Nutritional Status, Dietary Intake, Functional Capacity and Quality of Life Among Urban Community-Dwelling Older Persons in the Philippines

Marilou L. Madrid
Senior Science Research Specialist
DOST-FNRI

Background

• Aging is associated with decline in metabolic functions
  – Affects food intake
  – Physical function
  – Health

• Philippine government recognizes the value of giving care and attention to older citizens.

Health & Nutrition Situation

- There are 6.25 million older persons in 2010.
- By 2040, this number is projected to reach more than 19.6 million (PSA, 2010).

- More resources need to be allocated for health and nutrition services to maintain good health.

Legislations to safeguard health and welfare of older persons

- Senior Citizen’s Act (RA 7876) – act establishing senior citizen centers in all cities & municipalities
- Enhanced Senior Citizens (RA 9257); and,
- Expanded Senior Citizens Act (RA 9994) - An act maximizing the role of senior citizen in nation building, grant benefits and special privileges like hospitalization, food and fare discounts among others

Studies on older persons

- Some published papers
  - Capanzana et al (2009) – health and nutritional status of older persons from the 7th NNS showing under and overnutrition, NCDs are common
  - Pungutan and Ramos (2006) - conducted geriatric assessment in hospital patients
  - Bautista, Tanchoco, Tajan, Magtibay (2013) – effect of flavor enhancers

Research gaps

- Most studies conducted in hospitals and institutions
- More studies on how diet can improve body composition and physical function
- Lack of studies that relates nutritional status and quality of life

Quality of life

- individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (WHO, 1996).
**Functional status**

- ability of a person to perform activities that relate to self-care and daily living.
- reflection of the ability of the individual to live independently and relate to outside environment

**Objectives**

**General:**
To determine the nutritional status and its association with the functional capacity and quality of life of community-dwelling older persons in the National Capital Region, Philippines.

**Specific objectives**

1. To assess the nutritional status of older persons by means of anthropometric, biochemical, clinical and dietary methods;
2. To assess the functional capacity and quality of life of older persons; and,
3. To relate nutritional status with functional capacity and quality of life.

**Methods**

Research/Sampling Design:
- Cross-sectional study

- Sample size: 392 individuals; aged 60 years and above
## METHODS

### Inclusion Criteria:
- ability to answer questions on health, nutrition and other relevant information;
- ambulatory and can stand alone; and,
- ability to comprehend and provide consent to join the study

### Exclusion Criteria:
- Bed ridden;
- Unable to provide consent and/or has no representative to provide consent
- Unable to answer questions

- Ethical approval from FIERC

### Methods

#### Data variables and instruments/tools used

<table>
<thead>
<tr>
<th>Component</th>
<th>Variable</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropometric</td>
<td>Weight/Body fat/BMI</td>
<td>Body Composition Analyzer (BCA)</td>
</tr>
<tr>
<td></td>
<td>Height</td>
<td>Stadiometer</td>
</tr>
<tr>
<td>Biochemical</td>
<td>Iron status (hemoglobin)</td>
<td>Standard lab instrument</td>
</tr>
<tr>
<td>Clinical</td>
<td>Medical History</td>
<td>Comprehensive Geriatric Screening*</td>
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<td></td>
<td>Ageing related disorder – vision and hearing, gastrointestinal, psychiatric, neurologic, etc.</td>
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*Developed by the Institute on Aging-NIH UP Manila, Philippine College of Geriatric Medicine, and NCGH DOH

#### Quality of Life

<table>
<thead>
<tr>
<th>Component</th>
<th>Quality of life score(^2)</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life</td>
<td>WHOQOL-BREF FIL OP(^1)</td>
<td>WHOQOL-BREF FIL OP(^1)</td>
</tr>
</tbody>
</table>

\(^1\) Developed by the Institute on Aging-NIH UP Manila, Philippine College of Geriatric Medicine, and NCGH DOH

\(^2\) DOST-FNRI, 2013

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\(^2\) http://www.who.int/mental_health/media/en/76.pdf
<table>
<thead>
<tr>
<th>Methods</th>
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<tbody>
<tr>
<td>Quality of Life and Quality of Health Questions</td>
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<table>
<thead>
<tr>
<th>Lubhang Hindi Kontento</th>
<th>Hindi Kontento</th>
<th>Medyo Kontento (OK lang)</th>
<th>Kontento</th>
<th>Sobrang Kontento</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (G1) Gaano kayo kakontento sa kalidad ng inyong buhay?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2 (G4) Gaano po kayo kakontento sa inyong kalusugan?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
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<th>Methods</th>
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</thead>
<tbody>
<tr>
<td>Anthropometry</td>
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</tbody>
</table>

- Height
- Weight
- BMI & body fat
- Waist, hip, calf circumferences

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<th>Methods</th>
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<tbody>
<tr>
<td>Functional Capacity – muscular strength</td>
</tr>
</tbody>
</table>

- Hand grip dynamometer
  (weak, normal, strong)
Methods

• Mini-Nutritional Assessment®*

• Risk scores include:
  - 24 – 30 points = normal nutritional status
  - 17 – 23.5 = at risk of malnutrition
  - < 17.5 = malnourished

*Source: Nestle Nutrition Institute

Data Analysis

• ANOVA, Chi-square test to determine association between variables
• Multiple or logistic regression in determining variables that significantly influence functional capacity or QOL
• Significance level (p-value < 0.05)
• SPSS v. 20

Socio-demographic profile

Distribution of participants by sex

60-69 70-79 80+
63 69 59

Both Male Female
28 26 29
9 4 12

Age group of study participants
**Socio-demographic profile**

- 90% live with their families
- 58% are Members Social Organizations, where 47% are members of Senior Citizen’s Organization

**Educational Attainment**

- Vocational: 6%
- College: 21%
- High School: 39%
- Elementary: 32%
- No: 1%

- 53% with enough finances

**Anthropometric results: BMI (kg/m²)**

- Underweight (BMI <18.5)
- Overweight and Obese (BMI ≥25.0)
- Normal (BMI 18.5-24.99)

**Common health problems based on CGS**

- Majority (95%) have gastrointestinal problems
- About one half are Hypertensive (BP ≥140/ ≥90)
- 8 out of 10 have vision problems
- At least ONE in THREE older persons has arthritis, hearing, psychiatric, pulmonary and genito-urinary problems
- 1 out of 5 is Anemic

*Developed by the Institute on Aging-NIH UP Manila, Philippine College of Geriatric Medicine, and NCGH DOH

**Energy and Nutrients**

- Proportion of older persons meeting the REI and EAR for nutrients by sex
Functional Capacity

**Hand grip**
- About half of male (48%) & female (43%) participants had normal hand grip strength
- Males (26.07±6.40) with significantly higher hand grip score than females (14.90±4.49)
- Hand grip score is lowest among the oldest old in both sexes

**Activities of daily life**
- **ALL** participants can perform ADL or basic self care tasks (e.g. bathing, feeding, toileting, continence activities)
- **96%** can perform all IADL on their own (e.g. use of telephone, shopping, housekeeping, managing money, transportation, etc.)

Functional Capacity

**Physical activity**
- Walking to and from places like work or going to market or doing errands => **8 out of 10 older persons**
- Moderate-intensity recreational activity => **one out of three**

Quality of Life*

Satisfied with QOL
(Gaano kayo kakontento sa kalidad ng inyong buhay?)

Mean QOL score = 3.4 ± 0.775

Rating scale:
1 - lubhang di kuntento
2 – hindi kuntento
3 – medyo kuntento (OK lang)
4 - kuntento
5 - lubhang kuntento
Satisfaction with Health

Mean score = 3.24 ± 0.870

Rating scale:
1 - lubhang di kuntento,
2 – hindi kuntento,
3 – medyo kuntento (OK lang),
4 - kuntento,
5 - lubhang kuntento

Quality of Life score by domain

- Physical: 65.85
- Psychological: 65.12
- Social Relationship: 64.65
- Environmental: 61.15


Quality of life by age group

Results

Table 2. Variables with significant correlation with Quality of Life and Quality of Health

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Factor</th>
<th>Pearson r</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Quality of Life</td>
<td>MNA Total Score</td>
<td>0.177</td>
<td>0.001</td>
</tr>
<tr>
<td>Quality of Health</td>
<td>MNA Total Score</td>
<td>0.296</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Mid Upper Arm Circumference</td>
<td>0.112</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>Calf Circumference</td>
<td>0.132</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>Left Hand Grip</td>
<td>0.162</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>Right Hand Grip</td>
<td>0.228</td>
<td>0.000</td>
</tr>
</tbody>
</table>
SUMMARY & CONCLUSION

- Both under- and over-nutrition exists among older persons in NCR.
- Common ailments associated with aging are present.
- Majority of the older persons can still perform activities of daily life independently irrespective of age, BMI and health condition.
- Majority of older persons perceive their quality of life and health as satisfactory.
- The scores from MNA, a measure of nutritional risk, is a significant factor that influence the quality of life of older persons. Measurements on the calf and mid-upper arm circumferences, hand grip strength and MNA scores significantly correlate with satisfaction on the quality of their health.

CONCLUSION & RECOMMENDATIONS

- Strengthen and monitor programs addressing environment domain (i.e., the financial; home environment; accessibility and quality of health & social care; opportunities for acquiring new information and skills; participation in and opportunities for recreation/leisure activities.

RECOMMENDATIONS

- More in-depth assessment of older persons’ functional capacity and QOL in various settings.

Project Team

Consuelo L. Orense – Project leader
Marilou L. Madrid
Ermelita N. Bautista
Hazel T. Lat
Merlyn G. Tajan

With the assistance of
Dan Emil G. Florendo
Anna Gabriella Oro Guingon
Jairus Roi A. Rubia
Jaira Denisse Pedraja
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References


Philippine Statistics Authority (PSA) and ICF. 2018. Philippines National Demographic and Health Survey 2017: Key Indicators. Quezon City, Philippines, and Rockville, Maryland, USA: PSA and ICF.

