Aging with Disability

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Overview on Aging

- **Bio-Psycho-Socio-Cultural-Spiritual Model**
- **Behavioral Adaptation to Aging:**
  - Interactions between organic (biological), psychosocial, and environmental variables
- **Existing disability and aging**
  - Newer attention to this phenomenon
  - “Risk Line” / optimal level of fitness vs. critical level of incapacity resulting in functional compromise
  - With disability
    - Narrow space between capacity and zone of change (lack of reserve)
    - Greater Vulnerability (fitness issues; disease processes)
    - Inexperience, new cohorts of disability, first-timers

Model of Aging with Disability

- **Roberta Trieschmann**
  - Health behavior and function with aging a “balancing act”
  - For persons with disability, “balancing is often increasingly tenuous with advancing age”
- **Balance** $f(P.O.E.) = $ Homeostasis (natural tendency)
  - Psychosocial Variables
  - Organic (Biological) Variables
  - Environmental Variables
- **Health Behaviors**
  - Survival Skills (managing life)
  - Harmonious Environments (supportive contexts)
  - Productivity (meaningful engagements)

New Cohorts: Aging with Disability

- **1940’s and 50’s**
  - #s and attention to “survivors”
    - Polio, Amputation, Spinal Cord Injury
- **1960’s and 70’s**
  - Medical survival, emergency care
    - Spina Bifida, Birth Injury (Cerebral Palsy), Head Injury, Heart Disease
- **1980’s and 90’s**
  - “Chronic Health” and Technology
    - Cancer, HIV/AIDS, Organ Transplant, renal/Heart-Lung care, Joint Replacement
- **2000’s**?
  - Gene Therapy?

“Aging isn’t for sissies”

- **License Plate Frame; Brian’s Mom**
  - Brian
    - Congenital disability (Cerebral Palsy; Spastic Diplegia)
    - Head cord release (age 6)
    - Orthotics (age 3); Cane (age 18); Scooter (wheelchair mobility) (age 30)
    - Therapy (age 9-12); Self-Managing
    - Knee meniscus tears/surgery
    - Herniated lumbar discs (persistent low back pain)
  - Brian’s Dad
    - WWII disabled Veteran; Bilateral Lower-Limb Amputation
    - Prosthesis User, Cane & Crutches
  - Brian’s Mom
    - Non-Insulin Dependent Diabetes
    - Late adult neurological compromise (undiagnosed)
    - Lower Limb Weakness (walking aids)

- **Give the Aging with Disability Talk?**
### New Cohorts: Aging with Disability

- Chronic but “non-progressive” or “static”
  - Polio
  - Cerebral Palsy
  - Spina Bifida
  - Spinal Cord Injury
  - Head Injury

- Those with disability:
  - Aging is a continuous process of adjusting to disability
  - Nothing is “status quo”
  - Experiences may be similar or disparate
  - Little has been published
  - New attention to living and aging with disability

### Science of Aging with Disability

#### Rates of Aging:
- ‘Developmental Delay’ ??
- ‘Aging Swiftly’ ??

  - **RATE:** Normal aging effects accelerated
  - **FORMAT:** Features of aging vary
    - Presby’s (vision, hearing, tactile)
    - Flexibility (range of motion)
    - Strength (reserves)
    - Cardio-pulmonary (reserves)
    - Psychosocial (depression & suicide)

#### Aging with Disability Bibliography

- LeeAnne Carrothers, PT, PhD (2005)
  - Rancho Los Amigos National Rehabilitation Center [NIDRR, OSERS]
  - Diagnostic Groups: SCI, CP, Post-Polio, RA
  - Issues for People Aging with Disability (600 articles)
    - Pain
    - Fatigue
    - Strength/Exercise
    - Bone Loss/Osteoporosis
    - Metabolic/Endocrine
    - Psychological Issues
    - Health/Health Care (Disparity)

### Examples

#### Polio [and Progressive Post-Polio Muscle Atrophy]
- Initial recovery peaked at ~6 years. Lived with polio for 30-40 years.
- ~ 25 year later; Health Decline
  - Fatigue, weakness in affected and previously unaffected muscles, muscle and joint pain, breathing difficulty
  - Functional decline: use of wheelchairs; trouble walking, stairs, transfers; bathing challenges

#### Spinal Cord Injury
- Ohry (1983): “Patients with SCI are subject to pre-mature aging.”
  - Decrease resistance to infection (antibody response)
  - Silent Sepsis- hypothermia and leukopenia
  - Premature hypertension and arteriosclerosis
  - Incidence of bladder, prostate and colon cancers
  - Difficulty with regulation of body temperature, fluid balance, obesity
  - Long-term SCI: Cumulative Trauma Disorders (UL)
  - Pressure Sores
  - Suicide
Examples (Generic)
- Disability
  - Musculoskeletal problems (PAIN)
  - Tender sore joints, muscles, tendons
  - Organ discomforts
  - Osteoporosis
- Cardiopulmonary Diseases
- Nutrition and Exercise
  - Poor (non-nutritional) Diet
  - Excessive Weight
  - Problem with fitness
- Stress and Endocrine System
  - Isolation (lack of meaningful participation)
  - Depression

Examples (Generic)
- Old vs. New Rehabilitation Philosophy
  - “Use it or loose it” vs. “Conserve it to preserve it”
- Individual’s health and fitness
  - Access to fitness centers
  - Dietary needs and resources
  - National Center on Physical Activity and Disability [http://www.ncpad.org]
- Contextual supports
  - Universal Design (accessibility)
  - Assistance Needs (informal and formal)
  - Access to Assistive Technology (consumer-ization)

Who are the Elderly?
- Elderly: "somewhat old"
- Longest span of any ‘age period’
  - Senior Discount: 55
  - Young Old: 65-74 (56% Female)
  - Old Old: 75-84 (65% Female)
  - Oldest Old: 85+ (72% Female)
  - Centurion: ≥100+
- “Two-thirds of all the men and women who have ever lived beyond the age of 65 in the entire history of the world are alive today.” ~Age Wave Institute (1993)

Why do we age?
With or without disability?
- Physiologic Causes
- Genetic Causes
- Environmental Causes
- Not mutually exclusive
  - all could and do play a role

Physiological
- Wear and Tear
  - Excessive strain, abnormal movements, spasticity
- Metabolic rate in humans declines after-20’s
- Aging by Program: cell reproduction has pre-established limits
- Homeostatic Imbalance
  - one thing (error) leads to another (with disability?)
- Cross-linkage theory
  - collagen breakdown- multi-system change

Physiological
- Accumulation of errors
  - new cell reproduction errors add up to faulty systems (Genetic re-cycling 7-10 times in a lifetime)
- Accumulation of metabolic wastes
  - do not shed enough of our used cells
- Autoimmunity
  - advancing destruction of ‘self’
Genetic Aspects

- Family patterns of longevity
  - monozygotic twins more similar in patterns of aging than dizygotic twins
- New findings of genetic traits that ‘predispose’ some people to diseases
  - Breast Cancer (<10%)
  - Colon Cancer (<30%)
  - Alzheimer’s Disease? (Down Syndrome)

Environmental Factors

- Mortality rates differ
  - Cross cultural differences within USA
  - Blacks live fewer years than Whites
- Historical time differences
  - Public health versus medicine
  - Causes of death 1930’s vs. 2000’s
  - Role models with chronic illness?

Environmental Factors

- Historical Events and Time
  - Culture-Regional differences in USA (diet, exercise & stress?)
  - Social and Natural disasters
  - Radiation Testing
  - Use of Pesticides
  - HIV
  - ???

What impacts people?

- Nature vs. Nurture
- Stability vs. Change
- People become more different as they age
- Increasing Diversity among older adults
- Counter to Youth’s Myth

[Graphs showing trends in percent of 65+ individuals and number of dependents in the United States from 1900 to 2030]
Health Costs and Socio-demographics

- % of population with health challenges
  - “Healthier” than prior generations?
  - Less reporting of disability
  - Do we know why?
- Fewer entry level workers
  - Extending employment to elders
- Fewer number of care providers
  - “Sandwich generation”
  - Elders helping elders
- Greater uses of Assistive Technology and Environmental Modifications (consumer ready)

Disability Key-points

- Older Women > disability reporting than older men
- Blacks > disability reporting than whites
- Living alone or with relatives > disability reporting
- Medicaid recipients, Medicare, Private
- Outside metropolitan areas > disability reporting
- Southern U.S. > disability reporting than Western U.S.

Disability Issues to Assess

- PROMIS Project: NIH Roadmap
- The Patient Reported Outcomes Measurement Information System (PROMIS): Tools for assessment
- Self-Reported Health [Physical, Mental, Social Health]
  - Fatigue
  - Pain
  - Anxiety
  - Depression
  - Anger
  - Sleep/Wake Disturbances
  - Social Roles
  - Discretionary Social Activities

5 Themes in approach; older adults

- Medical-Physiological
  - Prevention (primary and secondary)
- Focus on Function
  - Context of ability (adaptive functioning)
- Promotion of Self-Care
  - Control over care decisions (Internal LOC?)
- Personal Context (Informal care providers)
- Rehabilitation in the Community
  - “Aging in place” (Universal Design/Adjustments)

Therapeutic Approach

- Relationship between the Individual and his or her Environment
  - physical, social, spiritual
  - “Functional performance is behavior, [and] behavior is the outcome of the interaction of the person and the environment”

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A few suggested reading & references


