eTable 1. Distribution of the study population according to study group (%)

|                         | Control (<65 years) | Treated (≥65 years) | P     |
|-------------------------|---------------------|---------------------|-------|
|                         | total Before | After |  | total Before | After |     |
| Number of participants  | 5,451 1,795 | 3,656 | 7,019 1,478 | 3,363 |       |
| Age, years, mean (SE)   | 56.7 (0.10) | 57.0 (0.07) | 72.1 (0.12) | 73.0 (0.09) |       |
| Sex                     |  |  |  |  |  |  |
| Men                     | 2,359 43.3 0.95  | 2,095 43.9 | 43.0 | 0.55  |  |
| Women                   | 3,092 56.7 | 56.8 | 2,746 56.1 | 57.0 |       |
| Education               |  |  |  |  |  |  |
| Elementary              | 1,269 35.1 | 19.3 | 2,835 68.5 | 59.1 |       |
| Middle school           | 986 22.5  <0.01 | 640 12.0 | 14.9 | <0.01  |  |
| High school             | 1,767 29.4 | 36.2 | 708 12.9 | 16.6 | <0.01  |  |
| College over            | 1,177 13.1 | 27.2 | 392 6.6 | 9.4 |       |
| Income                  |  |  |  |  |  |  |
| Low                     | 772 16.4 | 13.2 | 2,438 53.3 | 49.7 |       |
| Middle-low              | 1,373 26.4 | 24.9 | 1,224 22.9 | 26.7 | <0.01  |  |
| Middle-high             | 1,484 26.7 | 27.8 | 687 12.9 | 14.9 | <0.01  |  |
| High                    | 1,784 30.5 | 34.1 | 451 11.0 | 8.7 |       |

SE, standard error.
Unweighted number of the sample and weighted %.

*a* Control group (<65) included individuals aged 50–64 years.

*b* Treatment group (≥65) included individuals aged 65–80 years.
cBefore the policy (2010 year).
dAfter the policy (2016–2018 year).
eTreatment group for triple difference (DDD) analysis.
fControl group for DDD analysis.
### Table 2. Robustness checks with the prior period (2007 to 2009) for the DD and DDD models (%)

| Outcome variables | Double Difference (DD) | | Triple Difference (DDD) |
| --- | --- | --- | --- |
| | Net change after expansion | | Net change after expansion |
| **Baseline** | **Mean % in aged 65 over** | **Unadjusted % (95% CI)** | **Adjusted % (95% CI)** | **Mean % in aged 65 over with low-income** | **Unadjusted % (95% CI)** | **Adjusted % (95% CI)** |
| **Access to dental care** | | | | | | |
| Oral examination | 28.6 | 0.03 (-0.03 to 0.08) | 0.03 (-0.03 to 0.08) | 22.9 | 0.14 (-0.07 to 0.34) | 0.13 (-0.07 to 0.33) |
| **Clinical oral health outcomes** | | | | | | |
| Number of remaining teeth | 16.0 | -0.14 (-1.12 to 0.84) | -0.21 (-1.22 to 0.08) | 15.2 | -0.86 (-4.34 to 2.62) | -4.97 (-5.49 to 1.56) |
| Edentulous | 11.4 | 0.001 (-0.03 to 0.03) | 0.004 (-0.03 to 0.03) | 12.2 | 0.04 (-0.06 to 0.13) | 0.04 (-0.06 to 0.14) |
| Denture wearing | 79.7 | 0.06 (-0.01 to 0.11) | 0.03 (-0.02 to 0.09) | 78.1 | 0.15 (-0.02 to 0.32) | 0.14 (-0.04 to 0.33) |
| **Perceived oral health outcomes related quality of life** | | | | | | |
| Self-reported poor oral health | 54.4 | 0.002 (-0.06 to 0.06) | -0.01 (-0.07 to 0.06) | 57.7 | -0.06 (-0.28 to 0.15) | -0.06 (-0.27 to 0.16) |

CI, confidence interval.
Inference denotes: **P**<0.01; **P**<0.05; *P*<0.1.
Means, DD, and DDD estimated by linear regression.

- Baseline denotes 2007 year.
- Adjusted for sex, income and education in DD model, while sex and education in DDD model.
- Prior period defined as year 2007 with year 2009 as the policy implementation year.
### eTable 3. Robustness checks with the alternative control (aged 60-64) and treatment (aged 65-69) group for the DD and DDD models (%)

| Outcome variables                  | Double Difference (DD) |                      |                      | Triple Difference (DDD) |                      |                      |
|------------------------------------|-------------------------|----------------------|----------------------|-------------------------|----------------------|----------------------|
|                                    | Baseline Mean % in aged 65 over | Unadjusted % (95% CI) | Adjusted % (95% CI) | Baseline Mean % in aged 65 over | Unadjusted % (95% CI) | Adjusted % (95% CI) |
|                                    |                         |                      |                      |                         |                      |                      |
| **Access to dental care**          |                         |                      |                      |                         |                      |                      |
| Unmet dental needs                 | 32.3                    | -1.7 (-8.8 to 5.5)   | -1.8 (-9.0 to 5.4)   | 41.0                    | -24.5** (-45.6 to -3.3) | -25.5** (-46.8 to 4.2) |
| Oral examination                   | 16.4                    | -1.9 (-8.2 to 4.3)   | -2.1 (-8.4 to 4.2)   | 12.6                    | 20.0 (-0.9 to 40.9)    | 21.8** (0.8 to 42.7)   |
| Preventive care                    | 0.0                     | 9.2 (-2.2 to 20.5)   | 8.5 (-3.6 to 20.6)   | 0.0                     | -14.1 (-51.5 to 23.2)  | -8.6 (-51.5 to 34.4)   |
| Periodontal treatment              | 7.7                     | -1.2 (-13.7 to 11.4) | -4.7 (-17.7 to 8.4)  | 7.7                     | -25.1 (-65.0 to 14.9)  | -17.0 (-57.6 to 23.6)  |
| Extraction of teeth                | 7.7                     | 2.5 (-9.9 to 14.9)   | -3.5 (-17.0 to 10)   | 7.7                     | -0.75 (-46.0 to 31.1)  | 0.6 (-40.3 to 41.6)    |
| **Clinical oral health outcomes**  |                         |                      |                      |                         |                      |                      |
| Periodontitis (CPITN)              | 42.3                    | -3.1 (-10.6 to 4.4)  | -3.7 (-11.3 to 3.9)  | 45.3                    | 16.7 (-7.1 to 40.5)    | 18.1 (-6.1 to 42.3)    |
| Number of remaining teeth          | 19.8                    | 0.2 (-0.9 to 1.3)    | 0.1 (-1.0 to 1.2)    | 19.4                    | -3.69** (-7.3 to 0.0)  | -3.7** (-7.3 to 0.0)   |
| Edentulous                         | 3.6                     | 0.1 (-2.3 to 2.6)    | -0.04 (-2.6 to 2.5)  | 4.2                     | -0.8 (-7.8 to 6.2)     | -0.6 (-8.0 to 6.7)     |
| Denture wearing                    | 76.1                    | 2.6                  | 1.4                  | 76.4                    | 12.1                  | 11.4                  |
### Perceived oral health outcomes related quality of life

|                          | Mean (95% CI)                                      |
|--------------------------|---------------------------------------------------|
| Self-reported poor oral health | 54.4 (-10.4 to 4.5)                                      |
| Dental implants          | 11.9 (-1.5 to 10)                                    |
| Denture needs            | 23.7 (-7.6 to 3.6)                                   |

CI, confidence interval; CPITN, Community Periodontal Index of Treatment Needs.
Inference denotes: *** $P<0.01$; ** $P<0.05$; * $P<0.1$.
Means, DD, and DDD estimated by linear regression.

*a*Baseline denotes 2010 year as a before the policy.

*b*Adjusted denotes sex, income and education in DD model, while sex and education in DDD model.
**eTable 4. Main results of DD and DDD analyses (%)**

| 2012–2018 | Double Difference (DD) | Net change after expansion | Triple Difference (DDD) | Net change after expansion |
|------------|-------------------------|----------------------------|-------------------------|----------------------------|
| **Outcome variables** | Baseline Mean % in aged 65 over | Unadjusted % (95% CI) | Adjusted % (95% CI) | Baseline Mean % in aged 65 over with low-income | Unadjusted % (95% CI) | Adjusted % (95% CI) |
| | | | | | | |
| Unmet dental needs | 28.8 | 6.9*** (3.3 to 10.6) | 6.3*** (2.6 to 10.0) | 33.4 | -14.4*** (-25.6 to -3.1) | -15.9*** (-27.3 to -4.5) |
| Access to dental care | | | | | | |
| Oral examination | 13.6 | -6.8*** (-9.8 to -3.8) | -5.4*** (-8.5 to -2.4) | 11.1 | -5.7 (-16.1 to -4.6) | -2.6 (-13.1 to 7.8) |
| Preventive care | 3.3 | 4.5 (-7.2 to 16.2) | 2.4 (-10.0 to 14.8) | 2.8 | -1.2 (-38.3 to 35.8) | -3.4 (-42.2 to 35.3) |
| Periodontal treatment | 7.8 | 13.6** (0.8 to 26.3) | 8.6 (-5.0 to 22.3) | 5.6 | -3.4 (-43.0 to 36.2) | -6.6 (-47.5 to 34.3) |
| Extraction of teeth | 10.0 | 14.6** (1.8 to 27.4) | 7.4 (-6.5 to 21.4) | 11.1 | 10.1 (-28.7 to 49.0) | 6.3 (-34.0 to 46.6) |
| Clinical oral health outcomes | | | | | | |
| Periodontitis (CPITN) | 42.3 | -0.1 (-4.0 to 3.9) | -0.5 (-4.6 to 3.5) | 44.2 | -2.8 (-15.9 to 10.3) | -2.1 (-15.3 to 11.1) |
| Number of remaining teeth | 16.9 | 0.2 (-0.4 to 0.8) | 0.6 (-0.02 to 1.2) | 15.9 | -4.1*** (-6.1 to -2.0) | -3.1** (-5.2 to -1.1) |
| Edentulous | 9.3 | -0.1 (-1.9 to 1.6) | -0.7 (-2.5 to 1.1) | 11.1 | 3.9 (-1.6 to 9.5) | 1.8 (-3.7 to 7.3) |
| Denture wearing | 79.9 | 2.2 (-1.2 to 5.5) | 1.5 (-2.1 to 5.0) | 82.5 | 3.1 (-7.5 to 13.7) | 3.4 (-7.6 to 14.4) |
| Denture needs | 26.0 | -1.5 (*1.5 to 5.5) | -3.4** (-2.1 to 5.0) | 26.7 | -4.1 | -1.9 |
### Dental implants

|          |         |         |         |         |
|----------|---------|---------|---------|---------|
|          | (4.6 to 1.6) | (-6.5 to -0.4) | (-14.2 to 6.0) | (-11.6 to 7.9) |
| Dental implants | 11.4 | 2.2 | 2.8** | 8.8 |
|          | (-0.5 to 4.9) | (0.3 to 5.3) | (-17.8 to 0.8) | (-15.1 to 2.8) |

### Perceived oral health outcomes related quality of life

|          |         |         |         |         |
|----------|---------|---------|---------|---------|
|          | (0.5 to 4.9) | (0.3 to 5.3) | (0.3 to 5.3) | (0.3 to 5.3) |
| Self-reported poor oral health | 55.9 | 2.2 | 2.8** | 58.7 |
|          | (-17.8 to 0.8) | (-15.1 to 2.8) | (-15.1 to 2.8) | (-15.1 to 2.8) |

CI, confidence interval; CPITN, Community Periodontal Index of Treatment Needs.
Inference denotes: *** $P < 0.01$; ** $P < 0.05$; * $P < 0.1$.
Means, DD, and DDD estimated for the combined post-policy years (2012, 2014, 2015, and 2016–2018) by linear regression.
aBaseline denotes 2010 year.
bAdjusted for sex, income and education in DD model, while sex and education in DDD model.
eFigure 1. Unadjusted prevalence rate of outcome variables according to study groups and the most recent periods (2016–2018) (%). * <65 includes aged 50–64 years. ** ≥65 includes aged 65–80 years.