Does informal care compensate formal care as a consequence of COVID-19?
A cross-sectional study on service utilisation among community-dwelling people living with dementia in Hong Kong during the post-pandemic period

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Introduction
Methods
Results
Discussion

Ageing Population & Dementia in Hong Kong

Source: TIP-CARD rapid situation analysis
**Situation of COVID-19 in Hong Kong**

- 12,467 confirmed cases as of Dec 6th
- ≤10 daily new local cases since later March
- No new local case since Oct 8th
- Over 71.1% residents has vaccinated with at least one dose;


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**‘New Normal’ in the post-pandemic period**

- “New normal” life with strict prevention and control measures of COVID-19
- Healthcare and social care services have been resumed

Service use of people living with dementia and COVID-19

- During the post-pandemic period, can informal caregiving for dementia get back to “normal”?
- Does informal care compensate formal care as a consequence of COVID-19?


Research Aim

- To examine the impact of COVID-19 on service use pattern of formal-informal care for people with dementia during the post-pandemic period.
Data

- **Cost of dementia study, TIP-CARD project**
  [https://www.tip-card.hku.hk/](https://www.tip-card.hku.hk/) @tip_card
- Phone survey starting from March 2021 (Ongoing, N=482/1,000)
- Dyad participants: people living with dementia (incl. MCI) and their informants in the community

Tools to Inform Policy: Chinese Communities’ Action in Response to Dementia (TIP-CARD)

TIP-CARD is a three-year research project consisting of three inter-related studies. It aims to build on existing data, fill gaps in evidence, and consolidate findings with stakeholders to provide the policy tools to inform the best strategies for dementia care in Chinese communities.
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TIP-CARD is a three-year research project consisting of three inter-related studies. It aims to build on existing data, fill gaps in evidence, and consolidate findings with stakeholders to provide the policy tools to inform the best strategies for dementia care in Chinese communities.

Aim: To generate new evidence about the cost and impact of dementia in the community

Methods

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- Dyad participants: people living with dementia (incl. MCI) and their informants in the community
Informal care time

- Care time of multiple informal carers in past 30 days
- Captured by “Resource Utilization in Dementia” (RUD)
  - Time for Activities of daily living (ADL) tasks
  - Time for Instrumental activities of daily living (IADL) tasks
  - Time for supervision tasks

COVID-19 impact on service utilisation

**Question**: “Due to COVID-19, to what extent your recent service utilisation in healthcare/social care/informal care has been affected?”

A. No impact; B. Increased by ____%; C. Decreased by ____%
Analytic strategy

A two-part model was used to examine association between increased informal care hours and decrease in formal care service use

- First part: Logit regression to predict the probability of increasing informal care
- Second part: Generalised linear model (GLM) with the log link and gamma distribution to predict the level of increased care hours if DV is positive

Sample characteristics

<table>
<thead>
<tr>
<th>People living with dementia</th>
<th>Mean/N</th>
<th>SD/%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
<td>82.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>324</td>
<td>67.4%</td>
</tr>
<tr>
<td>Diagnosis of dementia or MCI (Yes)</td>
<td>423</td>
<td>87.9%</td>
</tr>
<tr>
<td>Number of comorbidity other than dementia/MCI</td>
<td>2.1</td>
<td>1.6</td>
</tr>
<tr>
<td>ADL score (Modified Barthel ADL index, range 0-100)</td>
<td>70.2</td>
<td>32.7</td>
</tr>
<tr>
<td>IADL (Lawton IADL scale, range 0-27)</td>
<td>7.2</td>
<td>7.7</td>
</tr>
<tr>
<td>Cognition(HK-MoCA-5min, range 0-23)</td>
<td>7.0</td>
<td>7.7</td>
</tr>
</tbody>
</table>
Use of health care and social care services

- Most participants received healthcare services in the past three months.
- Over half of participants didn’t receive social care service (Due to our purposive sampling).

Use of informal care

- Over half participants have more than one informal carer
- Over one-third participants have more than one main informal carer
Use of informal care (cont’d)

- Average monthly care time of multiple informal carer: 557.8 hrs
- 45% informal care time is attributed to supervision time

Average Daily Hours of multiple informal carer by care tasks

<table>
<thead>
<tr>
<th>Supervision</th>
<th>ADL tasks</th>
<th>IADL tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3hrs</td>
<td>5.8hrs</td>
<td>4.5hrs</td>
</tr>
</tbody>
</table>

Note: maximum daily care hours per informal carer are 18 hours

COVID-19 impact on service use

<table>
<thead>
<tr>
<th>Covid-19 impact</th>
<th>Healthcare</th>
<th>Social care</th>
<th>Informal care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>Average change %</td>
<td>N (%)</td>
</tr>
<tr>
<td>No impact</td>
<td>396 (82.5%) / 439 (91.27%) / 358 (78%) /</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Increased use</td>
<td>15 (3.13%) 67.77% 4 (0.83%) 43%</td>
<td>86 (18.74%)</td>
<td>53.40%</td>
</tr>
<tr>
<td>Decreased use</td>
<td>69 (14.38%) 48.94% 38 (7.9%) 70.50% 15 (3.27%)</td>
<td>47.16%</td>
<td></td>
</tr>
</tbody>
</table>

- 14.38% and 7.9% participants reported decreased service utilisation in healthcare and social care respectively, among whom their service use decreased by 48.9% and 70.5% averagely.
- 18.74% participants reported an increase in informal care, with an average increase rate of 53.4%.
Results of the two-part model analysis on increased monthly informal care hours due to COVID-19

<table>
<thead>
<tr>
<th></th>
<th>Logit (n=418)</th>
<th>GLM (n=79)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>SE</td>
</tr>
<tr>
<td>Decrease in social care service use due to COVID-19 (ref.=no decrease)</td>
<td>7.078***</td>
<td>2.812</td>
</tr>
<tr>
<td>Decrease in healthcare service use due to COVID-19 (ref.=no decrease)</td>
<td>3.125***</td>
<td>1.014</td>
</tr>
<tr>
<td>Gender (ref.=male)</td>
<td>0.861</td>
<td>0.251</td>
</tr>
<tr>
<td>Age</td>
<td>1.010</td>
<td>0.016</td>
</tr>
<tr>
<td>Number of informal carer</td>
<td>0.967</td>
<td>0.104</td>
</tr>
<tr>
<td>Dementia diagnosis</td>
<td>0.586</td>
<td>0.252</td>
</tr>
<tr>
<td>Number of comorbidity</td>
<td>0.901</td>
<td>0.081</td>
</tr>
<tr>
<td>ADL score</td>
<td>1.003</td>
<td>0.005</td>
</tr>
<tr>
<td>IADL score</td>
<td>0.987</td>
<td>0.025</td>
</tr>
<tr>
<td>MoCA-5min score</td>
<td>1.002</td>
<td>0.023</td>
</tr>
</tbody>
</table>

- The logit model showed those who reported a decrease in formal care service use had a higher likelihood of receiving additional informal care (Social care, OR: 7.1; Health care, OR: 3.1)
- The GLM showed those with more informal carers or with more IADL needs received higher level of increased informal care hours.

Notes: SE, standard error; GLM, generalised linear model; Participants who reported a decrease in informal care due to COVID-19 were not included in this analysis (n=15); * p<0.05, ** p<0.01, *** p<0.001

Discussion

Changes in service use pattern of formal care due to COVID-19 is related to that of informal care.

Informal care may be invoked as a compensatory mechanism for the reduced formal care, while increased informal care hours is dependent on the availability of family carers and care needs.

In the post-pandemic period, long-term care policy should consider the impact of COVID-19 on formal-informal care relationship.
Thank You

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