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<tr>
<td><strong>Author(s)</strong></td>
<td>Chau, PH; Leung, YMA; Lok, YWK; Li, SF</td>
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<tr>
<td><strong>Citation</strong></td>
<td>The 6th Hong Kong International Nursing Forum (HKNF 2015), Hong Kong, China, 10-11 December 2015.</td>
</tr>
<tr>
<td><strong>Issued Date</strong></td>
<td>2015</td>
</tr>
<tr>
<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10722/233257">http://hdl.handle.net/10722/233257</a></td>
</tr>
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A Pilot Study on Assessing Dietary Salt Intake among Older People in Hong Kong

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High salt intake has been shown to be related to elevated blood pressure (He and MacGregor, 2010)

The World Health Organization (WHO) recommends a daily salt intake of less than 5g (WHO, 2007)

Globally, many countries around the world cannot achieve the WHO recommendation (Powles et al., 2013)

Hong Kong is not an exception

Over 60% of the adult population aged 20-84 years exceeded the WHO recommendation of dietary sodium intake (Centre for Food Safety, 2014)
**Need to Measure Sodium Intake**

- Reduction of salt intake as a means to prevent hypertension has been drawing increasing attention.
- Before developing interventions for reducing salt intake, there is a need to develop instruments for outcome measures in order to assess the effectiveness of the interventions.
- Dietary sodium intake can be estimated through:
  - Food diary
  - Dietary recall
  - 24-hour urinary sodium excretion
The Gold Standard?

- While 24-hour urinary sodium excretion is the gold standard, incomplete measurements are not uncommon
  - Subject compliance
  - Logistic arrangement issues
- If the target population is older people, would it be feasible for them to follow the urine collection protocol?
Objective

- To examine the feasibility of collecting 24-hour urinary sodium excretion among older people in Hong Kong
Methods

- A convenience sample was recruited from elderly center in Hong Kong
- Inclusion criteria:
  - People aged 65 or above
- Exclusion criteria:
  - Renal illness
  - Taking diuretics
- An one-hour briefing was provided to the participants about collecting 24-hour urine and completing a 3-day food diary
- Jugs/bedpans and bottles were provided to facilitate urine collection
Methods

Briefing

Participants collect 24h urine and complete 3-day food diary

Participants return collected urine and food diary
Definition of a complete sample

- Urine collection for 24 hours
- No reported missed void
- Urine volume over 1000ml
Results

By July 2015, 37 elderly people were recruited from one elderly centre and attended the briefing session.

36 participants returned the 24-hour urine
Participants Characteristics

Age Group

- 65-74: 41%
- 75-84: 42%
- 85+: 17%

10
Participants Characteristics

Gender

- Female: 83%
- Male: 17%
Participants Characteristics

Education Level

- No formal education: 22%
- Tertiary or above: 11%
- Secondary: 6%
- Primary: 61%
Urine Collection Compliance

36 returned sample

25 reported no missed void

20 collection time =24hr

11 reported ≥1 missed void

11 collection time ≠24hr

56%!
## Compliance by Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Self-reported compliance</th>
</tr>
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<tbody>
<tr>
<td><strong>Age group</strong></td>
<td></td>
</tr>
<tr>
<td>65-74</td>
<td>60%</td>
</tr>
<tr>
<td>75-84</td>
<td>33%</td>
</tr>
<tr>
<td>≥85</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50%</td>
</tr>
<tr>
<td>Female</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>50%</td>
</tr>
<tr>
<td>Primary</td>
<td>59%</td>
</tr>
<tr>
<td>Secondary</td>
<td>50%</td>
</tr>
<tr>
<td>Tertiary or above</td>
<td>50%</td>
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Lessons

- Collecting 24-hour urine can be challenging to the older people.
- No obvious potential factor of low compliance
- Further studies will be conducted to investigate
  - if the compliance can be improved by eliminating parallel tasks like completing a food diary
  - if there are alternatives to 24-hour urine as outcome, e.g. self-reported questionnaire—Chinese Health Literacy for Low Salt Consumption
Acknowledgement

- This study was funded by the Small Project Funding (no.201409176162) of The University of Hong Kong.
References

- Centre for Food Safety, Food and Environmental Hygiene Department, The Government of the Hong Kong Special Administrative Region. The First Hong Kong Total Diet Study: Minerals. The First Hong Kong Total Diet Study Report 2014;9:1-131.