Reducing health disparities: Health care reform must address issues raised by ageing populations

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Ageing populations: a Public Health success story with a sequel

• ‘…a collective denial in society and in health workers themselves-many of whom haven’t quite caught up with the reality that for most of them, the care of older people will increasingly be their job- meaning that maintaining wellbeing and managing chronic conditions will be a bigger part of their role than heroic cure.’

[D Oliver. National Clinical Director for Older People, England]
A New ambition for Old Age

• We need to make services Age Proof and Fit for Purpose

• If we design services for people with one thing wrong at once but people with many things wrong turn up, the fault lies not with the users but with the system, yet all too often these patients are deemed ‘inappropriate’
Healthcare goals

• Increasing life expectancy with compression of morbidity by reducing chronic diseases and disability, with an emphasis on quality of life

• Prevention of physical and cognitive decline through effective health promotion to achieve lifestyle modification

• Take into account social determinants: both objective indicators as well as subjective (the influence of hierarchy)
What are the ageing issues?

- Inseparable with social issues
- A healthcare system that is orientated to providing for complexity of care required for the frail elderly population in the last years of life
- Ageism in policy development, service provisions, overall societal negative attitudes
- Financing of appropriate services
Some social perspectives
Comparison of physical and psychological health among older people aged 70 years and over in Hong Kong and Beijing

- Do older people with an essentially free health care system have better physical and psychological health compared with those with a predominantly user-pay system?
- People in HK have worse self-rated health. More symptoms and are less happy than their Beijing counterparts. [Role of social hierarchy?]

[Woo et al Australasian J Ageing 2008]
Results

Path analysis model of FI(log) (adjusted for age & sex)

Higher SES in HK → DQI

\[ \begin{align*}
0.031 & \\
-0.034^* & \end{align*} \]

DQI → Alcohol use

\[ -0.058^* \]

DQI → Smoking

\[ -0.072^* \]

DQI → Log (Frailty index)

\[ -0.086^* \]

Log (Frailty index) → PASE

\[ -0.107^* \]

PASE → District (Ref: Shatin)

\[ -0.031 \]

District (Ref: Shatin) → Higher SES in HK

\[ -0.014 \]

Higher SES in HK → District (Ref: Shatin)

\[ -0.034^* \]

District (Ref: Shatin) → Kowloon City

\[ -0.058^* \]

District (Ref: Shatin) → Eastern

\[ -0.082^* \]

District (Ref: Shatin) → Yau Tsim Mong

\[ -0.086^* \]

Kowloon City → Alhohol use

\[ -0.034^* \]

Kowloon City → Smoking

\[ -0.072^* \]

Kowloon City → Log (Frailty index)

\[ -0.08^* \]

Eastern → Tobacco use

\[ -0.072^* \]

Eastern → Smoking

\[ -0.08^* \]

Eastern → Log (Frailty index)

\[ -0.072^* \]

Yau Tsim Mong → Tobacco use

\[ -0.034^* \]

Yau Tsim Mong → Smoking

\[ -0.072^* \]

Yau Tsim Mong → Log (Frailty index)

\[ -0.08^* \]

Sham Shui Po → Tobacco use

\[ -0.072^* \]

Sham Shui Po → Smoking

\[ -0.072^* \]

Sham Shui Po → Log (Frailty index)

\[ -0.107^* \]

\[ a: \text{Tsuen Wan (-0.04)*, Kowloon City (0.042)*} \]

\[ b: \text{Eastern (0.043)*} \]

\[ c: \text{Kowloon City (-0.058)*, Eastern (-0.082)*} \]

\[ d: \text{Kwai Tsing (-0.046)*, Yuen Long (-0.061)*, Kowloon City (-0.050)*, Kwun Tong (-0.045)*, Eastern (-0.052)*, Yau Tsim Mong (-0.057)*} \]

\*p<0.05

Coefficients within path: standardized \( \beta \) from regression.
Sham Shui Po and Sai Kung

**Sai Kung**
Population: 406,442  
% of elderly population (65+): 8.2%  
Density: 3,135 per km²  
Median household income: HK$21,000  
Unemployment rate: 4.4%  
% of non-schooling population having received tertiary education: 24.8%

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**Sham Shui Po**
Population: 365,540  
% of elderly population (65+): 16.7%  
Density: 39,095 per km²  
Median household income: HK$13,500  
Unemployment rate: 5.8%  
% of non-schooling population having received tertiary education: 18.8%
## Table 3 Neighbourhood Environment Index

<table>
<thead>
<tr>
<th></th>
<th>Sham Shui Po Mean (s.d)</th>
<th>Sai Kung Mean (s.d.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General impression*** (range:1-5)</td>
<td>3.5 (0.9)</td>
<td>3.9 (0.7)</td>
</tr>
<tr>
<td>Accessibility** (range:1-5)</td>
<td>4.2 (0.6)</td>
<td>4.1 (0.6)</td>
</tr>
<tr>
<td>Safety*** (range:1-5)</td>
<td>4.2 (0.7)</td>
<td>4.4 (0.5)</td>
</tr>
<tr>
<td>Pollution-free*** (range:1-5)</td>
<td>3.6 (1.0)</td>
<td>4.0 (0.8)</td>
</tr>
<tr>
<td>Amenities &amp; recreation venues* (range:1-5)</td>
<td>3.6 (0.7)</td>
<td>3.5 (0.7)</td>
</tr>
<tr>
<td>Medical &amp; social facilities** (range:1-5)</td>
<td>3.3 (0.7)</td>
<td>3.1 (0.7)</td>
</tr>
<tr>
<td>Overall*** (range:6-30)</td>
<td>22.4 (2.9)</td>
<td>23.0 (2.4)</td>
</tr>
</tbody>
</table>

* p-value of independent samples t-test < 0.05
** p-value of independent samples t-test < 0.01
*** p-value of independent samples t-test < 0.001
Neighbourhood Environment

- After controlling for the socio-demographic characteristics of individuals, an unit increase in Neighbourhood Environment Index was associated with
  - An increase of 0.37 in PCS score (p-value<0.001)
  - An increase of 0.32 in MCS score (p-value<0.001)
  - An increase of 1.22 in MOS-SSS score (p-value<0.001)

- Interaction effects between the index and socio-demographic characteristics were insignificant (p-value>0.01)
By including district of residence as a random effect in the models, it was found that
- district was associated with MOS-SSS score, but not associated with PCS and MCS scores
- Neighbourhood Environment Index was still significantly associated with PCS, MCS and MOS-SSS scores

→ Neighbourhood Environment Index is a better predictor of health and social outcomes than district of residence
A System orientated to needs
A system needs to be orientated to needs

- Dealing with complexity and complex interventions [multi-morbidity, ADL dependency, frailty]
- Consider needs from the users’, not systems’, point of view
- Arrangement of services and guidelines are applicable to the general adult population: the elderly are marginalized at all levels from policy to frontline service providers – they do not receive high priority
Total and avoidable mortality rate* (per 1,000 population) among the population aged 1-74 in Hong Kong, Paris, Inner London and Manhattan, 1999-2003

<table>
<thead>
<tr>
<th>World City</th>
<th>Total Mortality rate</th>
<th>Avoidable Mortality rate [excluding all IHD deaths] (% of total mortality)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Female</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3.22</td>
<td>1.81</td>
</tr>
<tr>
<td>Paris</td>
<td>3.83</td>
<td>1.90</td>
</tr>
<tr>
<td>Inner London</td>
<td>5.10</td>
<td>2.82</td>
</tr>
<tr>
<td>Manhattan</td>
<td>4.47</td>
<td>2.49</td>
</tr>
</tbody>
</table>

Rates were standardised by the US 2000 Standard Population
Adopted from Chau et al, Eur J Public Health 2010 (published on line)
http://eurpub.oxfordjournals.org/content/early/2010/03/17/eurpub.ckq020.full.pdf+html
1. Health promotion
- Group program on healthy lifestyle e.g. cooking class, pilates, etc.
- Health talks
- Health screenings e.g. hearing ax, visual ax, cognitive ax, etc.

2. Health maintenance
- Individual consultation by nurse / PT / OT / SW
- Group program e.g. CDSMP, DM class, positive psychology, etc.

3. Active rehab
- Day Care for dementia
- PT / OT / RN treatment

“Soon-to-be-old” person or Healthy elderly
Have chronic disease
Frail & sub-acute state
Dementia
Ageing Population & Public Health Expenditure

- Ageing population in Hong Kong
  - People over age 65 will increase from 13% in 2009 to 28% in 2039.
  - Ageing population will lead to an increase in chronic disease and disability burden on health care system.

- Public health expenditure
  - $37.8 billion in 2004 (14.7% of the total government budget)
  - $186.6 billion in 2033 (27.3% of the total government budget)
Needs for Prioritization

- HK government healthcare budget is unable to keep up with the demand.

- Some form of rationing in health services seems to be inevitable.

- However, there has been
  - No official acknowledgement of the needs for prioritization
  - Little discussion of this issue among policy makers, professionals and the general public
Results (i)

- Priority Ranking of the 12 Health Services:
  1. Treatment for children
  2. High technology surgery
  3. Preventive screening services
  4. Surgery to help people carry out everyday tasks
  5. Health promotion / education services
  6. Psychiatric services
  7. District nursing & community services / care at home
  8. Long stay hospital care for elderly people
  9. Treatment for people aged >75
  10. Special care & pain relief for people who are dying
  11. Intensive care for premature babies
  12. Treatment for infertility

Healthcare professionals vs. General public
Results (ii)

- “If resources are to be rationed, higher priority should be given to treating the young rather than the elderly.”
  - 44% agreed (vs. 34% disagreed)

- “Surveys of the general public’s opinions, like this one, should be used in the planning of health services.”
  - 77% agreed
Results (iii)

- Respondents were asked to rank who should set priorities:
  - Doctors at local level (43%)
  - The public (21%)
  - Hospital Authority (19%)
  - Hospital managers (11%)
  - Politicians and the government (6%)

- “The responsibility for rationing health care should rest with doctors.”
  - 48% agreed (vs. 34% disagreed)
UK Results (iii)

- “The responsibility for rationing health care should rest with doctors.”
  - 75% agreed (vs. 15% disagreed)

- “Surveys of the general public’s opinions, like this one, should be used in the planning of health services.”
  - 91% agreed

- “If resources are to be rationed, higher priority should be given to treating the young rather than the elderly.”
  - 50% agreed (vs. 29% disagreed)
## International Comparison

<table>
<thead>
<tr>
<th>Service</th>
<th>HK</th>
<th>UK</th>
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<tbody>
<tr>
<td>Treatment for children</td>
<td>1</td>
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<tr>
<td>High technology surgery</td>
<td>2</td>
<td>7</td>
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<td>10</td>
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<tr>
<td>Treatment for people aged &gt;75</td>
<td>9</td>
<td>12</td>
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<tr>
<td>Special care &amp; pain relief for people who are dying</td>
<td>10</td>
<td>2</td>
</tr>
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Financing an elder-friendly health care system
• Flexibility
• Responsive
• Choice
• Medical social integration
• Self-financing versus government provided
Conclusion

- Health and social care systems need to adapt to dealing with multi-morbidity, dependency and frailty, rather than on individual chronic diseases that commonly occur with ageing
- Responsive primary care system or integrated health and social care in the community
- Develop financing of long term care of elderly in the community