

**5<sup>th</sup> Annual Convention of the  
Gerontology Nurses Association of the Philippines (GNAP)**  
Promoting Healthy Mind, Body and Spirit Among Older Persons  
09 August 2013, Bayleaf Hotel, Manila, Philippines

## ***Promoting Physical Mobility of Older Persons***

**Gayline F. Manalang Jr., PTRP, MOH**

*Assistant Professor, Department of Environmental and Occupational Health  
College of Public Health, University of the Philippines Manila  
THE HEALTH SCIENCES CENTER*

*Collaborator, PhilSHIFT Research Group  
Chronobiology, Shift work and Health: Studying the Filipino Chronotype  
[philshift.upm.edu.ph](http://philshift.upm.edu.ph)*

## **Outline**

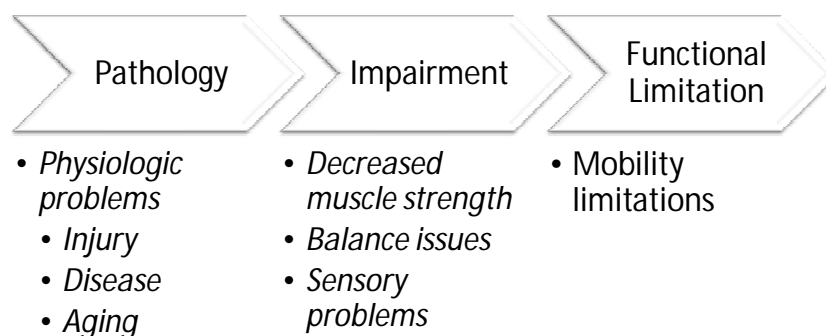
- I. Theories that explain decline of human mobility
- II. Pre-clinical Mobility Limitation
- III. Mobility decline predictors among older persons
- IV. Nurses preventing decline and promoting mobility among older persons

- **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

*Rantakokko M, Mänty M and Rantanen T. Mobility Decline in Old Age. Exerc Sport Sci Rev. 2013;41(1):19-25.*

## Explaining Mobility Decline: Theories (1)

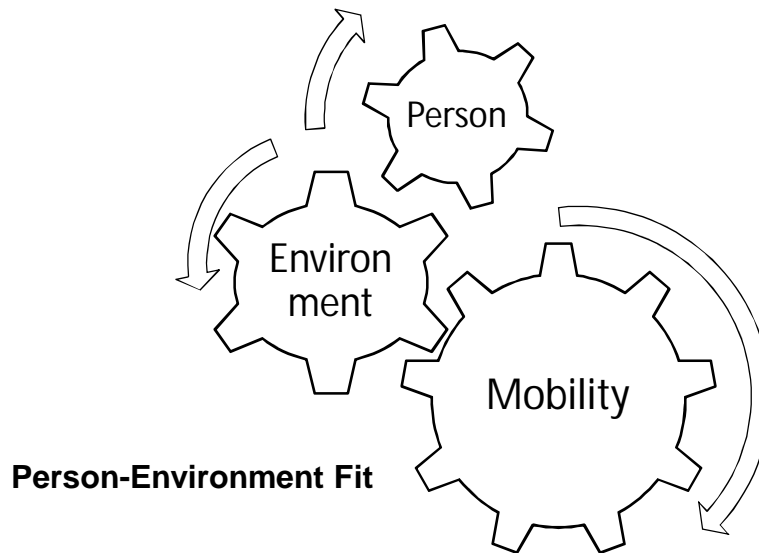
### *Nagi Model of Disablement Process*



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)*



## Pre-clinical Mobility Limitation

- 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

*Rantanen T. Promoting Mobility in Older People. J Prev Med Public Health 2013;46:S50-S54*

## 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

*Various studies*

## 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

*Rantanen T. Promoting Mobility in Older People. J Prev Med Public Health 2013;46:S50-S54*

## 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*

Eronen J, von Bonsdorff M, Rantakokko M, Rantanen T. Environmental facilitators for outdoor walking and development of walking difficulty in community-dwelling older adults. *European Journal of Aging* 2013.

## *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?**

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

*Hirvensalo M, Heikkinen E, Lintunen T, Rantanen T. Prev Med. 2005 Jul;41(1):342-7.*

- 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

## *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

*\*According to American College of Sports Medicine and American Heart Association, in Advance for Nursing "Helping Older Adults Maintain Mobility". Accessed 07 Aug 13.*

## *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!

\*According to American College of Sports Medicine and American Heart Association, in Advance for Nursing "Helping Older Adults Maintain Mobility". Accessed 07 Aug 13.

## 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



**PhiSHIFT  
Research Group**<sup>18</sup>

**PHILSHIFT RESEARCH GROUP**  
STUDYING THE FILIPINO CHRONOTYPE

**Welcome to the PhilSHIFT Homepage**

PhilSHIFT is an interdisciplinary group that brings together researchers from the University of the Philippines Manila (UPM) and the Ludwig Maximilians University Munich (LMU) in a collaborative effort that aims to study the Filipino circadian clock and shift work. PhilSHIFT is now engaged in a study to determine the Filipino chronotype.

**Chronotyping the Philippines through PhilSHIFT**

Chronotype (chronos = time) reflects how your individual biological clock ticks and how it fits into the 24-hour day. Characteristics of the daily clock are genetically inherited and, together with your individual daily light exposure (e.g., working indoors or outdoors) influence your individual sleep preferences. Individuals differ in their biological timing, resulting in different chronotypes. The different chronotypes are apparent when you consider that some people are more alert in the morning, while others are able to cope with their sleeplessness.

If you want to know your chronotype and help in our objective to determine the Filipino chronotype, please answer the **Philippine Munich Chronotype Questionnaire (PhilIMCTQ)**. This will lead you to the **PhilIMCTQ** questionnaire and receive feedback. After entering your email address, you will receive an email with the link to the questionnaire until you reach the 'thank you' message. Your participation is valuable and highly appreciated.

The PhilSHIFT Team

**Know Your Chronotype**

Click on the flag to know your chronotype

Current PhilIMCTQ Respondents: 1381

**Social Jetlag and Its Consequences**

Submitted by bryan on Mon, 2012-05-14 12:50

Why are most people in industrialized societies so tired? The reason lies in an increasing discrepancy between our body clocks' internal time and the social demands on work/school days (social jetlag). Because we predominately work inside, our body clocks have become later over the years while work times have stayed approximately the same. Body clocks use the light-dark cycle to synchronize to the 24-hr day, while society manipulates social time (e.g., time zones and daylight saving time) ignoring the internal time of an individual. The signal to fall asleep is predominantly controlled by the body clock, whereas wake-up on workdays is enforced by the social clock. As a consequence, close to 80% of the population uses alarm clocks on workdays. The more "social jetlag" people suffer from, the more likely they are to smoke, drink alcohol, and consume caffeine, and the odds are higher that they belong to the overweight/obese portion of the population.

(from <http://www.youtube.com/watch?v=t5y1qK-aPX>)

<http://philshift.upm.edu.ph>  
Click on flag for chronotype questionnaire - PhilIMCTQ

**From PUBLIC PROJECTS at TheWeP, choose:**

**Registered Users**

Username:   
Password:

**New User Registration**

Why register?

First Name:   
Last Name:   
\*User Name:   
\*Password:   
Confirm Password:   
\*Email:   
Address:   
Remarks:   
Role:  Registered User  
Requested:

**What is the WeP?**

Biological research is - above all - for understanding how we (humans) live, stay healthy, or become ill and are healed. Usually, this involves highly controlled laboratory experiments, under artificial conditions, and using non-human subjects. We, therefore, know quite a bit about the functioning of our body but there are remarkably many "black boxes" remaining concerning the human species and its biology.

The WeP seeks to extend our insights concerning all aspects of human behaviour in the real world. WeP is an acronym for "Worldwide experimental Platform", a tool that takes research on human behaviour to the digital age, extending around the globe and into different cultures. The projects on the WeP will use internet-based questionnaires to document typical, human behaviour.

[Read more](#)

**Featured Public Projects**

Public projects are available to all visitors, even to those who do not intend to register for a WeP account. Below are the currently featured public projects.

- MCTQ**  
How and why does the biological clock tick? With the help of this questionnaire, we aim to understand the underlying complexity of the biological clock and individual differences in the biological clock, as shown in
- PhilIMCTQ**  
Tic toc body clock  
Alamin ang orasan ng iyong katawan.  
Alamin ang iyong CHRONOTYPE dito.
- PhilIMCTQ-Shift**  
Munich Chronotype Questionnaire for Shift working Filipinos.  
PhilIMCTQ-Shift is intended for Filipinos who work in a shift routine. This would include call center workers and hospital nurses.

**Find out your chronotype by answering the Philippine Munich Chronotype Questionnaire (PhilIMCTQ)**  
For day workers: PhilIMCTQ  
For shift workers: PhilIMCTQ-Shift

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**[gfmanalangjr@upm.edu.ph](mailto:gfmanalangjr@upm.edu.ph)**