Start	https://www.acf.hhs.gov/ohs
Homelessness Prevention	http://www.nj.gov/dca/divisions/dhcr/offices/hprp.html
HUD Housing Choice Vouchers	https://www.benefits.gov/benefits/benefit-details/710
Medicaid	https://www.medicaid.gov/

Supplemental Nutrition Assistance Program (SNAP)	https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap
Temporary Assistance to Needy Families (TANF)	https://www.acf.hhs.gov/ofa/programs/tanf/about
Women Infants and Children (WIC)	https://www.fns.usda.gov/wic/women-infants-and-children-wic

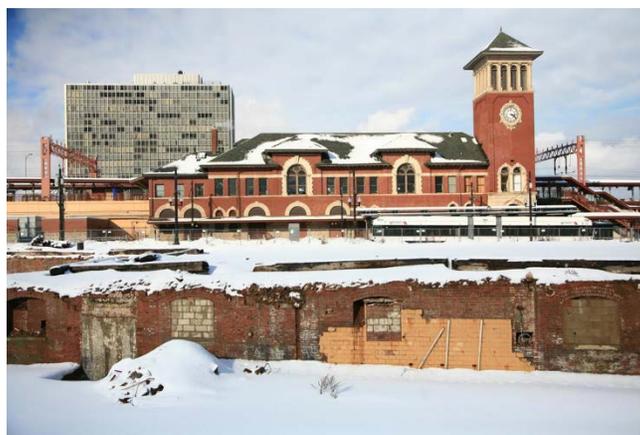


IMAGE: Closed Warehouse (Courtesy of Matt Gosser)