### Appendix Table 1. Effect decomposition of total effect of work reduction due to COVID-19 on dental pain (n = 11,403\textsuperscript{ab})

| Medicators\textsuperscript{c} | TE OR (95% CI\textsuperscript{e}) | NDE OR (95% CI\textsuperscript{e}) | NIE OR (95% CI\textsuperscript{e}) | PM\textsuperscript{d} % (95% CI\textsuperscript{e}) |
|-------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| Psychological distress: yes   | 1.59 (1.39, 1.81)                | 1.56 (1.36, 1.78)                | 1.015 (1.001, 1.033)             | 4.1 (0.2, 8.8) |
| Postponing dental visits: yes | 1.59 (1.39, 1.81)                | 1.49 (1.30, 1.71)                | 1.07 (1.05, 1.10)                | 17.3 (10.9, 25.4) |
| Toothbrushing frequency/time: reduced | 1.58 (1.39, 1.80) | 1.58 (1.39, 1.80) | 0.999 (0.993, 1.000) | -0.3 (-2.3, 0.1) |
| Between-meals eating: increased | 1.58 (1.39, 1.80) | 1.57 (1.37, 1.79) | 1.01 (0.99, 1.03) | 2.8 (-1.5, 8.1) |

Abbreviations: confidence interval, CI; odds ratio, OR; total effect, TE; natural direct effect, NDE; natural indirect effect, NIE; proportion mediated, PM

All models were adjusted for age, sex, residential region (Hokkaido/Tohoku, Kanto, Chubu, Kinki, Chugoku/Shikoku, Kyushu/Okinawa), household income reduction, job loss, educational attainment, household income in 2019, and dental checkup within the year

a People who reported income increment and those who were unemployed at the time of the survey were excluded

b People answered “other” for educational attainment were excluded for convergence in each bootstrap replication

c Each mediator was separately included

d Proportion mediated on a risk difference scale

e Estimated by bootstrap with 1,000 replications

### Appendix Table 2. Effect decomposition of total effect of job loss due to COVID-19 on dental pain (n = 11,403\textsuperscript{ab})

| Medicators\textsuperscript{c} | TE OR (95% CI\textsuperscript{e}) | NDE OR (95% CI\textsuperscript{e}) | NIE OR (95% CI\textsuperscript{e}) | PM\textsuperscript{d} % (95% CI\textsuperscript{e}) |
|-------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| Psychological distress: yes   | 2.10 (1.45, 2.91)                | 1.72 (1.10, 2.51)                | 1.22 (1.04, 1.55)                | 34.3 (8.1, 78.1) |
| Postponing dental visits: yes | 2.24 (1.55, 3.16)                | 1.98 (1.34, 2.76)                | 1.13 (1.03, 1.36)                | 21.3 (5.7, 48.7) |
| Toothbrushing frequency/time: reduced | 2.20 (1.50, 3.06) | 1.98 (1.35, 2.71) | 1.11 (1.01, 1.40) | 18.3 (1.3, 49.1) |
| Between-meals eating: increased | 2.18 (1.49, 2.97) | 2.09 (1.44, 2.89) | 1.04 (0.99, 1.17) | 7.6 (-1.4, 29.2) |

Abbreviations: confidence interval, CI; odds ratio, OR; total effect, TE; natural direct effect, NDE; natural indirect effect, NIE; proportion mediated, PM

All models were adjusted for age, sex, residential region (Hokkaido/Tohoku, Kanto, Chubu, Kinki, Chugoku/Shikoku, Kyushu/Okinawa), household income reduction, job loss, educational attainment, household income in 2019, and dental checkup within the year

a People who reported income increment and those who were unemployed at the time of the survey were excluded

b People answered “other” for educational attainment were excluded for convergence in each bootstrap replication

c Each mediator was separately included

d Proportion mediated on a risk difference scale

e Estimated by bootstrap with 1,000 replications
Appendix Table 3. Comparison of demographic characteristics between the study respondents and other national surveys

|                          | Study respondents | National surveys<sup>a</sup> |
|--------------------------|-------------------|-----------------------------|
|                          | n (%)             | %                           |
| **Age (years)**          |                   |                             |
| 15–19                    | 1,214 (4.8%)      | 6.0%                        |
| 20–29                    | 3,211 (12.6%)     | 12.4%                       |
| 30–39                    | 3,767 (14.8%)     | 15.3%                       |
| 40–49                    | 4,894 (19.2%)     | 18.8%                       |
| 50–59                    | 4,256 (16.7%)     | 15.3%                       |
| 60–69                    | 4,243 (16.7%)     | 18.3%                       |
| 70–79                    | 3,897 (15.3%)     | 13.8%                       |
| **Sex**                  |                   |                             |
| Men                      | 12,673 (49.7%)    | 49.6%                       |
| Women                    | 12,809 (50.3%)    | 50.4%                       |
| **Residential region**   |                   |                             |
| Hokkaido, Tohoku         | 2788 (10.9%)      | 11.1%                       |
| Kanto                    | 9007 (35.4%)      | 34.7%                       |
| Chubu                    | 4238 (16.6%)      | 16.7%                       |
| Kinki                    | 4521 (17.7%)      | 17.8%                       |
| Chugoku, Shikoku         | 2140 (8.4%)       | 8.6%                        |
| Kyushu                   | 2788 (10.9%)      | 11.0%                       |
| **Educational attainment**|                 |                             |
| College graduate or more | 12,172 (47.8%)    | 17.3%                       |
| Some college             | 5,387 (21.1%)     | 12.9%                       |
| High school or less      | 7,861 (30.8%)     | 56.8%                       |
| Other                    | 62 (0.2%)         | 13.1%                       |
| **Household income (thousand JPY)** |         |                             |
| ≥6,000                   | 7,700 (30.2%)     | 34.2%                       |
| 3,000–5,999              | 7,810 (30.6%)     | 32.4%                       |
| 0–2,999                  | 4,698 (18.4%)     | 33.3%                       |
| Do not want to answer    | 2,560 (10.0%)     | -                           |
| Do not know              | 2,714 (10.7%)     | -                           |
| **Employment status**    |                   |                             |
| Employed/self-employed   | 15,454 (60.6%)    | 63.3%                       |
| Unemployed               | 10,028 (39.4%)    | 36.7%                       |

<sup>a</sup> Source: Population estimate 2016 for age, sex, and residential region; National census 2010 for educational attainment; and Comprehensive Survey of Living Conditions of People on Health and Welfare 2016 for household income and employment status.