Real-time population data on depression and suicidal ideation
Original Contribution

Direct Participation in and Indirect Exposure to the Occupy Central Movement and Depressive Symptoms: A Longitudinal Study of Hong Kong Adults

Michael Y. Ni*, Tom K. Li, Herbert Pang, Brandford H. Y. Chan, Betty Y. Yuan, Ichiro Kawachi, C. Mary Schooling, and Gabriel M. Leung

*Correspondence to Dr. Michael Y. Ni, School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR, People’s Republic of China (e-mail: nmmy@hku.hk).

Longitudinal Patterns and Predictors of Depression Trajectories Related to the 2014 Occupy Central/Umbrella Movement in Hong Kong

Michael Y. Ni, MBBS, MPH, Tom K. Li, MSc, Herbert Pang, PhD, Brandford H. Y. Chan, PhD, Ichiro Kawachi, MD, PhD, KazemKayaliya Vinasamuth, PhD, Catherine Mary Schooling, PhD, and Gabriel Matthew Leung, MD, MPH

Cohort Profile: FAMILY Cohort

Gabriel M Leung,1 Michael Y Ni1,* Paul TK Wong,1,2 Paul H Lee,1,3 Brandford HY Chan,1 Sunita M Stewart,4 C Mary Schooling,1,5 Janice M Johnston,1 Wendy WT Lam,1 Sophia SC Chan,6 Ian McDowell,7 and Tai Hing Lam1

*Corresponding author: School of Public Health, Li Ka Shing Faculty of Medicine, University of Hong Kong, 7 Sassoon Road, Hong Kong SAR, People’s Republic of China. E-mail: nmmy@hku.hk
Global financial crisis

Manila hostage incident
Resignation of five LegCo members

4th Chief Executive assumed office
Opposition and shelving of Moral and National Education Subject (德育及國民教育科)

National People’s Congress Standing Committee (NPCSC) issued August 31st decision on political reform

Occupy Central

5th Chief Executive assumed office

Four LegCo members disqualified

Three Occupy Central student leaders imprisoned

Posts regarding suicide of a government official’s family member appeared in university campuses

Hong Kong International Airport Master Plan 2030 (three airport runways) approved

Lead found in drinking water

Seven police officers sentenced to imprisonment (related to Occupy Central)

Mong Kok unrest
Two LegCo members-elects disqualified
Causeway Bay Books incident

2019 Anti-Extradition bill protests

Co-location bill passed

Public Transport Fare Subsidy Scheme
Caring and Sharing Scheme
Announced the Fugitive Offenders and Mutual Legal Assistance in Criminal Matters Legislation (Amendment) Bill 2019
Lantau Tomorrow Vision (明日大嶼)
How did we assess mental health?

Patient Health Questionnaire (PHQ-9): **Depressive symptoms**

- Validated in FAMILY Cohort (Yu X et al 2012)

**Total score ≥10:** **Probable Depression**

- 85% sensitivity & 80% specificity for diagnosis of major depression
  (meta-analysis by Manea L et al 2012)

**PHQ-9 ninth item score ≥1:** **Potential Suicidal Ideation**

Yu X, Tam W, Wong P, Lam T, Stewart S. The Patient Health Questionnaire-9 for measuring depressive symptoms among the general population in Hong Kong. *Comprehensive Psychiatry* 2012

PHQ-9

June-July 2019 9.1%
PHQ-9

June-July 2019

9.1%
PHQ-9

2014 Occupy Central

5.3%
Probable depression over time

$p < 0.001$

$p < 0.001$

$p < 0.01$

Prevalence of probable depression (%)

<table>
<thead>
<tr>
<th>Time</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2014</td>
<td>1.3%</td>
</tr>
<tr>
<td>2014 Occupy Central</td>
<td>5.3%</td>
</tr>
<tr>
<td>September 2017</td>
<td>6.1%</td>
</tr>
<tr>
<td>June/July 2019</td>
<td>9.1%</td>
</tr>
</tbody>
</table>
# Probable depression by demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>June-July 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Probable depression (95% CI)</td>
</tr>
<tr>
<td>Overall</td>
<td>9.1 (7.5, 10.6)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>5.7 (2.2, 9.1)</td>
</tr>
<tr>
<td>30-39</td>
<td>7.8 (4.2, 11.4)</td>
</tr>
<tr>
<td>40-49</td>
<td>5.5 (2.6, 8.3)</td>
</tr>
<tr>
<td>50-59</td>
<td>12.0 (8.2, 15.8)</td>
</tr>
<tr>
<td>60 and above</td>
<td>11.5 (8.2, 14.9)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>10.7 (8.1, 13.2)</td>
</tr>
<tr>
<td>Women</td>
<td>7.8 (5.8, 9.8)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>11.5 (7.6, 15.5)</td>
</tr>
<tr>
<td>Secondary</td>
<td>9.8 (7.4, 12.3)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>6.8 (4.5, 9.1)</td>
</tr>
<tr>
<td><strong>Household income</strong></td>
<td></td>
</tr>
<tr>
<td>Under 10,000</td>
<td>12.9 (8.5, 17.3)</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>6.5 (3.5, 9.6)</td>
</tr>
<tr>
<td>20,000-39,999</td>
<td>8.9 (5.7, 12.0)</td>
</tr>
<tr>
<td>40,000 and above</td>
<td>4.6 (2.1, 7.2)</td>
</tr>
<tr>
<td>Unknown</td>
<td>13.6 (9.1, 18.2)</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>6.4 (4.7, 8.1)</td>
</tr>
<tr>
<td>Economically Inactive</td>
<td>14.2 (10.9, 17.6)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7.4 (-1.0, 15.8)</td>
</tr>
</tbody>
</table>
Factors associated with probable depression

- Income
- Employment status
- Education status
- Sex
Factors associated with probable depression

- Income
- Education status
- Employment status
- Age
- Sex
Probable depression by age groups

- 2011 - 2014
- 2014 Occupy Central
- September 2017
- June / July 2019

Age groups:
- 20 - 29
- 30 - 39
- 40 - 49
- 50 - 59
- 60 and above

Percentage of probable depression
Potential suicidal ideation over time

- 2011-2014: 1.1% (p < 0.001)
- 2014 Occupy Central: 3.6% (p > 0.05)
- September 2017: 5.3% (p > 0.05)
- June/July 2019: 4.6% (p > 0.05)
Management of suicidal cases

Clinical psychologist contacted at-risk participants

Provided information on Integrated Community Centres for Mental Wellness and mental health hotlines

Provided referral letters to health care professionals

Advised participants to attend Accident & Emergency Departments when needed

2466 7350
2382 0000
2896 0000
2389 2222
Intra-familial conflicts due to socio-political reasons

Source of conflict scale: Yau & Smetana, 1996; Yau & Smetana, 2003
Limitations

Our sample did not include children and youths below the age of 18. This will be addressed in a newly commissioned survey beginning next week, drawing on the FAMILY cohort, Children of 1997 cohort and a de novo sample of randomly chosen youth between 15-25 years old.
Take-home Messages

• Health care professionals need to be vigilant about the mental health impact during and indeed long after significant social events, including potential community spillover effects.

• This should translate into carefully hearing out, listening to and heeding the voices of young people as appropriate; while at the same time be on the alert for mental distress in older adults.

• Prior evidence from Occupy Central also cautions against rumination on the news and social media during and after major social upheavals.

• Proper and adequate social support and reducing intra-familial and society-wide socio-political conflicts may mitigate these adverse mental health effects.
Take-home Messages

• Individuals should raise self-awareness of their own and their family’s mental state.

• Specifically, people should be vigilant of the emergence of depressive symptoms which include pervasive low mood, diminished motivation, loss of interest, sleeplessness, reduced appetite, negative rumination (e.g. sense of guilt, helplessness, worthlessness and hopelessness), and thoughts or even plans of self-harm.

• Progression or persistence of these symptoms, or impairment in daily, social and/or role functioning may already indicate the presence of a depressive disorder.

• Those who recognize these symptoms should seek help from mental health professionals promptly, and proper treatment is key to preventing undesirable outcomes and to achieving a quick recovery.