The Aging Brain and Trauma-Related Events:
A review of relevant research findings & ACL/AoA programs for this population

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The Neurocognitive and Psychosocial Impacts of Violence: A workshop
The National Academies of Sciences, Engineering, & Medicine
August 1, 2017
Today’s agenda

- **Background (i.e. What do we know?)**
  - A growing older-adult population
  - Age-related changes to brain structure & function
  - Sources of trauma experienced by older adults
  - Impact of trauma-related stress on brain structure & function

- **ACL/AoA programs for this population (i.e. What are we doing?)**
  - Physically-induced trauma
    - Falls-prevention programs for older adults
    - Traumatic Brain Injury programs for older adults
  - Historical trauma
    - Trauma-Informed Supportive Services for Holocaust Survivors
  - Interpersonal-induced trauma
    - National Indigenous Elder Justice Initiative Program

- **Discussion/Next Steps (i.e. What could we be doing?)**
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- **Discussion/Next Steps (i.e. What could we be doing?)**
The United States (and World) is getting older

Older adults as a population segment are growing in both the US and across the world.

Demographic trends underscore importance for research and policies to address the needs and changes this growing population experience as they age.

Age-related changes in brain structure & function

Healthy aging brings with it changes to the structural integrity of the brain. Both white and grey matter can experience declines in volume and integrity → what about brain function?

Sources: Adapted from Hedden and Gabrieli, Nature Reviews Neuroscience, 2004
Age-related changes in brain structure & function

There is good convergence in the aging literature there are certain functions that may decline: **attention, episodic memory, and executive functioning**

Some functions are largely preserved: **verbal memory + real-world knowledge**

Sources: Adapted from Hedden and Gabrieli, Nature Reviews Neuroscience, 2004; Park and Reuter-Lorenz, Annual Review of Psychology, 2009
Sources of trauma experienced by older adults

Physically-induced trauma

- **1 in 3** Americans aged 65+ falls every year\(^1\)

- **Falls leading cause** of both fatal and nonfatal injuries for those 65+\(^2\)

- Falls in this age group resulted in over **2.8M emergency room visits** and **over 800K hospitalizations**\(^3\)

- **81% of traumatic brain injuries** in adults aged 65+ are caused by falls\(^4\)

Sources of trauma experienced by older adults

Historical trauma
- Refers to “multigenerational trauma experienced by a specific cultural, racial, or ethnic group”\(^1\)
- Identified in survivors of the Holocaust and communities of Indigenous Americans\(^1\)

Interpersonal-induced trauma
- \textit{~1 in 10 Americans 60+} has experienced some form of elder abuse (e.g., neglect, physical/emotional/sexual abuse, abandonment) w/some \textbf{estimates of 5M elders abused each year}\(^2\)
- \textbf{Only 1 in 14} cases are estimated to be reported\(^2\)

Sources: \(^1\)Administration for Children & Families: Resource Guide to Trauma-Informed Human Services. [https://www.acf.hhs.gov/trauma-toolkit/trauma-concept](https://www.acf.hhs.gov/trauma-toolkit/trauma-concept);
Healthy aged research participants with high levels of plasma cortisol were found to have declines in hippocampal (HIPP) brain volume\(^1\).

Same study showed that these participants exhibited impairments in tasks measuring memory performance\(^1\).

Sources: \(^1\)Adapted from Lupien et al., Nature Neuroscience, 1998; \(^2\)Adapted from Golier et al., American Journal of Psychiatry, 2002
Traumatic stress on brain structure & function

- Decreasing/Moderate Cortisol
- Increasing/High Cortisol

HIPP volume declined in high cortisol group

Sources: 1. Adapted from Lupien et al., Nature Neuroscience, 1998; 2. Adapted from Golier et al., American Journal of Psychiatry, 2002
A brief recap...
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- **Discussion/Next Steps (i.e. What could we be doing?)**
The Administration for Community Living (ACL)

- **Mission**
  - Maximize the independence, well-being, and health of older adults, people with disabilities across the lifespan, and their families

- **ACL’s administrator oversees four program offices:**
  - Administration on Aging (AoA)
  - Administration on Disabilities (AoD)
  - National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)
  - Center for Integrated Programs (CIP)
ACL-funding of falls prevention programs

Goals?

- Increase the number of older adults and older adults with disabilities who participate in evidence-based community falls prevention programs
- Implement innovative funding arrangements to support those programs beyond grant period

Who is eligible?

- State agencies (aging/public health)
- Nonprofit aging and public health organizations
- Area agencies on aging
- Tribal governments and tribal organizations
- Universities
## Snapshot of evidence-based falls prevention programs from ACL-grantees

<table>
<thead>
<tr>
<th>↓Fear, ↑Activity Levels, ↑Education</th>
<th>Building strength and balance</th>
<th>↑Physical Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A Matter of Balance</td>
<td>• FallScape</td>
<td>• Tai Ji Quan (Moving for Better Balance)</td>
</tr>
<tr>
<td>• Stepping On</td>
<td>• Otago</td>
<td>• Tai Chi for Arthritis</td>
</tr>
</tbody>
</table>
Reach and impact of ACL-funded grantees

Between September 2014-March 2017, over 36,814 individuals have enrolled in ACL-grantee supported falls prevention programs

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Alone</td>
<td>48%</td>
</tr>
<tr>
<td>Average Age</td>
<td>76</td>
</tr>
<tr>
<td>Reported at least one fall in last three month</td>
<td>30%</td>
</tr>
<tr>
<td>At least one chronic condition</td>
<td>89%</td>
</tr>
<tr>
<td>Disability</td>
<td>39%</td>
</tr>
<tr>
<td>Report fearing falls “somewhat” or “a lot”</td>
<td>50%</td>
</tr>
<tr>
<td>Report (at post-test) that the program helped reduce fear of falling</td>
<td>89%</td>
</tr>
</tbody>
</table>
ACL began funding a national resource center for falls prevention in 2014

- ↑ Public awareness and education for consumers and professional about risk of falls and best practices for falls prevention

- ↓ Reduce incidence of falls among older adults and adults with disabilities by supporting evidence-based falls programs
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- **Discussion/Next Steps (i.e. What could we be doing?)**
Traumatic Brain Injury (TBI) (H21) State Implementation Partnership Grant Program

Goals?

- Address barriers to needed services encountered by children, youth, and adults with TBI

- Increase access to rehabilitation and other services by:
  - Screen to identify individuals with TBI
  - Build a trained TBI workforce by providing professional training
  - Provide information about TBI to families and referrals to appropriate service providers
  - Facilitate access to needed services through resource facilitation
Grantee: Massachusetts Rehab. Commission

Goals:

- **Improve awareness, screening and identification** of elders who sustain a TBI
- **Improve access to appropriate information, resources, services, and supports** for elders who sustain TBI and their families
- **Utilize “No Wrong Door” approach**: simplifies/streamlines consumer-directed access and coordination of services for this high-risk population

Sample Activities:

- Educational and outreach to build a trained TBI workforce (goal of training 1,000 professionals by May 2018)
- Deliver a 6 module web-based course about TBI in older adults
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Advancing person-centered trauma-informed (PCTI) supportive services for Holocaust Survivors

In FY 2015, $2.5M was appropriated “to help provide supportive services for aging Holocaust survivors living in the United States”

- Advance innovations in the delivery of supportive services to Holocaust survivors
  - Infuse principles of trauma-informed care into current practice
  - Build and strengthen partnerships
  - Foster innovation in service delivery
Unique issues impacting Holocaust Survivors

- ↑ rates of physical and emotional distress
- ↑ rates of anxiety disorders and sleep disturbances, and higher use of psychiatric medications
- “Obsession” with death
- Excessive guilt and nightmares
- Lack of language to use to share experiences
Sub-grantee: The Jewish Family Services of Columbus, Ohio

- 240+ Survivors in Columbus
- Majority live below or close to poverty
- A large number lack transportation to essential and life enriching destinations
- Majority need more home care services

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total Number of Survivors</th>
<th>Former Soviet Union</th>
<th>Medicaid Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 +</td>
<td>34</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td>80-89</td>
<td>115</td>
<td>87</td>
<td>85</td>
</tr>
<tr>
<td>70-79</td>
<td>92</td>
<td>79</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>241</td>
<td>193 (80%)</td>
<td>180 (75%)</td>
</tr>
</tbody>
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Adopting a person-centered trauma informed care (PCTI) framework by:

- Creating a **calm supportive atmosphere**
- Treating each client with **respect, patient, and kindness**
- **Appreciating each client’s** talents and strength of character
- **Talk less and listen** more
- Recognize there **may be no “fix” or “rescue”**
- Bring him or her **back to the present moment**
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National Indigenous Elder Justice Initiative (NIEJI)

- **NIEJI** “created to address lack of culturally appropriate information and community education materials on elder abuse, neglect, and exploitation in Indian Country”
  - Create content on how to define and recognize elder abuse in Indian Country

- **Educate everyone on elder abuse and neglect**, and learn ways on how to help prevent it

- **Creation of culturally-relevant materials** providing viewers with training tools and information about elder abuse and neglect
Perceptions & attitudes of elder abuse among Indigenous elder populations

- Indigenous elders reported to **view certain abusive behaviors as more serious than other ethnic groups** (African Americans and Caucasian)\(^1\)

- Survey respondents **perceive elder abuse to occur as often as child abuse** although data suggest otherwise\(^1\)

- A research study within a community of urban and rural Indigenous elders report belief that the **elderly should be treated with high quality of care and needs should be anticipated**\(^2\)

NIEJI Online Interactive Educational Module

- Launched on June 15, 2016
- Designed for professional disciplines working with and caring for Native Elders in a variety of settings:
  - Elder
  - Caregiving
  - Social Services
  - Financial
  - Legal
  - Policy
  - Healthcare
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Gaps in research/services for older adults experiencing trauma

- Empirical studies on the impact of trauma on the human brain have taken developmental approach → further research needed to examine trauma experienced as an older adult as well as a study of the risk factors in the elderly

- Programmatic services mirror research landscape → majority of governmental programs and services address needs of adolescents and children

- How can the work of ACL-grantees and sub-grantees (e.g. PCTI for holocaust-survivors) be translated into mainstream aging services
Thank You...Please Reach Out!

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References