**Supplementary Table 1**. Care categorisation and Unit costs (US dollar)

|  |  |  |
| --- | --- | --- |
| **Care sectors**  | **Unit cost**  | **Source(s)** |
| *Psychiatric services*  |  |  |
| Psychiatric (inpatient) | $ 359 per day | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per patient day (mentally ill) |
| Psychiatric (outpatient) | $ 212 per attendance | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per psychiatric outreach attendance |
| Community-based Psychiatrists  | $ 157 per outpatient attendance | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per specialist outpatient attendance |
| Community-based Psychiatric nurses  | $ 73 per visit  | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per outreach visit by community nurse |
| *Non-Psychiatric services* |  |  |
| General care (inpatient) | $ 632 per day | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per patient day (general) |
| General care (outpatient) | $ 128 per attendance | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. The average cost of A&E attendance ($ 195) and general outpatient attendance ($60). |
| Community-based General Practitioner visits  | $ 60 per attendance | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per general outpatient attendance |
| Community-based nurses  | $ 73 per visit  | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per outreach visit by community nurse |
| *Rehabilitation* |  |  |
| Geriatric day hospital  | $ 286 per day attendance  | HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Page 427. Cost per geriatric day attendance  |
| Occupational therapist consultation  | $ 29 per hour  | HK Social Welfare Department (2018). The middle point of monthly salary of an Occupational Therapist II is $ 4,682. The hourly rate is equal to monthly salary divided by 160 estimated working hours per month.  |
| *Social care providers*  |  |  |
| Social workers | $ 41 per hour | HK Social Welfare Department (2018). The mid-point of monthly salary of an Assistant Social Work Officer is $ 6,491. The hourly rate is equal to the monthly salary divided by 160 estimated working hours per month.  |
| Clinical psychologist  | $ 63 per hour | HK Social Welfare Department (2018). The mid-point of monthly salary of a Clinical Psychologist is $ 10,010. The hourly rate is equal to the monthly salary divided by 160 estimated working hours per month.  |
| Personal care helper  | $ 14 per hour | HK Social Welfare Department (2018). The mid-point of monthly salary of a Personal Care Worker is $ 2,280. The hourly rate is equal to the monthly salary divided by 160 estimated working hours per month.  |

Reference: HK Government Secretariat: Food and Health Bureau (Health Branch), 2019. Head 140. Retrieved from https://www.budget.gov.hk/2019/eng/pdf/head140.pdf. Accessed May 30, 2020. HK Social Welfare Department (2018). Salary Scale of Common Posts in the Non-governmental Organisations w.e.f. 1.4.2018. Retrieved from https://www.swd.gov.hk/storage/asset/section/728/en/Salary\_Scales\_of\_Common\_Posts\_w.e.f.\_01.04.2018.pdf. Accessed May 30, 2020. U.S. Department of Treasury (2018) Treasury reporting rates of exchange (https://fiscal.treasury.gov/files/reports-statements/treasury-reporting-rates-exchange/itin-12-31-2018.pdf). Accessed 29 May 2020.

**Supplementary Table 2**. Sensitivity analysis: Results of the two-part model analysis on care expenditures without a previous diagnosis of depression/anxiety (N=2,707)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|      | **Health care** | **Rehabilitation** | **Social care** | **Total** |
| Logit | GLM | Logit | GLM | Logit | GLM | Logit | GLM |
| OR | Estimate | OR | Estimate | OR | Estimate | OR | Estimate |
| (S.E.) | (S.E.) | (S.E.) | (S.E.) | (S.E.) | (S.E.) | (S.E.) | (S.E.) |
| *Severity level (ref.: non-depressed)* |   |   |   |   |   |   |   |   |
| *Mild* | 1.59\*\*\* | 0.92\*\*\* | 2.02\*\* | 0.39 | 0.76\* | 0.53 | 1.51\*\* | 0.95\*\*\* |
| (0.19) | (0.15) | (0.46) | (0.32) | (0.1) | (0.27) | (0.19) | (0.14) |
| Moderate | 1.75\*\* | 0.57\*\*\* | 1.90\* | -0.58 | 1.71\*\* | -0.39 | 1.63\*\* | 0.54\*\*\* |
| (0.31) | (0.15) | (0.57) | (0.37) | (0.29) | (0.28) | (0.31) | (0.15) |
| Moderately Severe | 4.19\*\* | 1.25\*\*\* | 3.16\*\* | -0.35 | 2.31\*\* | -0.06 | 3.60\*\* | 1.22\*\*\* |
| (1.81) | (0.32) | (1.27) | (0.48) | (0.64) | (0.32) | (1.58) | (0.31) |
|      | **Psychiatric care** | **Non-Psychiatric care** |   |
| Logit | GLM | Logit |   |
| OR | Estimate | OR | Estimate |
| (S.E.) | (S.E.) | (S.E.) | (S.E.) |
| *Severity level (ref.: non-depressed)* |   |   |   |   |
| *Mild* | 1.92\*\*\* | 0.02 | 1.45\*\* | 0.94\*\*\* |
| (0.36) | (0.17) | (0.17) | (0.15) |
| Moderate | 4.27\*\*\* | 0.33 | 1.48\* | 0.50\*\* |
| (0.9) | (0.19) | (0.25) | (0.16) |
| Moderately Severe | 6.34\*\*\* | 0.08 | 3.41\*\* | 1.24\*\*\* |
| (1.79) | (0.21) | (1.29) | (0.34) |

Notes: Results controlled for gender, age, marital status, education, poverty status, living alone, Montreal Cognitive Assessment, and chronic diseases. OR: Odds Ratio; SE: Standard Error; β: Coefficient; GLM: Generalized Linear Model.

**Supplementary Table 3**. Results of the two-part model analysis on care expenditures using PHQ-9 score as a continuous variable (N=2,707)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | Health care  | Rehabilitation  | Social care  | Overall | Psychiatric care | Nonpsychiatric care |
|  | Logit  | GLM  | Logit  | GLM  | Logit  | GLM  | Logit  | GLM  | Logit  | GLM  | Logit  | GLM  |
|   | OR (SE) | β (SE) | OR (SE) | β (SE) | OR (SE) | β (SE) | OR (SE) | β (SE) | OR (SE) | β (SE) | OR (SE) | β (SE) |
| PHQ-9 Score | 1.24\*\* | 0.31\*\*\* | 1.06\*\* | -0.05 | 1.05\*\* | -0.02 | 1.18\* | 0.34\*\*\* | 0.99 | 0.07 | 1.23\*\* | 0.32\*\*\* |
|  | *(-0.1)* | *(-0.08)* | *(-0.02)* | *(-0.03)* | *(-0.01)* | *(-0.02)* | *(-0.09)* | *(-0.08)* | *(-0.11)* | *(-0.08)* | *(-0.09)* | *(-0.08)* |
| PHQ-9 Score2 | 0.98 | -0.02\* | - | - | - | - | 0.99 | -0.03\*\* | 1.02 | 0 | 0.98\* | -0.02\* |
|  | *(-0.01)* | *(-0.01)* | *(-)* | *(-)* | *(-)* | *(-)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* |
| PHQ-9 Score3 | 1.001 | 0 | - | - | - | - | 1 | 0.001 | 1 | 0 | 1.001 | 0 |
|  | *(0)* | *(0)* |  |  |  |  | *(0)* | *(0)* | *(0)* | *(0)* | *(0)* | *(0)* |
| *Control variables*  |  |  |  |  |  |  |  |  |  |  |  |  |
| Female | 0.93 | -0.92\*\*\* | 0.94 | -0.18 | 0.84 | -0.61\* | 0.89 | -0.89\*\*\* | 0.85 | 0.30\* | 1.04 | -0.96\*\*\* |
|  | *(-0.13)* | *(-0.19)* | *(-0.21)* | *(-0.29)* | *(-0.12)* | *(-0.3)* | *(-0.13)* | *(-0.18)* | *(-0.16)* | *(-0.14)* | *(-0.14)* | *(-0.19)* |
| Married | 0.91 | -0.24 | 1.03 | 0.09 | 1.17 | -0.17 | 0.92 | -0.24 | 0.68\* | 0.05 | 0.96 | -0.22 |
|  | *(-0.13)* | *(-0.18)* | *(-0.23)* | *(-0.32)* | *(-0.19)* | *(-0.25)* | *(-0.13)* | *(-0.18)* | *(-0.13)* | *(-0.13)* | *(-0.13)* | *(-0.18)* |
| Age | 1.026\*\* | 0.03\*\*\* | 1 | -0.02 | 1.01 | -0.01 | 1.04\*\*\* | 0.03\*\* | 0.95\*\*\* | 0 | 1.04\*\*\* | 0.04\*\*\* |
|  | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.02)* | *(0)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* | *(-0.01)* |
| Years of education | 1.02 | 0 | 0.99 | -0.02 | 0.98 | 0.04 | 1.01 | 0 | 1.02 | 0.01 | 1.02 | 0 |
|  | *(-0.01)* | *(-0.02)* | *(-0.02)* | *(-0.03)* | *(-0.01)* | *(-0.04)* | *(-0.01)* | *(-0.02)* | *(-0.02)* | *(-0.02)* | *(-0.01)* | *(-0.02)* |
| Living alone | 0.97 | -0.27 | 1.07 | 0.08 | 2.33\*\*\* | -0.71\* | 1.18 | -0.29 | 0.94 | 0.41\* | 0.92 | -0.27 |
|  | *(-0.14)* | *(-0.21)* | *(-0.22)* | *(-0.3)* | *(-0.37)* | *(-0.26)* | *(-0.18)* | *(-0.21)* | *(-0.18)* | *(-0.16)* | *(-0.12)* | *(-0.21)* |
| Poverty status: Welfare recipients | 1.27 | 0.12 | 1.07 | 0.76\*\* | 1.60\*\*\* | 1.52\*\*\* | 1.35\* | 0.19 | 1.31 | 0.25 | 1.15 | 0.11 |
| *(-0.17)* | *(-0.17)* | *(-0.2)* | *(-0.28)* | *(-0.2)* | *(-0.29)* | *(-0.2)* | *(-0.17)* | *(-0.22)* | *(-0.16)* | *(-0.15)* | *(-0.18)* |
| MoCA | 1 | -0.01 | 0.99 | 0.06 | 1 | -0.003 | 1 | -0.01 | 1.02 | -0.02 | 0.99 | -0.01 |
|  | *(-0.02)* | *(-0.02)* | *(-0.02)* | *(-0.03)* | *(-0.02)* | *(-0.03)* | *(-0.02)* | *(-0.02)* | *(-0.02)* | *(-0.02)* | *(-0.01)* | *(-0.02)* |
| Previous diagnosis of depression/anxiety  | 1.54 | 0.25 | 1.4 | -0.3 | 1.08 | 0.03 | 1.46 | 0.24 | 8.74\*\*\* | -0.27\* | 0.94 | 0.22 |
| *(-0.35)* | *(-0.18)* | *(-0.38)* | *(-0.33)* | *(-0.23)* | *(-0.31)* | *(-0.34)* | *(-0.19)* | *(-1.59)* | *(-0.13)* | *(-0.18)* | *(-0.21)* |
| With more than 4 chronic diseases | 2.14\*\*\* | -0.01 | 2.76\*\*\* | 0.25 | 1.26 | 0.54 | 2.41\*\*\* | 0.08 | 0.85 | -0.37\*\* | 2.33\*\*\* | -0.01 |
| *(-0.47)* | *(-0.15)* | *(-0.59)* | *(-0.32)* | *(-0.22)* | *(-0.42)* | *(-0.59)* | *(-0.15)* | *(-0.19)* | *(-0.14)* | *(-0.5)* | *(-0.16)* |
| Constant | 0.37 | 5.79\*\*\* | 0.05\* | 8.46\*\*\* | 0.02 | 7.52\*\*\* | 0.2 | 6.20\*\*\* | 1.06 | 6.81\*\*\* | 0.19\* | 5.62\*\*\* |
|  | *(-0.31)* | *(-0.92)* | *(-0.07)* | *(-1.94)* | *(-0.02)* | *(-1.23)* | *(-0.17)* | *(-0.91)* | *(-1.3)* | *(-0.83)* | *(-0.16)* | *(-0.98)* |

Notes: MoCA: Montreal Cognitive Assessment; OR: Odds Ratio; β: Coefficient; GLM: Generalized Linear Model; SE: Standard Error; Standard errors in parentheses. PHQ-9: Patient Health Questionnaire. \* p<0.05; \*\* p<0.01; \*\*\* p<0.001.