



Aging in Traumatic Brain Injury: Practical Considerations

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Outline

- Definition of Brain Health
- Determinants of Brain health
- Aging after a brain injury vs Acquiring a brain injury as a senior
- Caring for chronic brain injury patients using “Chronic Care Model”
- A Stepwise Approach in Caring for Chronic Traumatic Brain Injury patients
- The 10 rules for successful aging in persons with brain injury



Case Presentation

- A 36-year-old male sustained severe traumatic brain injury. GCS 3
- In neuro-ICU developed seizures, agitation and swallowing difficulty
- Medication management
- Became medically stable in week 2 and deemed a great candidate for rehabilitation admission



Acute Rehabilitation

- Stayed for 4 weeks
- During admission: traumatic brain injury was managed with behavioral and medication approach
- Family education was provided prior to discharge
- Discharged home

Brain Injury Clinic Follow-up

- Still had memory issues. Some safety concerns reported (forgets the food in the stove)
- Decreased balance. Stumbles around
- Still irritable at times
- No seizures reported



Action Plan!

- Sent to PT & OT
- No SLP due to insurance coverage
- Changed mood medication
- Follow up in 6 months



Burning Questions by the Family..

- Can he drive?
- What is the rehabilitation period?
- Can he go back to work?



What is Brain Health?

- Brain health is the state of brain functioning across cognitive, sensory, social-emotional, behavioral and motor domains, allowing a person to realize their full potential over the life course, irrespective of the presence or absence of disorders.
- It is estimated that 1 in 3 people will develop a neurological disorder at some point in their life, making neurological disorders the leading cause of disability and the second leading cause of death



Why is Brain Health Important?

- Optimize rehabilitation recovery
- Prevent complications of chronic conditions
- Determinants of Brain Health



Determinants of Brain Health

Determinants of Brain health include:

- Physical health
- Healthy environments
- Safety and security
- Learning and social connection
- Access to quality services

Framework for brain health optimization

Optimizing brain health improves mental and physical health and also creates positive and economic impacts, all of which contribute to greater well-being and help advance society.



Addressing brain health determinants

at individual and societal level



Optimized brain structure and function

across the life course



Enhanced well-being



In a Normal Aging Brain...

- Decline in cognitive function, such as memory and processing speed
- Increased risk of chronic health conditions, such as heart disease, diabetes, and cancer
- Changes in physical abilities, such as balance, coordination, and strength



Traumatic Brain Injury and Aging

- TBI can accelerate the aging process of the brain
- Existing cognitive deficits from TBI can be worsened by age-related cognitive decline
- Increased risk of dementia in individuals with TBI



Aging after a brain injury

- Cognitive challenges: Due to brain injury vs related to co-morbid diseases
- Increase the risk of dementia
- Increase risk of fall
- Substance overuse related injuries
- Risk of social isolation

Acquiring brain injury as a senior

- The risk of acquiring a brain injury goes up as you age
- One in three older adults (60 years or older) sustain brain injury requiring hospital admission
- Many factors can predict the recovery pathway:
 - Family/ community support
 - Access to healthcare
 - Risk of future falls

What is the Role of Brain Injury Rehabilitation Team?

- Mission: Patient centered chronic disease management for individuals who have persistent effects of Brain Injury (BI)
- Implement social determinants of health and bio-psycho-social model of care in brain health
- Long-term outcomes: Decreased mortality and improved health, function, participation and quality of life for people with BI by providing longitudinal rehabilitation plan through the continuum.



Caring for chronic brain injury patients using “Chronic Care Model”

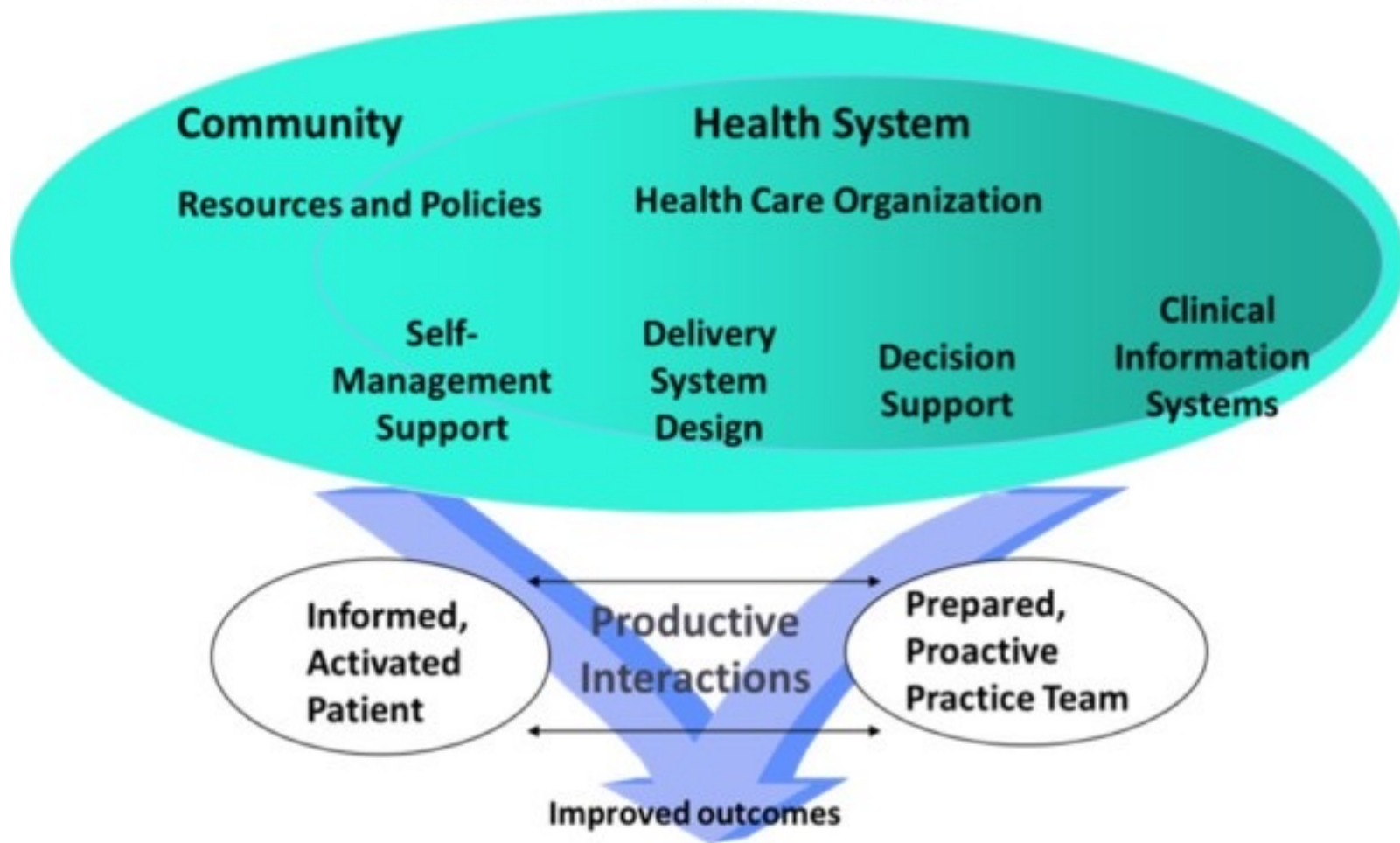
Caring for chronic brain injury patients using “Chronic Care Model”

- Developed by Wagner et al. 1999
- A comprehensive approach to caring for the chronically ill that supports increased functional and clinical outcomes.
- It promotes skills for self-management and decision-making skills

Chronic Care Model

- The model includes six key interdependent components:
 - (1) community resources
 - (2) health system support
 - (3) self-management support
 - (4) delivery system design
 - (5) decision support
 - (6) clinical information systems

Chronic Care Model



A Stepwise Approach in Caring for Chronic Traumatic Brain Injury: Step 1

- Access to educational materials to both patient and caregiver/s
- Monitor patients and caregivers physical and emotional health
- Provide compensatory strategies for self management
- Proactive referrals to other specialists

Happens at the acute phase!



Step 2: Early Education

- Reduce medication overuse
- Incorporate behavioral approach
- Avoid pessimism about future outcomes

In the rehabilitation unit!



Step 3: Reduce Hazardous activities

- Minimize the risk of re-injury
- Fall risk
- Problematic substance use
- Lack of emotional control: irritability, depression etc.

Step 4: Facilitate Social and Intellectual engagement

- Understand the social interactions around the patient.
- Review social supports including emotional, informational and instrumental
- Develop a plan to engage in valued activities exp. Leisure



Step 5: Encourage Healthy Brain Behaviors

- Ask about sleep patterns and sleep hygiene
- Promote physical activity
- Evaluate the need for nutritional education
- Screen tobacco and substance use
- Evaluate the need for education on reinjury prevention

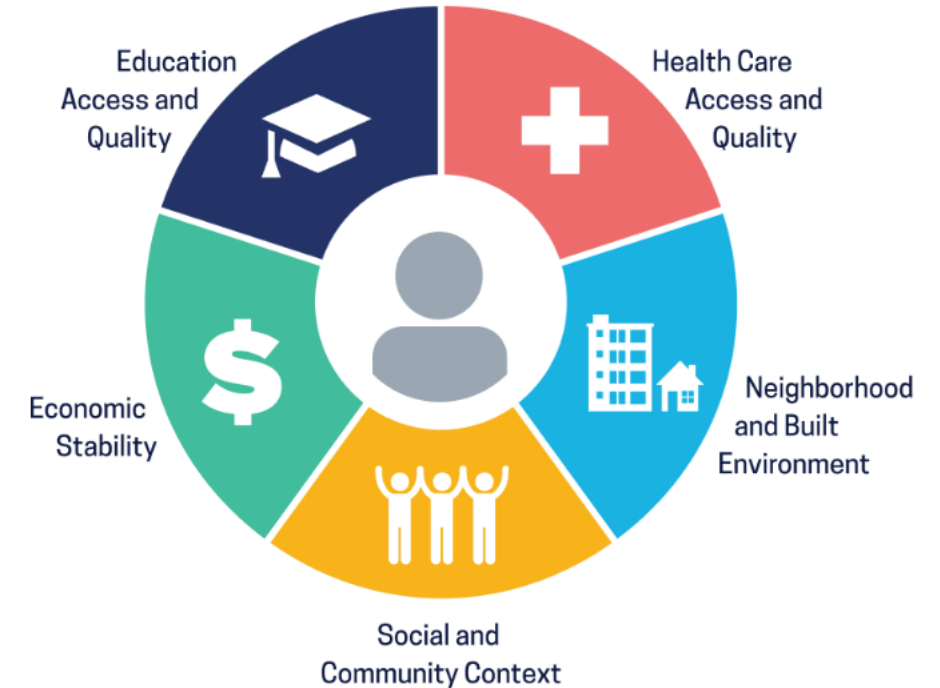
Step 6: Review for Comorbid Health Conditions and Medications

- Screen for known comorbidities associated with Brain Injury
Exp: pain, cardiovascular risks, neuroendocrine disorders, peripheral vascular disease, psychiatric disorders and neurodegenerative disorders.
- Work in collaboration with primary care
Refer and work with
Be the advocate

The Golden Rule

- Set goals and expectations
- Participate and collaborate with other providers
- Evaluate community barriers and opportunities that could improve outcomes

Social Determinants of Health



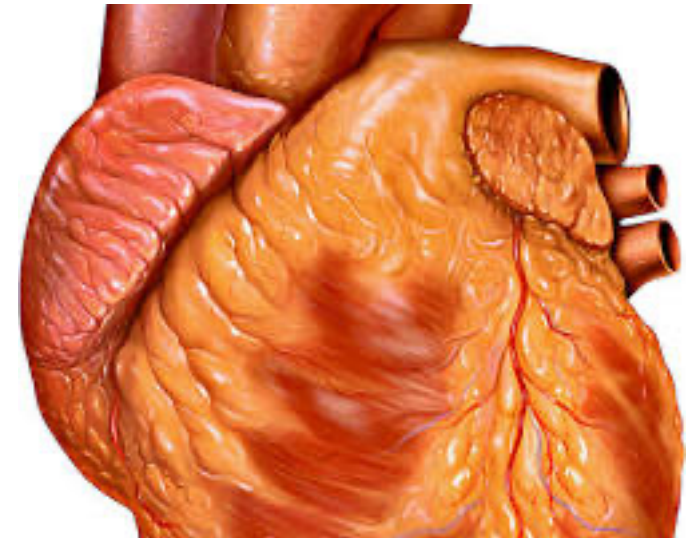


Educate your patient!

The 10 rules for successful aging in persons with brain injury

Rule 1

- **Take Care of the Heart:** Just like for everyone else, good cardiovascular health is essential for overall health and brain function in people with brain injuries. This means maintaining a healthy weight, eating a nutritious diet, getting regular exercise, and managing stress.



Rule 2

- **Exercise the Body:** Regular physical activity is not only good for your heart, but it can also help to improve cognitive function, mood, and sleep quality in people with brain injuries. Aim for at least 30 minutes of moderate-intensity exercise most days of the week.



Rule 3

- **Exercise the Brain:** Cognitive exercises can help to improve memory, attention, and problem-solving skills in people with brain injuries. There are many different types of cognitive exercises available, so you can find ones that you enjoy and that challenge you.

Right Under the Nose	Double Vision	Coffee Break
B E D	HEAD	FREQUENCY
Bedspread	Big Head	High Frequency
PROMISES	GRASS	JOB
Broken Promises	Green Grass	Inside Job

Rule 4

- **Feed the Brain:** Eating a healthy diet that is rich in fruits, vegetables, and whole grains can help to improve cognitive function and reduce the risk of dementia. Some studies have shown that the Mediterranean diet may be particularly beneficial for brain health.



Rule 5

- **Promote Mental Health:** People with brain injuries are at an increased risk for mental health problems, such as depression and anxiety. It is important to seek professional help if you are struggling with your mental health.



Rule 6

- **Avoid Drugs of Abuse:** Drugs and alcohol can have a negative impact on cognitive function and mental health. People with brain injuries should avoid using drugs and alcohol.



Rule 7

- **Avoid Social Isolation:** Social isolation can lead to loneliness and depression. It is important to stay connected with friends and family and to participate in social activities.



Rule 8

- **Protect the Brain:** People with brain injuries are more susceptible to further injury. It is important to take steps to protect your head from injury, such as wearing a helmet when riding a bike or motorcycle.



Rule 9

- **Form More Partnerships for Individuals with Brain Injury:** People with brain injuries can benefit from support from others who understand what they are going through. There are many brain injury support groups available.



Brain Injury **Support Group**

Join our social group for survivors of sudden brain injuries, including stroke, traumatic brain injury (TBI), brain tumor, and other conditions causing difficulties with cognition and communication. Families and caregivers are welcome.

**Second Wednesday of every month
5:30 - 6:30pm**

Conference Room 2C

Rule 10

- **Look for Greatness in Each Person:** A positive attitude can make a big difference in how you cope with a brain injury. Focus on your strengths and abilities, and don't give up on your goals.





Strategies to Train Self Management Skills

- Training in systematic problem solving
- Training is systematic decision making
- Action plans
- Training in how to access resources
- Training in medication management
- Teaching communication strategies

Back to the case...

- Wife contacted the clinic at 6 months post TBI:

Worsening memory

Fatigued all the time

Aggressive

Late seizures

Eats all the time

Back to ETOH habits

Social Background...

- Worked in construction. Unable to work now. Patient insists he can work
- Insurance keeps denying SLP
- Binge drinking
- Married x 3years with 2 toddlers. Had dual income but now wife salary. Wife has no clue about TBI
- Wife is the primary caregiver to the husband and two kids. Works full time and provides transport to school, doc appointments etc.
- Marital strife



How would you approach?

- Prioritize problems
- Goal setting strategies
- Caregiver education
- Navigate resources
- Train Self Management Skills

thank
you