

Precarious employment and the risk of serious psychological distress: a population-based cohort study in Japan ¹

by Yuko Kachi,² Toshiaki Otsuka, Tomoyuki Kawada

¹ Appendix. Supplementary tables A, B, and C

² Correspondence to: Yuko Kachi, Department of Hygiene and Public Health, Nippon Medical School, 1-1-5 Sendagi, Bunkyo-ku, Tokyo, 113-8602, Japan. [E-mail: kachi@nms.ac.jp]

Table A. Hazard ratios (HR) and 95% confidence intervals (95% CI) for the incidence of serious psychological distress during the 4-year follow-up period, according to the four types of employment contract (N=15 222).

| Employment contract | Cases / non-cases (N) | Crude model | | Age-adjusted model | | Fully adjusted model ^a | |
|-------------------------|-----------------------------|-------------|------------------------|--------------------|------------------------|-----------------------------------|------------------------|
| | | HR | 95% CI | HR | 95% CI | HR | 95% CI |
| Men (N=8486) | | | | | | | |
| Full-time permanent | 318/7770 | 1.00 | | 1.00 | | 1.00 | |
| Part-time | 23/263 | 2.28 | 1.48–3.50 ^b | 2.41 | 1.58–3.69 ^b | 1.70 | 1.05–2.76 ^b |
| Dispatched ^c | 3/57 | 1.35 | 0.43–4.26 | 1.36 | 0.44–4.23 | 1.01 | 0.30–2.96 |
| Contract or entrusted | 30/396 | 1.92 | 1.31–2.80 ^b | 2.05 | 1.41–2.98 ^b | 2.03 | 1.35–3.06 ^b |
| Women (N=6736) | | | | | | | |
| Full-time permanent | 144/2664 | 1.00 | | 1.00 | | 1.00 | |
| Part-time | 193/3581 | 1.00 | 0.80–1.24 | 1.01 | 0.81–1.25 | 1.01 | 0.74–1.38 |
| Dispatched ^c | 3/50 | 1.08 | 0.34–3.41 | 1.09 | 0.35–3.43 | 0.82 | 0.25–2.70 |
| Contract or entrusted | 24/441 | 1.01 | 0.65–1.56 | 1.00 | 0.65–1.55 | 0.85 | 0.54–1.34 |

^a Adjusted for age, marital status, equivalized household expenditure, hours of work, occupation, company size, organizational tenure, cardiovascular disease risk, and K6 scores (all covariates measured at baseline). K6 is a self-rated 6-item scale that screens for any mood or anxiety disorder.

^b P<0.05.

^c Dispatched employee from temporary labor agency.

Table B. Hazard ratios (HR) and 95% confidence intervals (95% CI) for the incidence of serious psychological distress during the 4-year follow-up period according to employment contract, stratified by marital status, among participants without missing data on marital status (N=15190).

| Marital status, employment contract | Cases / non-cases (N) | Crude model | | Age-adjusted model | | Fully adjusted model ^a | |
|-------------------------------------|-----------------------|-------------|------------------------|--------------------|------------------------|-----------------------------------|-------------------------|
| | | HR | 95% CI | HR | 95% CI | HR | 95% CI |
| Men (N=8471) | | | | | | | |
| Married | | | | | | | |
| Full-time permanent | 283/6785 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 41/532 | 1.86 | 1.34–2.59 ^b | 1.98 | 1.43–2.75 ^b | 1.68 | 1.14–2.46 ^b |
| Never married | | | | | | | |
| Full-time permanent | 21/355 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 8/69 | 2.03 | 0.89–4.63 | 2.10 | 0.93–4.76 | 3.38 | 1.06–10.75 ^b |
| Divorced/widowed | | | | | | | |
| Full-time permanent | 14/299 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 7/57 | 2.54 | 1.01–6.37 ^b | 2.67 | 1.07–6.65 ^b | 2.76 | 0.82–9.30 |
| Women (N=6719) | | | | | | | |
| Married | | | | | | | |
| Full-time permanent | 97/1919 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 181/3350 | 1.07 | 0.83–1.37 | 1.08 | 0.84–1.38 | 0.88 | 0.62–1.24 |
| Never married | | | | | | | |
| Full-time permanent | 12/171 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 15/81 | 2.45 | 1.13–5.31 ^b | 2.40 | 1.13–5.10 ^b | 6.27 | 1.80–21.76 ^b |
| Divorced/widowed | | | | | | | |
| Full-time permanent | 33/424 | 1.00 | | 1.00 | | 1.00 | |
| Precarious | 24/412 | 0.76 | 0.45–1.30 | 0.78 | 0.46–1.32 | 0.81 | 0.41–1.58 |

^a Adjusted for age, marital status, equivalized household expenditure, hours of work, occupation, company size, organizational tenure, cardiovascular disease risk, and K6 scores (all covariates measured at baseline). K6 is a self-rated 6-item scale that screens for any mood or anxiety disorder.

^b P<0.05.

Supplementary Table C. Comparison of baseline characteristics between participants with and without follow-up by gender.

| Characteristics | Men | | | | P-value ^a | Women | | | | P-value ^a |
|--|----------------------|------------------|--------------------------|------------------|----------------------|----------------------|------------------|--------------------------|------------------|----------------------|
| | Followed (N=8486) | | Not followed (N=1471) | | | Followed (N=6736) | | Not followed (N=1064) | | |
| | % | % | % | % | | % | % | % | % | |
| Age (years) | 54.5 | 2.8 ^b | 54.5 | 2.7 ^b | 0.582 | 54.3 | 2.7 ^b | 54.4 | 2.7 ^b | 0.040 |
| Marital status | | | | | | | | | | |
| Married | 90.0 | | 88.3 | | 0.083 | 82.4 | | 74.9 | | <0.001 |
| Never married | 5.3 | | 6.4 | | | 4.1 | | 5.4 | | |
| Divorced/widowed | 4.4 | | 4.9 | | | 13.3 | | 18.9 | | |
| Data missing | 0.2 | | 0.4 | | | 0.3 | | 0.9 | | |
| Equalized household expenditure ^c | | | | | | | | | | |
| Quartile 1 (lowet) | 24.0 | | 22.6 | | <0.001 | 32.4 | | 32.7 | | <0.001 |
| Quartile 2 | 18.4 | | 17.1 | | | 18.3 | | 16.1 | | |
| Quartile 3 | 15.9 | | 14.8 | | | 14.9 | | 11.0 | | |
| Quartile 4 (highest) | 31.6 | | 26.7 | | | 24.1 | | 20.3 | | |
| Data missing | 10.1 | | 18.8 | | | 10.4 | | 19.9 | | |
| Employment contract | | | | | | | | | | |
| Full-time permanent | 91.6 | | 88.6 | | <0.001 | 39.6 | | 36.2 | | 0.037 |
| Precarious | 8.4 | | 11.4 | | | 60.5 | | 63.8 | | |
| Cardiovascular disease risks | | | | | | | | | | |
| None | 69.2 | | 70.1 | | 0.482 | 76.7 | | 76.3 | | 0.804 |
| Any | 30.8 | | 29.9 | | | 23.3 | | 23.7 | | |

^a Obtained from Wilcoxon's rank-sum test for age and from chi-square test for other variables.^b Values are presented in mean (SD).^c Monthly household expenditure divided by square root of the number of household members.