A Trauma-Informed Approach to Medical and Surgical Care

Nomi Levy-Carrick, MD, MPhil
Vice Chair, Clinical Programs, Dept of Psychiatry, BWH
Assistant Professor of Psychiatry, Harvard Medical School

Journey to Health ECHO Program
December 8, 2022

HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

A FOUNDING MEMBER OF PARTNERS HEALTHCARE

No Disclosures

Support for Trauma-Informed Care programming provided by RWJ Foundation Clinical Scholars Fellowship (2018-2021)

Support for Critical Illness Recovery Program ("After the ICU") provided by Ariadne Labs SPARK grant (2018-2020)

Learning Points

1. Understand basic neurobiological principles underlying trauma and trauma-informed practice

2. Understand the implications of trauma-informed care for Medical and Surgical settings

3. Understand ways to translate trauma-informed principles into bedside practice

Why Consider Trauma in Health Care?

Trauma is pervasive amongst **patients and staff**

Trauma has significant **health and mental health** effects.

Trauma greatly influences **how people access** and **experience** healthcare.

"I'm right there in the room, and no one even acknowledges me."

"I'm right there in the room, and no one even acknowledges me."

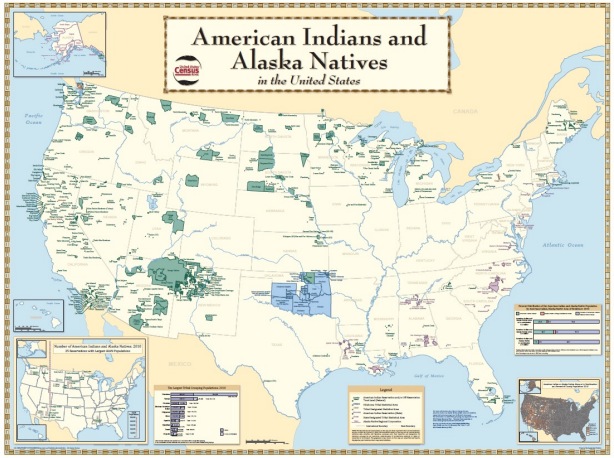
Without considering trauma:

Healthcare services can be re-traumatizing,

Treatments may not be effective

Patients may not be able to engage with you

Acknowledging the Current Situation in Indian Country and Beyond



- Inequity preceded COVID
- Inequity magnified and amplified by COVID

- Resilience/coping strategies preceded COVID
- Resilience/coping strategies utilized and further developed during COVID

The Trauma-Informed Approach

- ***Realizes*** the widespread impact of trauma and understands potential paths for recovery
- ***Recognizes*** how trauma affects all individuals involved in an organization, including its own workforce
- ***Responds*** by fully integrating knowledge about trauma into policies, procedures, and practices
- ***Resists*** re-traumatization

A TI approach refers to a change in ***organizational*** culture.

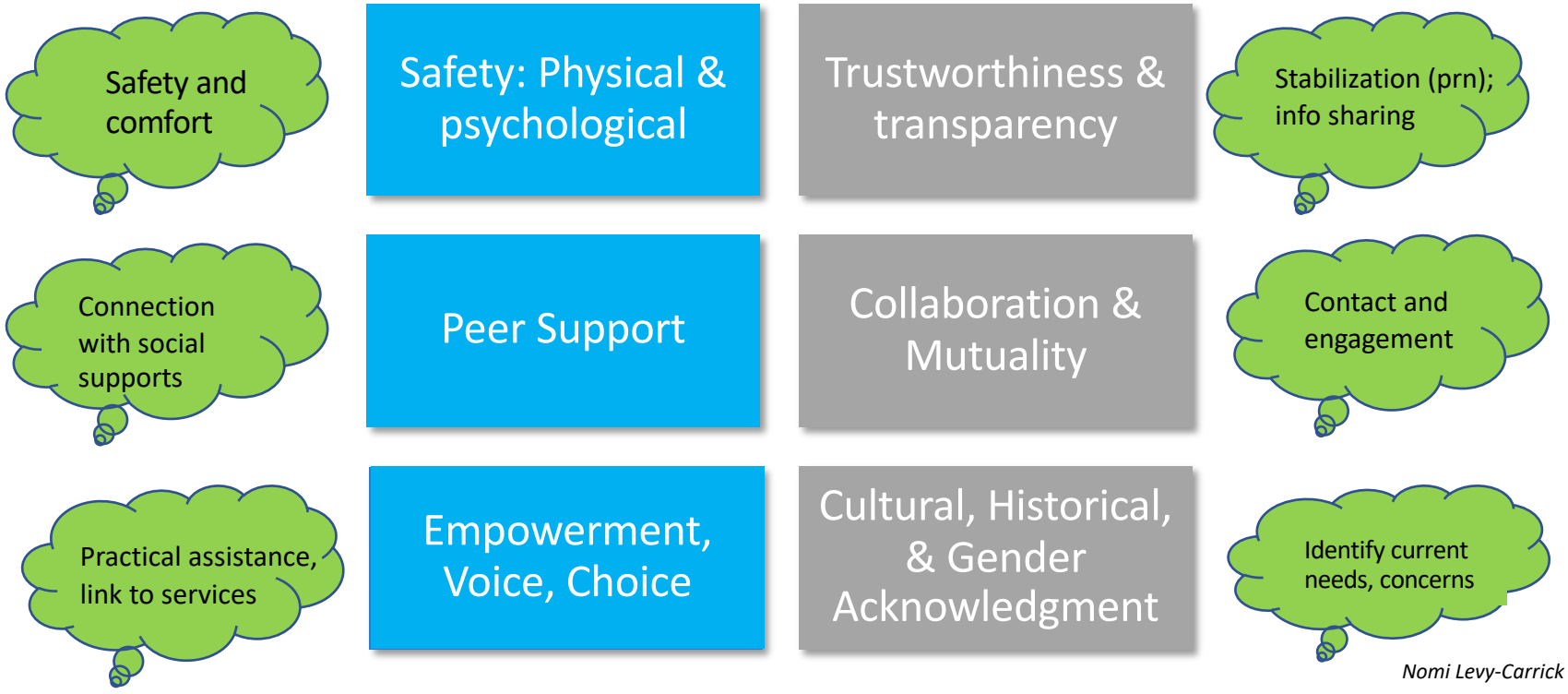
Trauma-Informed Care: 6 Principles

- Safety: Physical & psychological
- Trustworthiness & transparency
- Peer Support
- Collaboration & Mutuality
- Empowerment, Voice, Choice
- Cultural Humility and Responsiveness

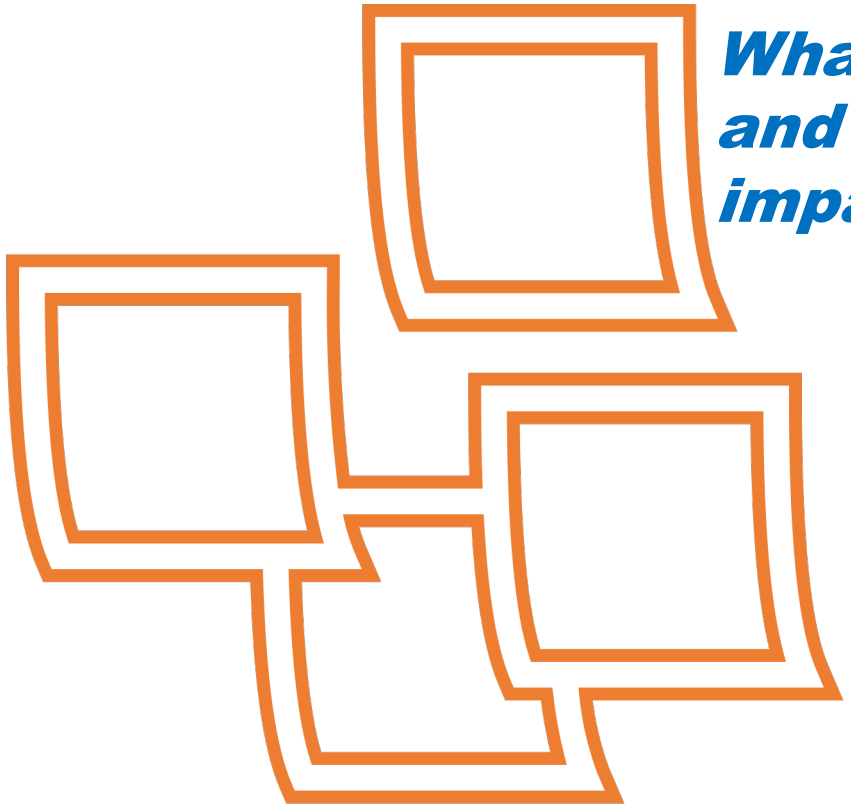
www.samhsa.org/TIC

Six Guiding Principles of TIC

(And corollaries to PFA Core Actions and VA's Stress First Aid)



Paradigm Shift



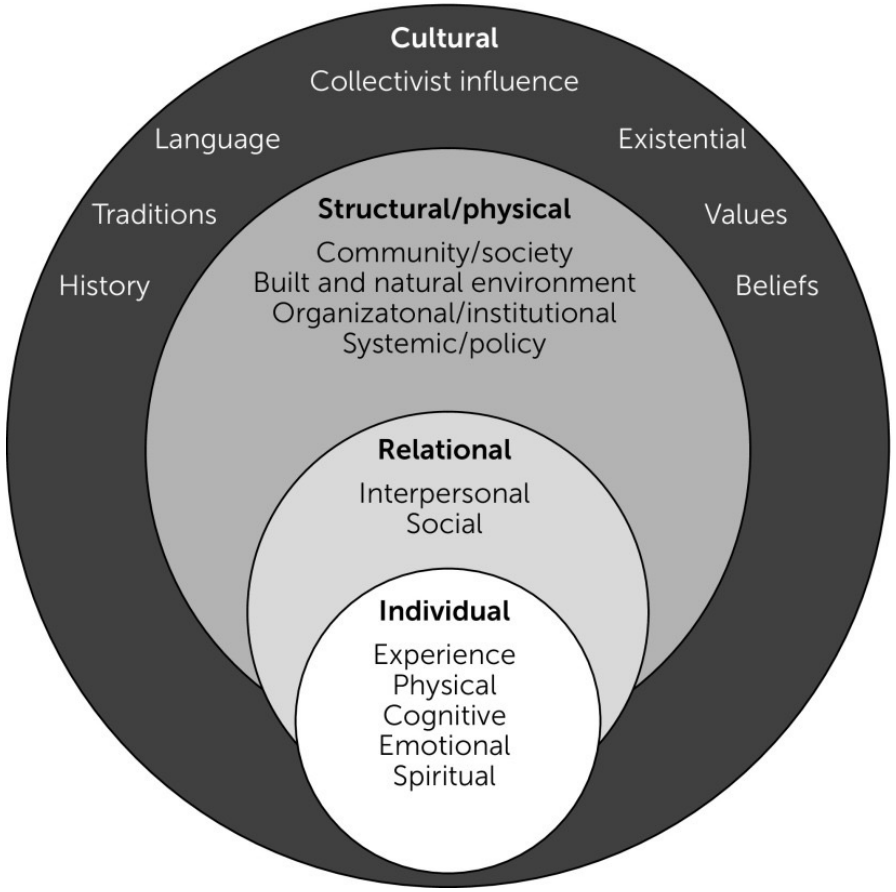
What happened to you, and how is that impacting your health?

What's wrong with you?

What is Trauma?

Consider the Cultural-Ecological Model of Health

Intergenerational/ Historical



Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically and emotionally harmful or threatening and that has lasting adverse effects on the individual's physical, social, emotional, or spiritual well-being. (15) - SAMSHA

Ranjbar N, Erb M, Mohammad O, Moreno FA. Trauma-Informed Care and Cultural Humility in the Mental Health Care of People From Minoritized Communities. Focus (Am Psychiatr Publ). 2020 Jan;18(1):8-15. doi: 10.1176/appi.focus.20190027. Epub 2020 Jan 24. PMID: 32047392; PMCID: PMC7011220

Figure 2

Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education			
Support	Walkability				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

IMPACT OF CHILDHOOD TRAUMA

The CDC and Kaiser Permanente surveyed 17,000 of the health plan's members to ask whether they'd had adverse childhood experiences defined as:

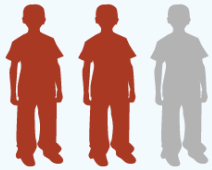
ABUSE	NEGLECT	HOUSEHOLD CHALLENGES
Psychological	Emotional	Family member experiencing:
Physical	Physical	Domestic abuse
Sexual		Mental illness
		Imprisonment

The landmark study found those with adverse childhood experiences were at higher risk for:

HEART, LUNG, AND LIVER DISEASE · OBESITY · DIABETES · DEPRESSION · SUBSTANCE ABUSE

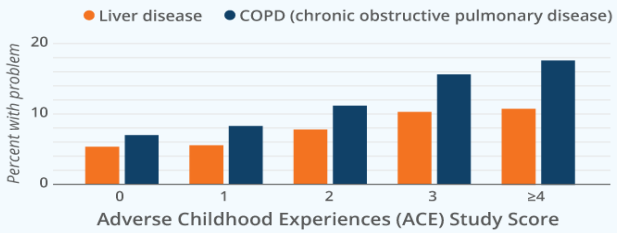
THE STUDY ALSO FOUND

NEARLY TWO THIRDS



of those surveyed experienced at least one event.

The higher the score on ACE survey, the more likely people were to be in poor health:



Sources: CDC ACE Study page https://www.cdc.gov/violenceprevention/acestudy/ and V. J. Felitti and R. F. Anda, "The Relationship of Adverse Childhood Experiences to Adult Health, Well Being, Social Function, and Health Care," from *The Impact of Early Life Trauma on Health and Disease: The Hidden Epidemic* (Cambridge, England: Cambridge University Press, September 2010).

Health Impact of ACEs on Adults- 2019 MMWR

BRFSS Survey 2015-2017 25 US states N=63,365

- 61% report at least 1 ACE
- 16% report 4+ ACEs
- Women, AI/AN, Black, and Other

more likely to report 4+ ACEs than Men and Whites

Adjusted Odds Ratio: 4+ vs 0 ACE exposures

Obesity 1.2	Stroke 2.1	Depression 5.3
Diabetes 1.4	Asthma 2.2	COPD 2.8
CHD 1.8	Heavy drinking 1.8	Smoking 3.1

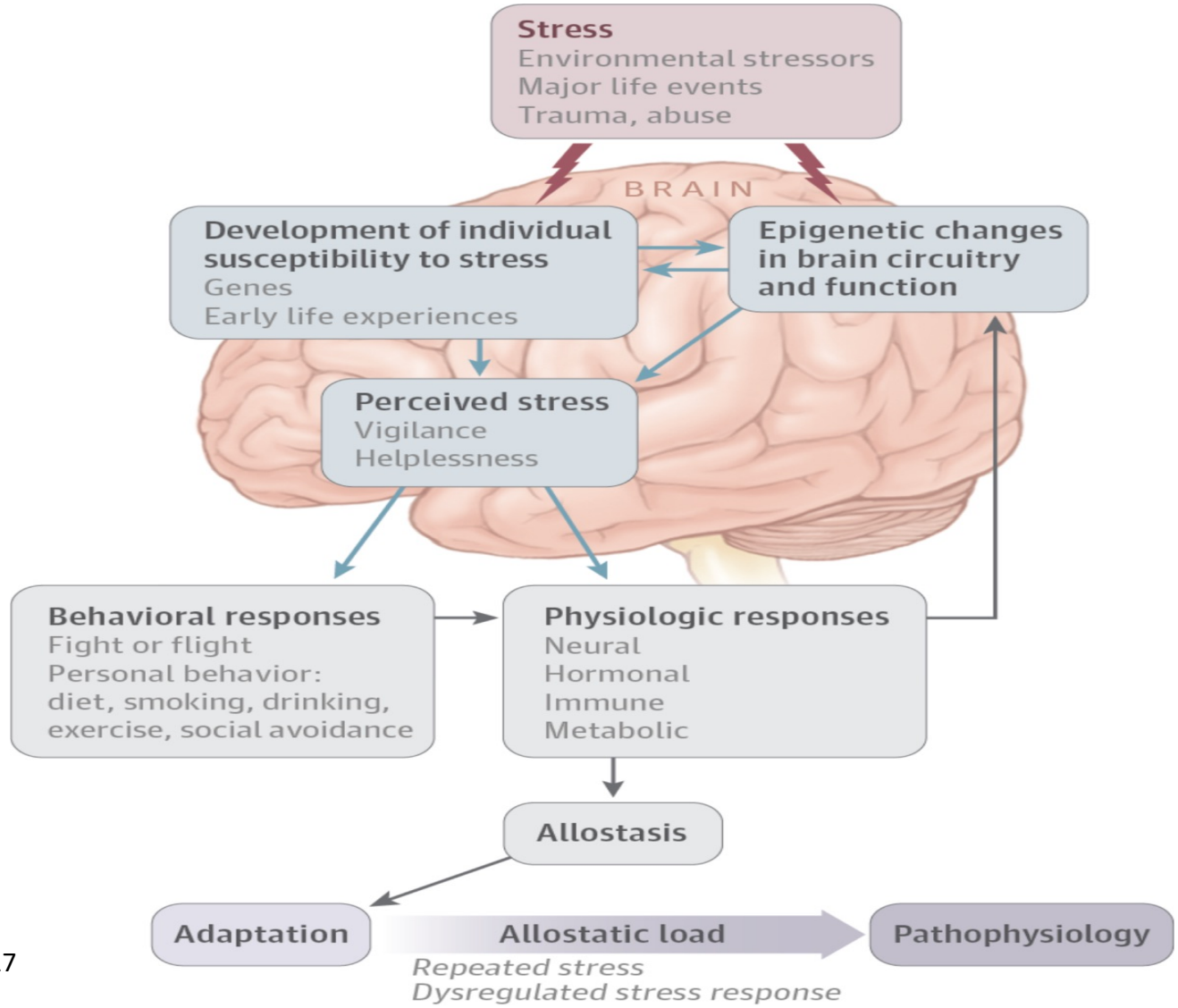
Merrick MT, Ford DC, Ports KA, et al. *Vital Signs:* Estimated Proportion of Adult Health Problems Attributable to Adverse Childhood Experiences and Implications for Prevention — 25 States, 2015–2017. MMWR Morb Mortal Wkly Rep 2019;68:999-1005. DOI: http://dx.doi.org/10.15585/mmwr.mm6844e1external icon.

Trauma-Informed Approach vs Trauma-Focused Treatment

- Focus on optimizing engagement [in health care]
- Universal precautions
- Universal framing
- Avoid retriggering
- Variability of role and context of care

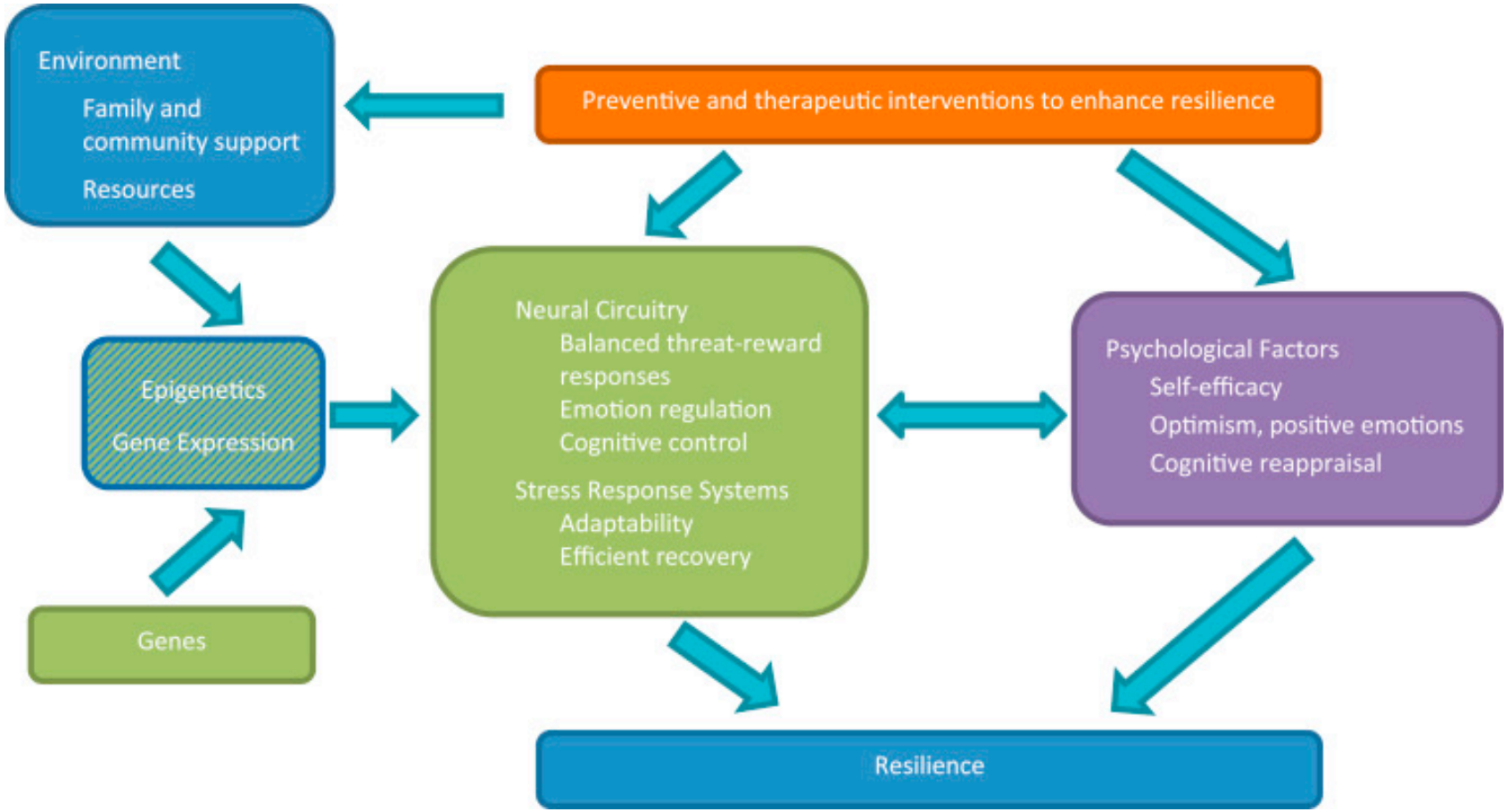
- Addressing trauma experience directly
- Treatment focused on resolution of trauma-related symptoms
- May require detailed trauma history as part of the treatment

Stress response: seeking allostasis



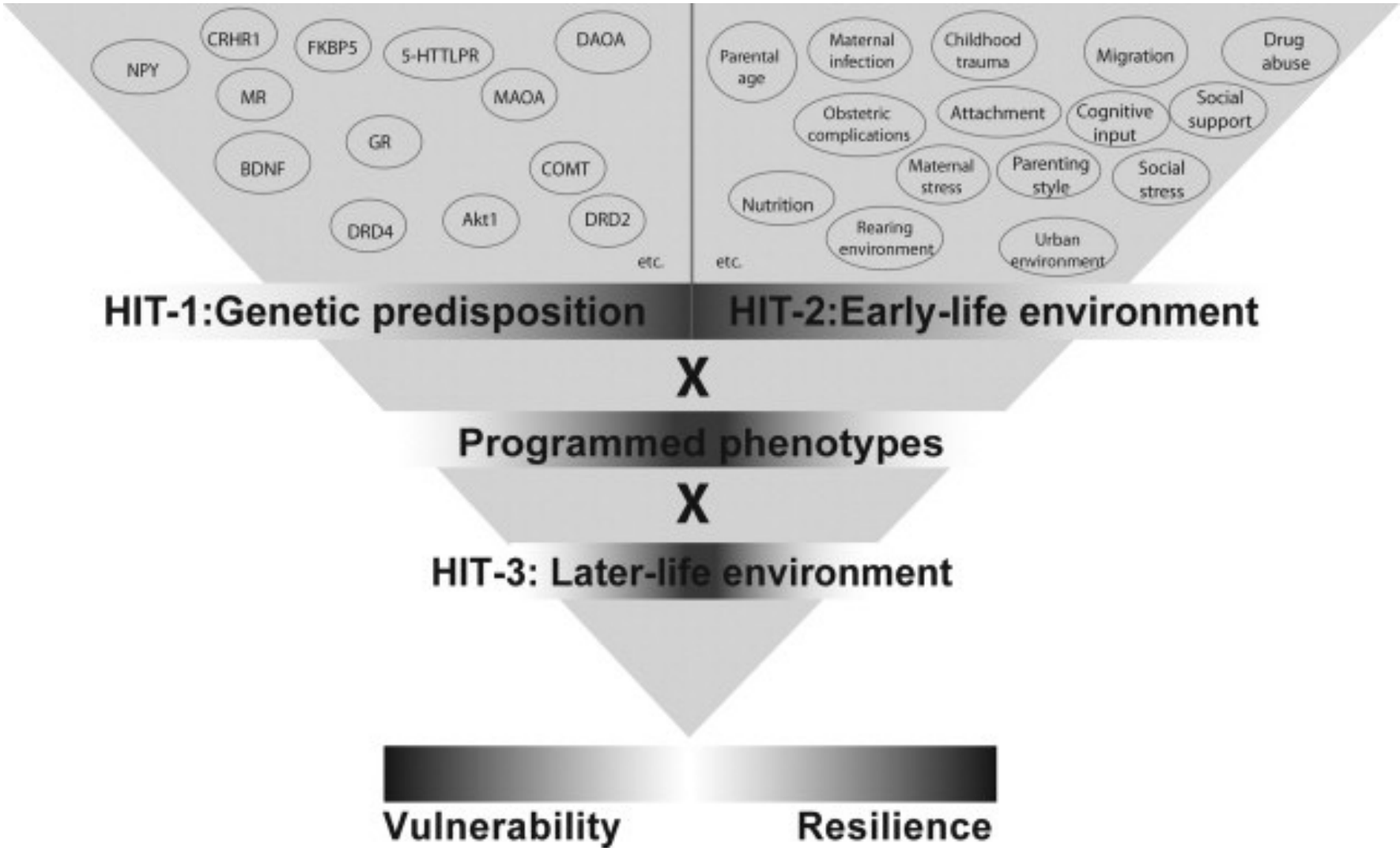
McEwen, JAMA Psychiatry 2017

Resilience



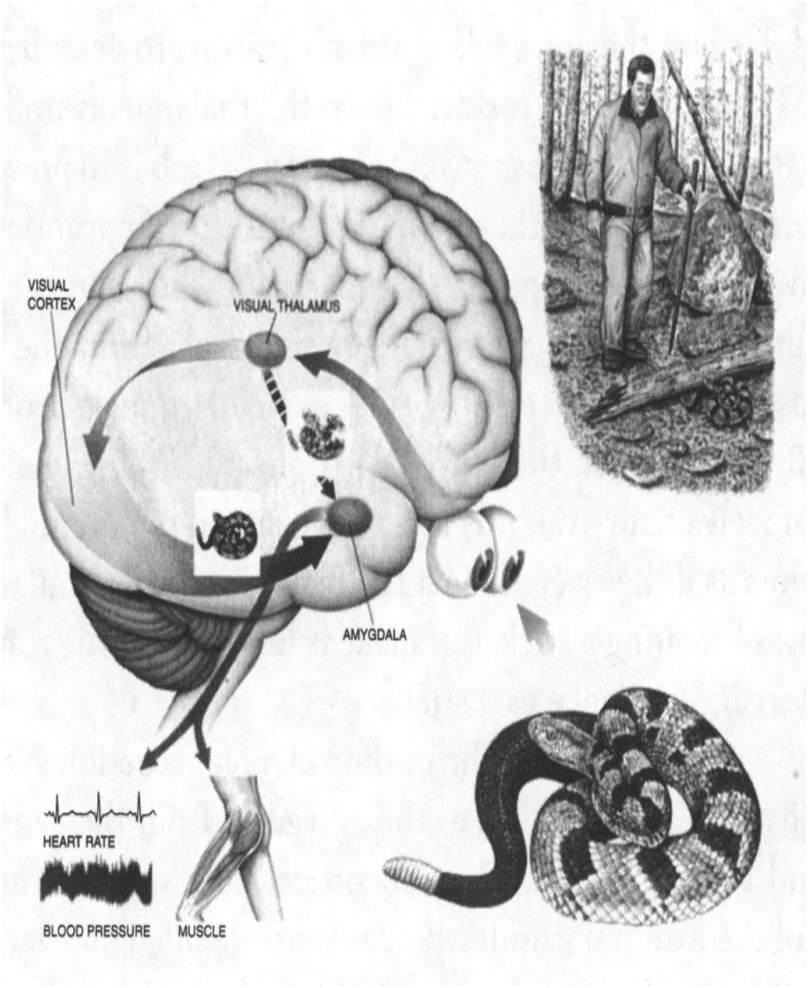
Feder A, Fred-Torres S, Southwick SM, Charney DS. The Biology of Human Resilience: Opportunities for Enhancing Resilience Across the Life Span. Biol Psychiatry. 2019 Sep 15;86(6):443-453. doi: 10.1016/j.biopsych.2019.07.012. Epub 2019 Jul 24. PMID: 31466561.

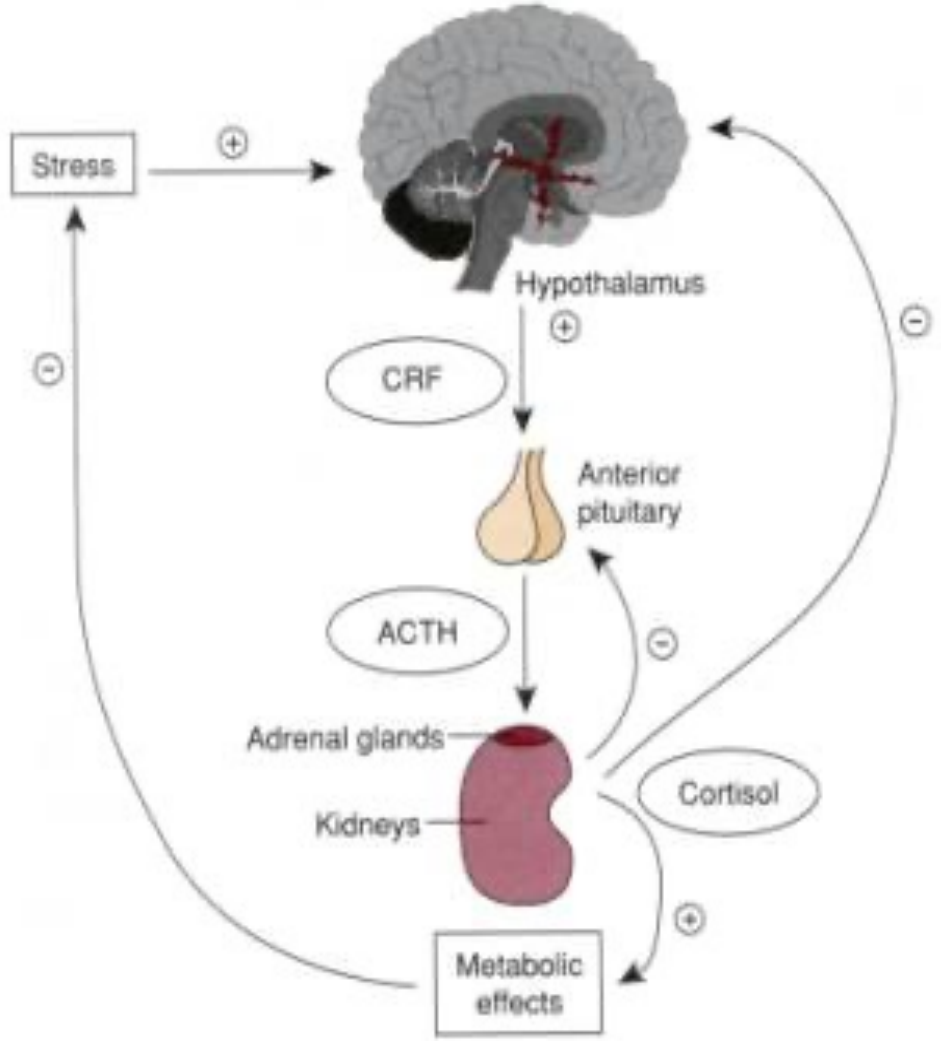
https://ifunny.co/picture/i-hate-that-moment-when-you-re-tired-and-sleepy-ggOJmYfu4?s=cl

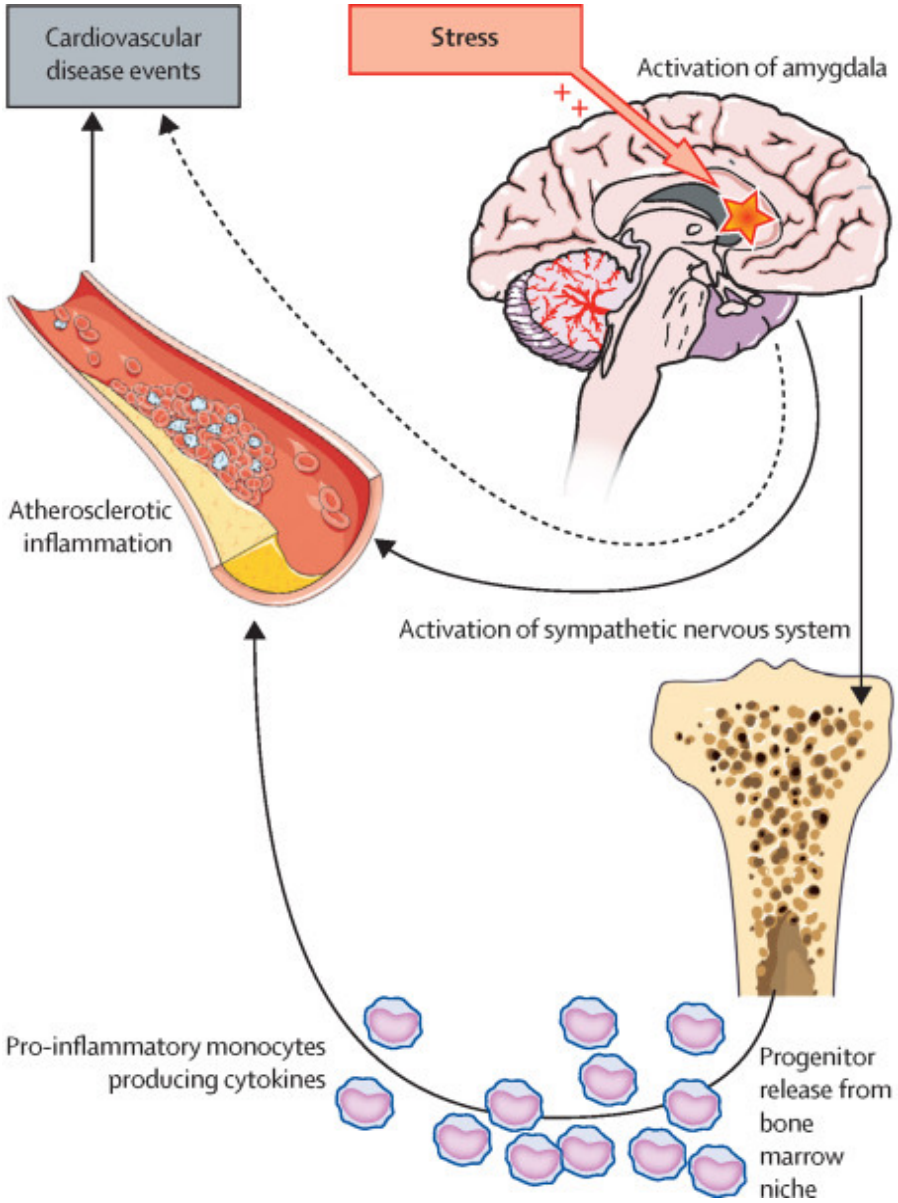


Daskalakis et al 2013

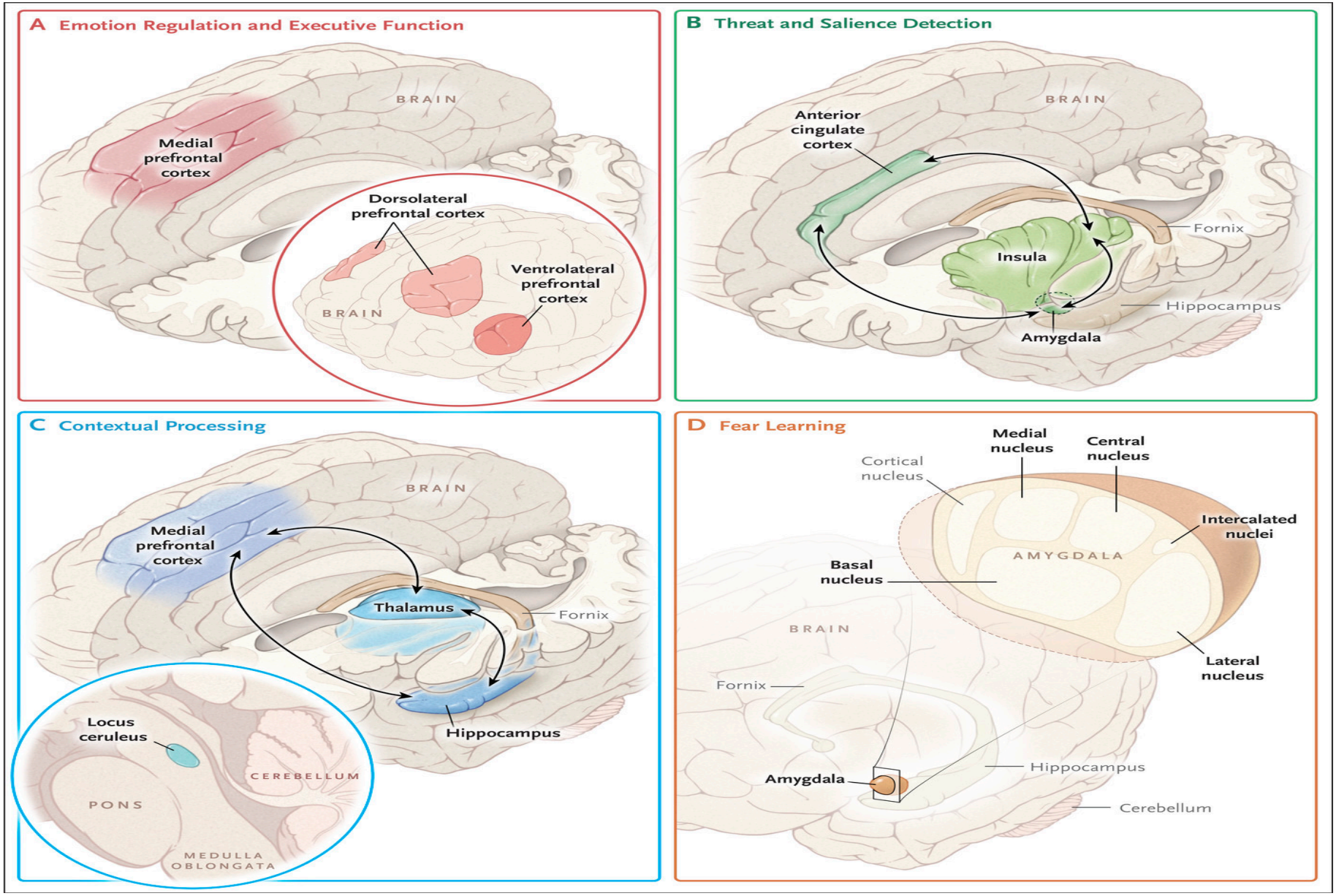
Neurobiopsychosocial perspective (or, sympatho-adrenergic stress responses)





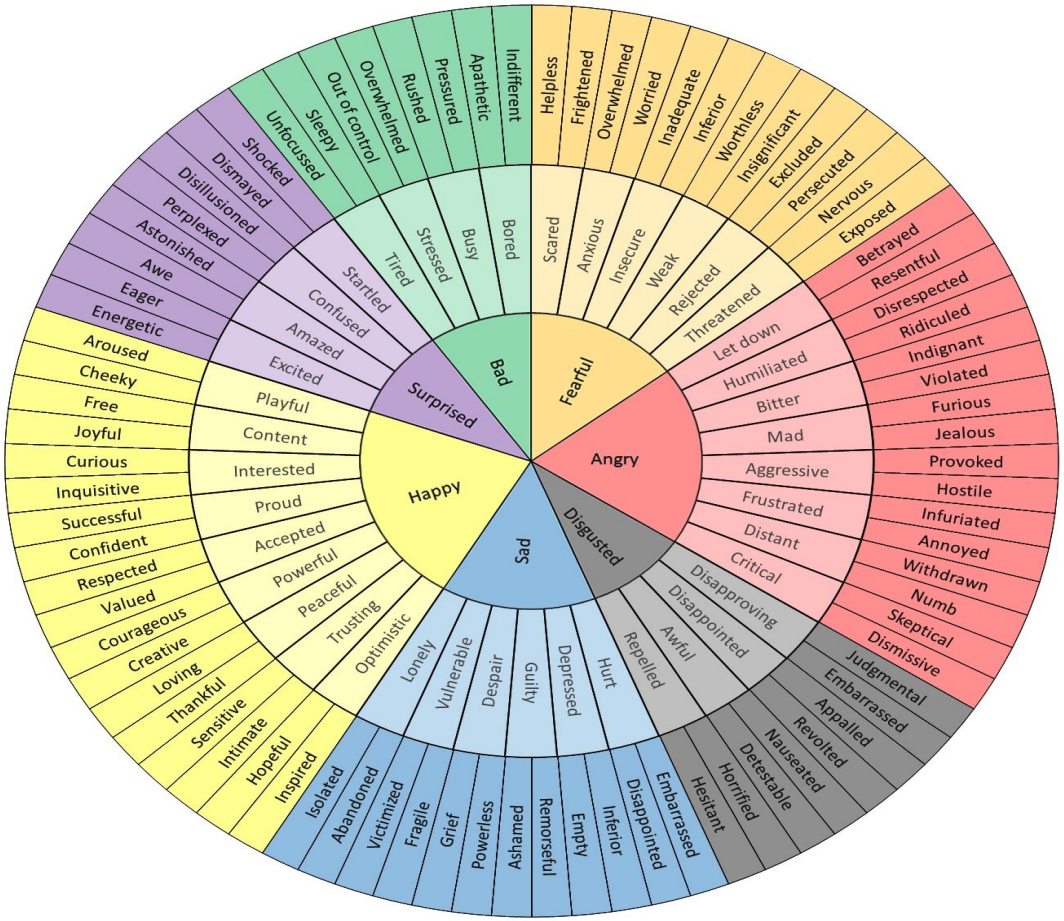


Tawakol, et al (2017)



Shalev A et al. N Engl J Med 2017;376:2459-2469.

Emotional Vocab Wheel



https://flowingdata.com/2020/03/20/wheel-of-emotional-words/

https://www.youtube.com/watch?v=N-lmeAGg26Y

Trauma and Stress-Related Disorders

- 4 categories of symptoms
  - Intrusion symptoms
  - Avoidance
  - Negative alterations in cognitions and mood
  - Alterations in arousal and reactivity (incl sleep disturbance)
- Time frames
  - Acute <3 months
  - Chronic >3 months
  - Delayed onset - >6 months after stressor
- Functional impact
- Heterogeneity: 636,120 ways to have PTSD

DSM-V, Galatzer-Levy and Bryant 2013

Delirium, Memory, and the ICU

- Factors contributing to altered memory in ICU patients
  - Life-threatening nature of illness, medical comorbidities
  - Treatments (sedatives, benzodiazepines, opiates)
  - Sleep disturbances
- ICU patients with delirium may clearly remember hallucinations and nightmares, but have difficulty remembering actual events
  - paranoid delusions, ie mistrust of staff or family
  - participation in treatment during admission
  - impact the patient's future physical and mental health

PTSD in Critical Illness Survivors

- PTSD prevalence 1-6 months post-ICU: 25-44%
- PTSD prevalence 7-12 months post-ICU: 17-44%

ICU risk factors for PTSD:

- Impaired Recall
- Post-ICU memories of frightening ICU experiences
- Benzodiazepine administration

Impact

- Decreased quality of life, increased risk of mortality, LOS, discharge to SNF/Rehab

Bolton et al 2021, Righy et al 2019, Prince et al 201, 8arker, Sricharoenchai et al 2015

Psychiatric symptoms after delirium

- Langan et al (2017)
  - Prevalence of depressive symptoms 3x greater in patients with vs without delirium (22.2% vs 8%)
  - No significant difference in prevalence of anxiety symptoms
  - Prevalence of PTSD symptoms inconclusive
- Shima et al (2020) – 12 month prevalence
  - Anxiety 33%
  - Depression 39%
  - PTSD 21%

Langan, Sarode et al *Psychogeriatrics* 2017

Post Intensive Care Syndrome (PICS)

- Impairments in cognitive, psychiatric and physical function that plague patients after an ICU stay
  - 60% Survivors of Critical Illness have at least one symptom of PICS
- Prevention includes coordination of care, communication among disciplines, maintaining good nutrition and sleep
- Family members may also be affected during and after the patient's ICU hospitalization (PICS-F)
  - Risk factors: poor communication with staff, decision making role, lower education level, or patient being close to death
  - Sleep deprivation, anxiety, depression, complicated grief and PTSD

Shima et al 2020
Needham DM, Davidson J, Cohen H, et al. Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. Crit Care Med. 2012;40(2):502-509.
Rawal G, Yadav S, Kumar R. Post-Intensive Care Syndrome: an Overview. Journal of Translational Internal Med. 2007. June; 5(2): 90-92.
Ahmad & Teo, 2021

From bench to bedside

Machtinger, Davis, Kimberg, Khanna, Cuca, Dawson-Rose, Shumway, Campbell, Lewis-O'Connor, Blake, Blanch, McGaw, 2019. Women's Health Issues

Universal Framing

Explain:

- **What** will be done
- **How** it will be done
- **Why** it is necessary

Say what you will do *before* you do it

"What can I do to help you be more comfortable?"

"If you want me to pause or stop, please ask or signal me."

Implications for the Clinical Encounter: critical awareness of role and context

- Screening
- Evaluation
- Prevention/prophylaxis
- Treatment
- Treatment referrals

The bedside exam

- **Trauma Informed Approach**
  - Knock on door[frame] and introduce oneself/others prior to entering
  - Ask about preference of door open or closed
  - When applicable, see if there is a chair to sit at eye level

- **Consider starting with cognitive testing**
  - "I'm going to start with a 2-minute exam of memory and concentration, if that's ok; then we can move on to hearing more about your experience"
  - If non-verbal, do CAM-ICU to get a sense of whether yes/no is reliable (ie when answering questions about pain) and SAVEAHAART to get a sense of how much they're attune to environment regardless of ability to demonstrate engagement. Can also ask basic commands.

The bedside interview

- Review of Systems
  - Can start with basics of pain, nausea, SOB, thirst, hunger, etc to create normalizing frame and also framework for understanding nature of psych symptoms
- If patient has adequate mental status for more of an interview, still avoid re-asking history
  - "I've reviewed your chart and don't want you to have to repeat all the history you've already shared."
  - "Is there anything that hasn't come up yet that you might want to add?"
  - "There are a few details I wanted to clarify to make sure we're offering as personalized a treatment as we can"

The bedside interview - 2

- Identify sources of resilience – supporting mature/adaptive defenses during period of vulnerability
- Consider risk for Post-ICU Syndrome (PICS) and provide context for mobilization efforts
- During the interview, keep an eye on the monitor – baseline and changes in HR? BP? O2 saturation?

Case 1: Impact of Trauma-Inquiry

You are caring for a new patient. The handoff that you receive lists social history of occasional alcohol, no tobacco or other substances, and a college education.

When reviewing the patient's prehospital medications, the list includes Prazosin at night. You ask the patient about this and she states that she takes the medication for nightmares, which she has experienced daily for years.

What is your follow up question?

How does this impact management?

Case 2: Impact of Procedures

You are following a patient in the unit with worsening hypoxemia who was non-emergently intubated. She is extubated after a few days, and you overhear her mentioning to nurses that the experience was "terrible."

She was previously pleasant and conversational but becomes increasingly irritable and terse with medical providers. She begins to refuse laboratory blood draws and becomes angry when residents arrive at bedside to examine her.

What may be ways to understand the patient's presentation?

What may be ways to help the patient reengage in treatment?

Case 3: Impact of Trauma on Colleagues

You assume care for a patient with known history of opioid abuse POD#2 following a major abdominal resection. You notice from the overnight sign-out that the patient is written for a small amount of PO pain medication, citing concern for the patient's substance abuse history.

During your shift, the patient begins to yell loudly at staff, becoming increasingly irritated and hostile that he is not receiving more medications for his surgical pain. Some of your colleagues attempt to express empathy for the patient. Other residents seem more on edge today and avoid his room.

What may be some ways to approach these reactions?

Other Cases?

Questions?

Thank you!

Acknowledgments

TIC in Critical Care Recovery	BWH Dept Psychiatry	RWJF Clinical Scholars
Daniela Lamas Stacey Salomon Gerald Weinhouse Anthony Massaro	David Silbersweig David Gitlin Sejal Shah Leena Mittal Joji Suzuki Jordan Rosen Katherine Kosman Jennifer Grimes, RA	Annie Lewis-O'Connor Samara Grossman Eve Rittenberg Hanni Stoklosa
Stepping Strong & FORTE Eric Goralnick Adil Haider Deepika Nehra	Go Team(s)!	V-Day & beyond Jeffrey Katz & team Mardi Chadwick Balcom Wanda McClain

References - 1

- Admon R, Milad MR, Hendler T. (2013) A causal model of post-traumatic stress disorder: disentangling predisposed from acquired neural abnormalities. Trends in Cognitive Sciences, 17(7).
- Amar, A., & Lewis-O'Connor, A. (2015) Trauma-Informed Care. In: Sigma Theta Tau, Nursing Knowledge International, tentatively titled, "A Practical Guide to Forensic Nursing: Incorporating forensic principles into nursing practice".
- American Psychiataric Association's Diagnostic and Statistical Manual of Mental Disorders (2013), 5th Edition: DSM-5. Arlington VA: American Psychiatric Publishing.
- Benjet C, Bromet E, Karam EG, et al. The epidemiology of traumatic event exposure worldwide: results from the World Mental Health Survey Consortium. Psychol Med. 2016;46(2):327-343
- Creamer M, Burgess P, McFarlane AC. Post-traumatic stress disorder: Findings from the Australian National Survey of Mental Health and Well-being. Psychol Med. 2001;31(7):1237–1247.
- Daskalakis NP, Bagot RC, Parker KJ, Vinkers CH, de Kloet ER. The three-hit concept of vulnerability and resilience: Toward understanding adaptation to early-life adversity outcome, Psychoneuroendocrinology, Volume 38, Issue 9, 2013, 1858–1873
- Fallot, R., & Harris, M. (2006) "Trauma Informed Services: A Self-Assessment and Planning Protocol." Community Connections.
- Felitti, Anda et al., (1997). "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study." American Journal of Preventive Medicine, 14, 4, 245-258.
- Felitti V, Anda R et al (1998) Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine. **14** (4): 245–258.
- Grant BF, Chou SP, Goldstein RB, Huang B, Stinson FS, Saha TD, et al. Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. J Clin Psychiatry. 2008;69:533–45.
- Galatzer-Levy IR and Bryan RA (2013) 636,120 Ways to Have Posttraumatic Stress Disorder. Perspectives on Psychological Science 8(6) 651-662.
- Huang, L.N., Sharp, C.S., Gunther, T. SAMHSA and National Council for Behavioral Health webinar 8/6/13. "It's Just Good Medicine: Trauma Informed Primary Care." www.integration.samhsa.gov
- Jain KM, Davey-Rothwall, et al (2018) PTSD, Neighborhood Residency and Satisfaction, and Social Network Characteristics among underserved women in Baltimore, Maryland. Women's Health Issues, p1-8
- Karam EG, Friedman MJ, Hill ED, et al (2014). Cumulative traumas and risk thresholds: 12-month PTSD in the World Mental Health (WMH) Surveys. Depress Anxiety; 31:130-42
- Kessler RC, Rose S, Koenen KC, et al. (2015) How well can post-traumatic stress disorder be predicted from pre-trauma risk factors? An exploratory study in the WHO World Mental Health Surveys. World Psychiatry 13:265.
- Kessler, R.C., Berglund, P., Delmer, O., Jin, R., Merikangas, K.R., & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62(6)*: 593-602.

References - 2

- Kubzansky L, Bordelais P, Jun HJ et al. (2014) The weight of traumatic stress: a prospective study of PTSD symptoms and weight status in women. JAMA-Psych 71:1:44-51
- LeDoux JL (1994) Emotion, Memory and the Brain. Scientific American.
- Lewis-O'Connor, A. & Alpert, E. (2017) Caring for Survivors Using a Trauma Informed Care Framework. Human Trafficking Is a Public Health Issue: A Paradigm Expansion in the United States. Editors: Makini Chisolm-Straker, Hanni Stoklosa.
- Lewis-O'Connor, A. & Chadwick, M. (2015). Voice of the patient: informing research, policy and practice on violence against women. Journal of Forensic Nursing, 11:4, 188-197.
- McEwan, BS Allostasis and the Epigenetics of Brain and Body Health Over the Life Course The Brain on Stress JAMA Psychiatry. Published online April 26, 2017. doi:10.1001/jamapsychiatry.2017.0270
- McEwen BS, Gray JD, Nasca C. 60 Years of Neuroendocrinology: Redefining Neuroendocrinology: stress, sex and cognitive and emotional regulation. Journal of Endocrinology 2015. 226, T67-83
- Perez DL, Matin N, Barsky A, Costumero-Ramos V, et al (2017) Cingulo-insular structural alterations associated with psychogenic symptoms, childhood abuse and PTSD in functional neurological disorders. J Neurol Neurosurg Psychiatry. 2017 Jun;88(6):491-497
- Perez DL et al. A Neural Circuit Framework for Somatosensory Amplification in Somatoform Disorders J Neurol Neurosurg Psychiatry 2015 doi:10.1136/jnnp-2016-314998
- Roberts AL, Agnew-Blais JC, Spiegelman D, Kubzansky LD, et al (2015). PTSD and incidence of type 2 diabetes mellitus in a sample of women: a 22-year longitudinal study.
- Rosen RL, Levy-Carrick NC, Reibman J, Xu N, Shao Y, Liu M, Ferri L, Kazeros A, Caplan-Shaw CE, Pradhan DR, Marmor M, Galatzer-Levy IR. (2017)Elevated C-reactive protein and posttraumatic stress pathology among survivors of the 9/11 World Trade Center attacks. Journal of Psychiatric Research 89, 14-21
- Santaularia et al (2014) Relationships between sexual violence and chronic disease: a cross-sectional study. BMC Public Health 14:1286
- Shalev A, Liberzon I, Marmar C. Post-Traumatic Stress Disorder. New England Journal of Medicine 2017 376;25.
- Tawakol A, Ishai A, Takx RAP, Figueroa AI, Ali A, Kaiser Y, Truong QA, Solomon CJE, Calcagno C, Mani V, Tang CY, Mulder WJM, Murrough JW. Relation between resting amygdalar activity and cardiovascular events: a longitudinal and cohort study. Lancet, Volume 389, Issue 10071, 2017, 834–845. Warshaw, Carole. "Creating Trauma Informed Services and Organizations." Faulkner Hospital Grand Rounds, October 30th, 2014.
- Winning A, Gilsanz P, Koenen KC, et al. (2017) PTSD and 20-year physical activity trends among women. Am J Prev Med 52(6) 753-760.
- https://www.ptsd.va.gov/professional/ptsd-overview/epidemiological-facts-ptsd.asp
- http://www.medscape.org/viewarticle/751769_transcript
- 2010 National Epidemiologic Survey on Alcohol and Related Conditions
- "The Adverse Childhood Experiences (ACE) Study". *cdc.gov*. Atlanta, Georgia: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. May 2014. Archived from the original on 27 December 2015.

References - 3

- Hariyanto, Putri, C., Hananto, J. E., Arisa, J., Fransisca V Situmeang, R., & Kurniawan, A. (2021). Delirium is a good predictor for poor outcomes from coronavirus disease 2019 (COVID-19) pneumonia: A systematic review, meta-analysis, and meta-regression. Journal of Psychiatric Research, 142, 361–368. https://doi.org/10.1016/j.jpsychires.2021.08.031

- Madonna, Enrico, P., Ciappolino, V., Boscutti, A., Colombo, E., Turtulici, N., Cantù, F., Cereda, G., Delvecchio, G., De Falco, S., Chierichetti, M., Savioli, M., Grasselli, G., & Brambilla, P. (2022). Factors Associated With Severity of Delirium Complicating COVID-19 in Intensive Care Units. *Frontiers in Neurology*, *13*, 774953–774953. https://doi.org/10.3389/fneur.2022.774953

- Fabrazzo, Russo, A., Luciano, M., Camerlengo, A., Catapano, P., Amoroso, B., Catapano, F., & Coppola, N. (2022). Delirium and Psychiatric Sequelae Associated to SARS-CoV-2 in Asymptomatic Patients With Psychiatric History and Mild Cognitive Impairment as Risk Factors: Three Case Reports. Frontiers in Psychiatry, 13, 868286–868286. https://doi.org/10.3389/fpsyt.2022.868286

- De Sousa Moreira, Barbosa, S. M. B., Vieira, J. G., Chaves, N. C. B., Felix, E. B. G., Feitosa, P. W. G., da Cruz, I. S., da Silva, C. G. L., & Neto, M. L. R. (2021). The psychiatric and neuropsychiatric repercussions associated with severe infections of COVID-19 and other coronaviruses. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, *106*, 110159–110159. https://doi.org/10.1016/j.pnpbp.2020.110159

- Prince, Gerstenblith, T. A., Davydow, D., & Bienvenu, O. J. (2018). Psychiatric Morbidity After Critical Illness. *Critical Care Clinics*, *34*(4), 599–608. https://doi.org/10.1016/j.ccc.2018.06.006

- Nordness, Bipin Patel, M., Erickson, C. R., Kiehl, A., Jackson, J. C., Raman, R., Pandharipande, P. P., Ely, E. W., & Wilson, J. E. (2021). Depression predicts long-term cognitive impairment in survivors of critical illness. The Journal of Trauma and Acute Care Surgery, 90(1), 79–86. https://doi.org/10.1097/TA.0000000000002955

- Ahmad, & Teo, S. P. (2021). Post-intensive Care Syndrome. Annals of Geriatric Medicine and Research, 25(2), 72–78. https://doi.org/10.4235/agmr.21.0048

References - 4

- Voiriot, Oualha, M., Pierre, A., Salmon-Gandonnière, C., Gaudet, A., Jouan, Y., Kallel, H., Radermacher, P., Vodovar, D., Sarton, B., Stiel, L., Bréchot, N., Préau, S., & Joffre, J. (2022). Chronic critical illness and post-intensive care syndrome: from pathophysiology to clinical challenges. Annals of Intensive Care, 12(1), 58–58. https://doi.org/10.1186/s13613-022-01038-0
- Shima, Miyamoto, K., Shibata, M., Nakashima, T., Kaneko, M., Shibata, N., Shima, Y., & Kato, S. (2020). Activities of daily living status and psychiatric symptoms after discharge from an intensive care unit: a single-center 12-month longitudinal prospective study. Acute Medicine & Surgery, 7(1), e557–n/a. https://doi.org/10.1002/ams2.557
- Watanabe, Liu, K., Nakamura, K., Kozu, R., Horibe, T., Ishii, K., Yasumura, D., Takahashi, Y., Nanba, T., Morita, Y., Kanaya, T., Suzuki, S., Lefor, A. K., Katsukawa, H., & Kotani, T. (2022). Association between Early Mobilization in the ICU and Psychiatric Symptoms after Surviving a Critical Illness: A Multi-Center Prospective Cohort Study. Journal of Clinical Medicine, 11(9), 2587. https://doi.org/10.3390/jcm11092587
- Misak, Herridge, M., Ely, E. W., Clay, A., & Mikkelsen, M. E. (2021). Patient and Family Engagement in Critical Illness. Critical Care Medicine, 49(9), 1389–1401. https://doi.org/10.1097/CCM.0000000000005136
- Bolton, Thilges, S., Lane, C., Lowe, J., & Mumby, P. (2019). Post-traumatic Stress Disorder Following Acute Delirium. Journal of Clinical Psychology in Medical Settings, 28(1), 31–39. https://doi.org/10.1007/s10880-019-09689-1
- Grover, Sahoo, S., Chakrabarti, S., & Avasthi, A. (2019). Post-traumatic stress disorder (PTSD) related symptoms following an experience of delirium. Journal of Psychosomatic Research, 123, 109725–109725. https://doi.org/10.1016/j.jpsychores.2019.05.003
- Latour, Kentish-Barnes, N., Jacques, T., Wysocki, M., Azoulay, E., & Metaxa, V. (2022). Improving the intensive care experience from the perspectives of different stakeholders. Critical Care (London, England), 26(1), 1–218. https://doi.org/10.1186/s13054-022-04094-x
- https://www.psychiatry.org/psychiatrists/cultural-competency/education/stress-and-trauma/indigenous-people#:~:text=Intergenerational%20Trauma%3A%20The%20intergenerational%20and,spiritual%20practices%2C%20language%20and%20culture.
- https://www.acesaware.org/wp-content/uploads/2022/01/Trauma-resillience-practice-paper.pdf
- https://www.medicalnewstoday.com/articles/the-impact-of-historical-trauma-on-american-indian-health-equity