A Pilot Study on Assessing Dietary Salt Intake among Older People in Hong Kong

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Background

- 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

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

Gender

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

Education Level

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

36 returned sample

- 25 reported no missed void
  - 20 collection time = 24hr
  - 5 collection time ≠ 24hr

- 11 reported ≥1 missed void
  - 6 collection time = 24hr
  - 5 collection time ≠ 24hr

56%!
## Compliance by Characteristics

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

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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.