Applying the ACE Study to Homeless Populations: A Brief Interprofessional Training Workshop

Damian Carrillo, Ashley Coulter, Darius Dawson, Marianela Guzman, Arpita Kabaria, Lucy Krivitsky, & Amelia Stanton

In partnership with Austin-Travis County Integral Care (ATCIC) and Heather Larkin, PhD

Outline of Proposed Training

- Origins of ACE Study
- Description of ACE Study
- Outcomes of ACE Study
- Applying knowledge of ACE study when working with individuals experiencing homelessness
- Case Study: how can you apply what you have learned?
- Summary and Future Directions

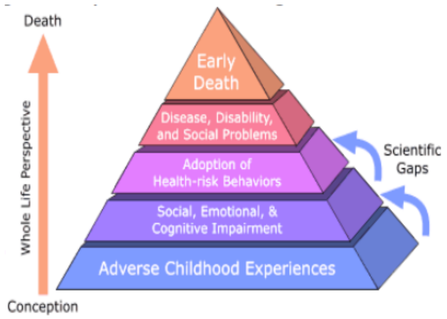
Origins of the ACE Study

- Early research demonstrated that risk factors (smoking, drinking, etc.) for many chronic diseases were not randomly distributed
- Risk factors tended to cluster, meaning that a person exhibiting one risk factor usually had other risk factors as well
- ACE Study asked:
  - "If risk factors for disease, disability, and early mortality are not randomly distributed, what influences precede the adoption or development of them?"
- Felitti, Anda, and colleagues (1998) teamed together to develop a large-scale epidemiologic study of the influence of stressful and traumatic childhood experiences on the origins of behaviors that underlie:
  - Leading causes of disability
  - Social problems
  - Health-related behaviors
  - Causes of death in the United States

The ACE Study

- Collaboration between Center for Disease Control and Prevention and Kaiser Permanente
- Between 1995 and 1997 more than 17,000 HMO members have provided detailed information about experiences of childhood maltreatment while undergoing comprehensive physical examination
- Participants completed confidential surveys that contained questions related to childhood maltreatment and dysfunctional family experiences
- They also completed detailed items related to their current health status and behaviors
- Adverse childhood events were defined as:
  - Emotional Abuse
  - Physical Abuse
  - Emotional/Physical Neglect
  - Substance use by Household Member
  - Mentally Ill Household Member
  - Suicidal Household Member
  - Domestic Abuse in Household
  - Imprisoned Household Member
- The ACE score:
- 1 point was attributed for each category (out of the total 10) of ACE occurring prior to age 18
- Minimum = 0; maximum = 10

Figure 1: ACE model



(CDC, 2014)

Table 1: ACE categories in general sample

Adverse Childhood Experience	% of Sample Affected
Emotional Abuse	10%
Physical Abuse	26%
Sexual Abuse	21%
Emotional Neglect	15%
Physical Neglect	10%
Mother Treated Violently	13%
Mental Illness in Household	20%
Substance Use in Household	28%
Parental Separation/Divorce	24%
Household Member Imprisoned	6%

(Anda & Felitti, 2013)

Table 2: ACE scores in homeless population

ACE Score Distribution (Cumulative Percentages)			
		Regions	
ACE Score	Percent (%) (n=224)	CA % (n=137)	NY % (n=71)
0	13	12	17
0-1	27	23	35
0-2	36	36	54
0-3	41	41	61
0-4	54	54	65
0-5	65	65	76
0-6	77	77	80
0-7	85	85	89
0-8	93	93	92
0-9	96	96	99
0-10	100	100	100

(Larkin & Park, 2012)

Higher ACE Scores Associated with

- Higher likelihood of mental health problems:
  - Depressive disorders
  - Anxiety
  - Hallucinations
  - Panic
  - Sleep disturbances
  - Memory disturbances
- Sexual and reproductive health concerns:
  - Early age at first intercourse
  - Sexual dissatisfaction
  - Teen pregnancy
  - Unintended pregnancy
  - Teen paternity
  - Fetal death
- General health and social problems:
  - High perceived stress
  - Headaches
  - Impaired job performance
  - Relationship problems
  - Marriage to an alcoholic
  - Risk of perpetuating or being a victim of domestic abuse
  - Premature mortality for family members

Homelessness in Austin

- On a given night, 2,300+ people living on the streets of Austin
- 900+ considered chronically homeless (homeless for over one year or 4x in the past 3 years)
- Homeless Management Information System (HMIS) indicates 5,800+ people access homeless services each year
- Estimated that 40-50% of a city's chronically homeless population (360-450 people in Austin) at high risk for imminent death
- According to US Department of Housing and Urban Development (2011) family homelessness is the fastest growing segment of the homeless population
- ACEs in those experiencing homelessness:
  - In a recent study, 87% of individuals experiencing homelessness had at least one ACE; over half had four or more (Larkin, Shields, & Anda, 2012)
  - Relationship between adverse childhood experiences and homelessness partially mediated by mental health conditions, including schizophrenia and mood disorders (which have higher prevalence rates among homeless individuals than in the general population)
  - Implications of high ACE scores for treatment of individuals experiencing homelessness:
    - Improve access to ACE-informed care
    - With family homelessness on the rise, reduce intergenerational ACE transmission
    - Intersection of high ACE scores and mental health problems in individuals experiencing homelessness: how might treatment change and/or be shaped by knowledge of ACEs?

Case Study

B.L. is a 46 year old female that presented to the ER alert and oriented about 6 weeks ago. The ER team found her with altered mental status and informed ER team that she has Type II diabetes. Due to a hypoglycemic episode, the team responded with an injection of glucagon to restore consciousness. Based on an assessment, the doctor provides a list of medications and reminds her of proper diabetic control, including her regimen for her insulin therapy. She was discharged with the nurse, who ascertained that the patient understood her regimen. B.L. picked up her medications at the pharmacy and was sent to social services, where her case-worker determined that she was kicked out of her public housing for the second time due to drunk and disorderly conduct and presents her with similar options.

Applying Knowledge of ACE Study in this Case

- As a **Medical Professional** (doctor, nurse, pharmacist)
  - The nurse in addition to any member of the medical team could administer the ACE questionnaire
    - For example: physical abuse, sexual abuse, substance use by household member, domestic abuse in household, emotional neglect and physical neglect =ACE score 6
  - The doctor could utilize ACE knowledge to reframe the patient's substance abuse problem as a symptom of an underlying concern; this will validate the patient's experience, which is likely to increase engagement and adherence
  - The pharmacist could utilize knowledge related to the ACE study to find out potential barriers to medication adherence such as low value for self-care
- As a **Social Service Provider** (social worker)
  - Assuming an integrated system is in place, social services has access to past medical records, including ACE questionnaire results
  - Because she has been kicked out of housing twice due to drinking, the case-worker might address and work with the patient to process the potential underlying causes for drinking
- As a **Behavioral Health Specialist** (psychologist, counselor)
  - According to the ACE model, any individual involved in the care of a patient, should be trained to identify ACE related outcomes and appropriately refer the patient to a psychologist or clinical social worker
  - Consequently, mental health professionals will use motivational interviewing, trauma psychoeducation, and teaching self-care skills to elicit behavior change, as well as work through traumatic events

Summary and Future

- Child maltreatment and related adverse experiences have broad implications for psychological and physical development, particularly with respect to individuals who are experiencing homelessness
- Because the ACE study was designed to provide a public health perspective on the prevalence of ACEs and the relationship to later life consequences, the data from the initial study and subsequent studies is relevant and influential across professions (Larkin et al., 2012)
- By recognizing the high prevalence of elevated ACE scores in homeless individuals who are seeking social services and/or mental health treatment, YOU can provide validation, address underlying concerns, and thus IMPROVE THEIR CARE
- We need more research on:
  - ACE scores in other vulnerable groups
  - Outcomes of ACE-informed care and treatment
  - Perceived helpfulness of ACE-informed services

The University of Texas at Austin
School of Social Work

REFERENCES

1. Anda, R. F., Dong, M., Brown, D. W., Felitti, V. J., Giles, W. H., Perry, G. S., ... & Dube, S. R. (2009). The relationship of adverse childhood experiences to a history of premature death of family members. BMC public health, 9(1), 106.
2. Anda, R. F., & Felitti, V. J. (2003). Origins and essence of the ACE study. ACE Reporter, 1-4
3. Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. European archives of psychiatry and clinical neuroscience, 256(3), 174-186.Anda et al., 2007
4. Anda, R., Tietjen, G., Schulman, E., Felitti, V., & Croft, J. (2010). Adverse childhood experiences and frequent headaches in adults. Headache: The Journal of Head and Face Pain, 50(9), 1473-1481.
5. Center for Disease Control and Prevention (2014). Violence prevention: child maltreatment. http://www.cdc.gov/violenceprevention/childmaltreatment/index.html
6. Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. Child abuse & neglect, 28(7), 771-784.
7. Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (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.
8. Larkin, H., Shields, J. J., & Anda, R. F. (2012). The health and social consequences of Adverse Childhood Experiences (ACE) across the lifespan: An introduction to prevention and intervention in the community. Journal of prevention & intervention in the community, 40(4), 263-270.
9. Roos, Leslie E., et al. "Relationship between adverse childhood experiences and homelessness and the impact of axis I and II disorders." American journal of public health 103.S2 (2013): S275-S281.
10. Herman, D B et al. "Adverse Childhood Experiences: Are They Risk Factors for Adult Homelessness?" American Journal of Public Health 87.2 (1997): 249–255. Print.
11. Montgomery, Ann Elizabeth, et al. "Relationship among adverse childhood experiences, history of active military service, and adult outcomes: homelessness, mental health, and physical health." American journal of public health 103.S2 (2013): S262-S268.
12. Chapman, D., & Whitfield, C. (2004). Journal of Affective Disorders.Adverse Childhood Experiences and the Risk of Depressive Disorders in Adulthood, 82(2), 217-225.
13. Larkin, H., & Park, J. (2012). Adverse childhood experiences (ACE), service use, and service helpfulness among people experiencing homelessness. Albany, New York: University at Albany School of Social Welfare.

ACKNOWLEDGEMENTS

This project was supported by Dr. Barbara Jones, Dr. John Luk, and Dr. Heather Larkin. Special thanks to Jen Currin-McCulloch and Gabrielle Del Rey.