Promoting Physical Mobility of Older Persons

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Chronobiology, Shift work and Health: Studying the Filipino Chronotype
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Outline

I. Theories that explain decline of human mobility
II. Pre-clinical Mobility Limitation
III. Mobility decline predictors among older persons
IV. Nurses preventing decline and promoting mobility among older persons
• **MOBILITY**: a person’s ability to move independently and safely from one place to another; walking is an indicator

• Assessment through
  – Performance-based measures, e.g. gait speed, distance walked
  – Self-reports of perception of mobility

• **Mobility limitations** are performance deficits shown in tests
  – increases with age
  – a sign of further functional decline

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**Explaining Mobility Decline: Theories (1)**

**Nagi Model of Disablement Process**

Pathology
- Physiologic problems
- Injury
- Disease
- Aging

Impairment
- Decreased muscle strength
- Balance issues
- Sensory problems

Functional Limitation
- Mobility limitations

INTRAINDIVIDUAL FACTORS: lifestyle and behavior, psychosocial characteristics, coping, etc.

EXTRAINDIVIDUAL FACTORS: built environments, social environment
Explaining Mobility Decline: Theories (2)

Ecological Model of Aging (Person-Environment)

- Signs of declining mobility are typically observed for more demanding mobility tasks (e.g. walking longer distances)
- Compensations are first seen; maintaining function without perception of difficulty
- Intermediate stage before limitations manifest

Mobility Change During Old Age: Predictors

• Pain
  – Musculoskeletal pain is commonest
  – Different “pathways” to pain
  – It is possible that while the underlying cause of pain has been treated, pain continues

• Obesity
  – Excessive weight and increased mechanical load on the body means increased aerobic demand
  – More difficult/disinclined to move

Various studies

Mobility Change During Old Age: Predictors

• Genetics
  – Studies of monozygotic twins highlight environmental causes
  – Among dizygotic twins, the causes may either be inherent environmental

• Physical Inactivity
  – Sarcopenia and disuse
  – Organ reserve decline

Various studies
Mobility Change During Old Age: Predictors

- Sensory Factors
  - Adjustment to gradual decline of sensation
  - Monosensory issues: compensation allows for mobility
  - Multisensory issues: more likely that mobility becomes unsafe or affected

- Environment
  - Institutionalized vs. Community-dwelling

Preventing Decline and Promoting Mobility

- Promoting mobility at the community level as well as at individual level
- Minimize environmental and social barriers
- Ensure equal opportunities for mobility
- Opportunities to participate in physical activities—physical exercise classes
- Avoid stereotypic images and negative messages—be conscious about advising on physical activity
Falls Risk & Mobility: Documenting Factors (Clinical or Pre-clinical Decline)

1. **Intrinsic-physiologic factors**
   - Age
   - Sensory/Musculoskeletal/Neurologic/CV changes
   - Drug intake

2. **Intrinsic-psychosocial factors**
   - Mental status
   - Depression
   - Denial of aging
   - Fear of falling
   - Relocation

3. **Extrinsic-environmental factors**
   - Institutionalized or community-dwelling?
   - Surfaces and lighting
   - Bedroom and bathroom

4. **Activity-related factors**
   - Normal daily activities associated with falls
   - Improper assistive device use

**Environmental facilitators**

- 261 community-dwelling older persons (75-81 y/o) followed up for 3.5 years
- Baseline: no difficulties in walking 500m
- Follow-up: ½ developed walking difficulty
- Environmental facilitators may protect from difficulty

**Outdoor recreational facilities**

- Pleasant environment-parks
- Green areas
- Walking routes near homes

A word about physical activity advise given to older persons...

**How do health care professionals give advice to older persons with chronic conditions regarding physical exercises?**

- 23%: recommendations for exercise only
  - Musculoskeletal disease and impaired mobility
- 5%: warnings against exercise only
  - Heart conditions
- 34%: both
  - Physically active despite conditions
- 34%: no advise recalled
  - Sedentary, older, fewer chronic conditions

How do health care professionals give advice to older persons with chronic conditions regarding physical exercises?

- 580 non-institutionalized older adults, 73-92 y/old
- At least one health care contact within previous year


What Physical Activity advise do I give to older persons? (1)

- Reduce risk for chronic disease
- Improve life expectancy
- Maintain/Restore functional ability

**COVER THE FOLLOWING**

Endurance
Flexibility
Strength
Balance

**HOW to EXERCISE**

- Intensity
  - Moderate aerobic, 30 mins x 5 days/week
  - Vigorous aerobic, 20 mins x 3 days/week
- Structure: home or fitness center?
- Adherence
- Physical therapy, others: co-manage

What Physical Activity advise do I give to older persons? (2)

Many forms of exercise to choose from!

- Tai chi
- Qi Gong
- Yoga
- Aqua Exercise
- Walking

HOW to MOTIVATE*
- Incorporate into routines-interesting and saves time
- Incorporate technology, e.g. Wii Sports
- Keep activity journals
  - BP readings
  - Cholesterol levels
  - Weight record
- Join the exercise!


How do we schedule Physical Activity pursuits?

Chronotype (biological clock)
Daily physical performance characteristics
Sleep
• Type of body clock or **chronotype** varies between individuals and changes throughout life

• **Chronotype** influences performance of activity throughout the day
  – Best coordination, muscle strength and reaction time in afternoon in most

• Sleep duration varies among individuals (not all need 8 hours of sleep)
  – How motivated we are to do physical activity depends on how well-rested we are

A collaboration of researchers from the University of the Philippines Manila and Ludwig Maximilian University Munich
  ◦ Chronobiology, chronotype and Filipinos
  ◦ Chronotype of shift workers (call center industry)
  ◦ Field studies on shift work and chronotype: human ability and performance during shift work

***PhilSHIFT Research Group***
Find out your chronotype by answering the **Philippine Munich Chronotype Questionnaire (PhilMCTQ)**

For day workers: PhilMCTQ

For shift workers: PhilMCTQ-Shift
5th Annual Convention of the
Gerontology Nurses Association of the Philippines (GNAP)
Promoting Healthy Mind, Body and Spirit Among Older Persons
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