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Article (Accepted version)  
(Refereed)

**Original citation:**

van den Broek, Thijs (2017) *Gender differences in the correlates of loneliness among Japanese persons aged 50-70*. [Australasian Journal on Ageing](#). ISSN 1440-6381

DOI: [10.1111/ajag.12448](https://doi.org/10.1111/ajag.12448)

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Available in LSE Research Online: July 2017

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# Gender differences in the correlates of loneliness among Japanese persons aged 50-70

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## **AUTHOR VERSION**

Original version published as: Van den Broek, T. (2017). Gender differences in the correlates of loneliness among Japanese persons aged 50-70. *Australasian Journal on Ageing*. Published online before print. <http://doi.org/10.1111/ajag.12448>

## **Abstract**

*Objective:* This study aimed to explore gender differences in the correlates of loneliness among Japanese persons aged 50-70.

*Method:* Logistic regression models were estimated on cross-sectional Japanese Generations and Gender Survey data of 4,057 persons aged 50-70. Loneliness was measured as having a score of 2 or higher on the shortened De Jong Gierveld loneliness scale.

*Results:* For more than half of the respondents, De Jong Gierveld loneliness scores exceeded the threshold of 2. Loneliness was more prevalent among men than among women. Living without a spouse or partner was more strongly associated with loneliness for men than for women. Childlessness was more strongly associated with loneliness for women than for men.

*Conclusions:* A large proportion of Japanese people between 50 and 70, particularly men, are lonely. Programs aimed at reducing loneliness should acknowledge that antecedents of loneliness differ between women and men.

## Introduction

With more than a quarter of its inhabitants being aged 65 or older [1], Japan is a so-called super-ageing society. Population ageing is not restricted to rural areas, but also taking place in urban areas [2]. Given the large and rapidly growing share of older persons among its population, a key challenge facing Japan is to keep older Japanese healthy and independent [3]. This makes loneliness a relevant issue, as it is a known risk factor for physical and mental illness in later life [4].

Antecedents of loneliness, i.e. the unpleasant experience of a discrepancy between one's actual and one's desired personal network of relationships [5], vary across countries [6,7]. The aim of this brief report was to shed light on the correlates of loneliness among persons aged 50-70 in the particular context of Japan, and specifically on differences between men and women.

Kikuzawa has argued that Japanese older persons tend to mainly be involved in roles related to work and family [8]. Compared to Americans, they are less focused on the community. The extent to which is the case may, however, very well differ between men and women. Although substantial shares of the Japanese population nowadays hold relatively gender-egalitarian views [9], Japan remains a highly gender-asymmetric country, particularly with regard to economic participation and opportunity [10]. Oshio argued that Japanese men may therefore be more likely than women to restrict their roles to those related to work and family [11].

Consistent with Oshio's reasoning, Kikuzawa's study showed that men considered themselves someone's friend less often than did women [8]. Antonucci and colleagues did not find differences between older Japanese men and women with regard to the size of their social networks, but within these social networks, women had more people who they felt close to than did men. This gender difference was not found in the other countries included in their study: the United States, Germany and France [12]. Oshio suggested that Japanese men's restricted social networks might make their wellbeing more sensitive than women's to their family situation [11].

Japanese men's presumed greater sensitivity to their family situation may explain why family related factors, most notably the presence of a spouse or partner, have been found to be more strongly linked to life satisfaction [11], emotional wellbeing [13] and depression [14,15] for men than for women. The current study explored whether similar gender differences exist in the correlates of loneliness among Japanese persons aged 50-70.

## **Methods**

### ***Study sample***

This report draws on cross-sectional data from the first wave of the Japanese version of the Generations and Gender Survey (GGS) (for more information, see [www.ggp-i.org](http://www.ggp-i.org)). The Japanese GGS is a mail survey about family and daily life conditions funded by the Japanese Ministry of Health, Labour and Welfare. Although multiple waves of data were collected, only Wave 1 data are currently publicly available. Wave 1 data were collected in 2005 among a national two-stage stratified probability sample of Japanese men and women aged 18-70. The response rate was 60 percent ( $n = 9,074$ ). The analyses presented here were restricted to respondents who were between 50 and 70 years old at the time of data collection ( $n = 4,272$ ). List-wise deletion of respondents with missing values on any variables of interest resulted in a final sample of  $n = 4,057$ . Given that the current study is a secondary analysis of anonymized public release data, no ethical approval was required.

### ***Measures***

Loneliness was measured using the shortened version of the De Jong Gierveld loneliness scale [16], which produces scores ranging from 0 (not lonely) to 6 (intensely lonely). As has been done in earlier studies [17,18], the loneliness scores, which were not normally distributed, were dichotomized. Respondents with a score of 2 or higher were coded as being lonely.

Several known socio-demographic predictors of late-life loneliness in contexts other than Japan [6,7,17,18,19,20] were included in the model. Four age categories were distinguished: 50-54,

55-59, 60-64, and 65-70. A range of dichotomous variables captured whether or not the respondent was living with a spouse or partner; was childless; had a coresident child; listed "employed or self-employed" as main activity status, rather than one of the alternative statuses, e.g. "retired". The respondent's number of siblings was centered, so that a value of 0 corresponded with having two siblings. Three levels of educational attainment were distinguished: (1) low (no more than high school); (2) intermediate (vocational or junior college) and (3) high (at least 4 year college). A categorical variable was included to distinguish respondents who rated their health as (1) "very good", (2) "good", and (3) "less than good". With regard to the level of urbanization of the respondent's place of residence, (1) major cities (Tokyo, Yokohama, Kawasaki, Kyoto, Chiba, Osaka and Kitakyushu), (2) other cities and (3) rural areas were distinguished.

### ***Statistical analysis***

Logistic regression was used to estimate loneliness. In addition to a pooled model, separate models for men and women were estimated. To assess whether coefficient estimates differed between men and women, an additional pooled model was estimated that through the inclusion of a range of interaction terms allowed the slopes of all independent variables to vary as a function of gender. Weighting was applied to adjust for selective non-response.

## **Results**

Descriptive statistics are presented in Table 1. For more than half of the respondents, De Jong Gierveld loneliness scores exceeded the threshold of 2. The prevalence of loneliness was markedly higher among men than among women. A chi-squared test indicated that this difference was statistically significant ( $\chi^2(1) = 54.9, p < .001$ ).

<TABLE 1 HERE>

Table 2 provides an overview of the results of the multivariate analyses. The pooled regression model indicated that women were less likely to be lonely than men, even when a broad range of

socio-demographic characteristics were controlled for. Furthermore, living with a spouse or partner and being 60-64 years old, as opposed to 50-54, were associated with a lower risk of loneliness. Childless persons were more likely than parents to be lonely. Persons who rated their health as “good” or “less than good” were more likely to be lonely than their counterparts who rated their health as “very good”. The difference between “less than good” and “good”, but not “very good”, health was statistically significant as well ( $\Delta b$ : 0.39,  $p < .05$ ). Loneliness was less likely for the highly educated than for those with low educational attainment. Persons living in non-major cities were more likely to be lonely than their counterparts living in rural areas. None of the other characteristics included in the pooled model were significantly associated with the odds of being lonely.

<TABLE 2 HERE>

In the women-only model, no effect of living with a spouse or partner was found. The model indicated that childless women were more likely than mothers to be lonely. Women aged 60-64 years old were less likely to be lonely than women aged 50-54. Women with “good” or “less than good” self-rated health were more likely to be lonely than women with “very good” self-rated health. Loneliness was less likely for women with intermediate levels of educational attainment than for lower-educated women. None of the other characteristics included in the model were significantly associated with the odds of being lonely for women.

For men, living with a spouse or partner was associated with a substantially lower risk of loneliness. No effect of childlessness was found. Men with “less than good” or “good” self-rated health were more likely to be lonely than were their counterparts with “very good” self-rated health. The difference between “less than good” and “good”, but not “very good”, self-rated health was significant as well ( $\Delta b$ : 0.67,  $p < .01$ ). Higher educated men were less likely than lower educated men to be lonely. Furthermore, loneliness was more likely for men living in non-major cities than for men living in rural areas. None of the other characteristics included in the model were significantly associated with the odds of being lonely for men.

The differences between coefficient estimates for women and those for men and the standard errors of these differences are presented in the final two columns of Table 2. Living with a spouse or partner was significantly more protective against loneliness for men than for women. Childlessness was, in turn, more strongly linked to loneliness for women than for men. Furthermore, the increased loneliness risk associated with living in non-major cities as opposed to rural areas was stronger for men than for women. None of the other coefficient estimates differed significantly between men and women.

## **Discussion**

The current study showed that a large proportion of Japanese people between 50 and 70 are lonely, operationalized as having a score of 2 or higher on the shortened De Jong Gierveld loneliness scale. Studies using a similar measure of loneliness showed considerably lower rates among persons in the 50-64 and 65-80 age ranges in Norway [17], but roughly comparable rates among non-institutionalized Spanish older persons [18]. The risk of loneliness was, overall, smaller for Japanese women aged 50-70 than for their male counterparts. This is somewhat remarkable, because studies conducted in other parts of the world typically found that loneliness was more prevalent among women than among men [19]. However, Prieto-Flores and colleagues also found that older women in Spain were less likely to be lonely than were older men [18].

Drawing on earlier research on the wellbeing of older Japanese persons, family factors were expected to be more strongly linked to loneliness for men than for women. Consistent with these expectations, the increased loneliness risk associated with the absence of a spouse or partner was stronger for men than for women. The link between childlessness and loneliness was, however, stronger for women than for men. This seems consistent with the finding of Arai and colleagues that depressed mood was less likely for Japanese older women, but not for men, if they had frequent contact with children and/or grandchildren [21]. The findings presented here thus provide only partial support for Oshio's suggestion that men's wellbeing is more

sensitive than women's to the family situation. Given its cross-sectional design, the current study does not allow any causality to be inferred.

## **Conclusion**

In the context of Japan, programs aimed at reducing loneliness need to acknowledge that loneliness is more prevalent among Japanese men aged 50-70 than among Japanese women in this age range, and that antecedents of loneliness vary by gender. Most notably, the absence of a spouse or partner is more strongly linked to loneliness for men than for women, whereas childlessness is more strongly linked to loneliness for women than for men.



## **Impact statement**

In Japan, loneliness is more prevalent among men aged 50-70 than among women in the same age range. The loneliness risk associated with not living with a partner is greater for Japanese men aged 50-70 than for their female counterparts. Childlessness is more strongly associated with loneliness for Japanese women aged 50-70 than for Japanese men in the same age range.

## References

1. Ministry of Internal Affairs and Communications. *Koureisha no Zinkou [Population of Older People]*. [Cited 26 October 2015.] Available from URL: <http://www.stat.go.jp/data/topics/topi901.htm> .
2. Muramatsu N, Akiyama H. Japan: Super-ageing society preparing for the future. *Gerontologist* 2011; 51: 425–432.
3. Hokama T, Cash HL. The challenges of ageing in Japan. In: Griffiths SM, Tang JL, Yeoh EK (eds). *Routledge handbook of global public health in Asia*. New York: Routledge, 2014; 62–67.
4. Ong AD, Uchino BN, Wethington E. Loneliness and health in older adults: A mini-review and synthesis. *Gerontology* 2016; 62: 443–449.
5. Peplau LA, Perlman D. Perspectives on loneliness. In: Peplau LA, Perlman D (eds). *Loneliness: A sourcebook of current theory, research and therapy*. New York: Wiley, 1982; 1–18.
6. Fokkema T, De Jong Gierveld J, Dykstra PA. Cross-national differences in older adult loneliness. *J Psychol* 2012; 146: 201–228.
7. Lykes VA, Kimmelmeier M. What predicts loneliness? Cultural difference between individualistic and collectivistic societies in Europe. *J Cross-Cult Psychol* 2014; 45: 468–490.
8. Kikuzawa S. Multiple roles and mental health in cross-cultural perspective: The elderly in the United States and Japan. *J Health Soc Behav* 2006; 47: 62–76,
9. Van den Broek T, Morita M. Moral beliefs about filial support, work and gender in Japan. A latent class analysis. In: Tsai MC, Chen WC (eds). *Family, work and well-being in Asia*. New York: Springer, 2017; 89–106.
10. World Economic Forum. *The Global Gender Gap Report 2015*. Geneva: World Economic Forum, 2015.
11. Oshio T. Gender differences in the associations of life satisfaction with family and social relations among the Japanese elderly. *J Cross Cult Gerontol* 2012; 27: 259–274.
12. Antonucci, TC, Lansford JE, Akiyama H, Smith J, Baltes MM, Takahashi K, Fuhrer R, Dartigues J-F. Differences between men and women in social relations, resource deficits and depressive symptomatology during later life in four nations. *J Soc Issues* 2002; 58: 767–783.

13. Raymo JM, Kikuzawa S, Liang J, Kobajashi E. Family structure and well-being at older ages in Japan. *J Popul Res* 2008;25: 379–400.
14. Kikuchi H, Takamiya T, Odagiri Y, Ohya Y, Nakaya T, Shimomitsu T, Inoue S. Gender differences in association between psychological distress and detailed living arrangements among Japanese older adults, aged 65–74 years. *Soc Psychiatry Psychiatr Epidemiol* 2014; 49: 823–830.
15. Tiedt AD, Saito Y, Crimmins EM. Depressive symptoms, transitions to widowhood, and informal support from adult children among older women and men in Japan. *Res Aging* 2016; 38: 619–642.
16. De Jong Gierveld J, Van Tilburg T. A 6-item scale for overall, emotional, and social loneliness. Confirmatory tests on survey data. *Res Aging* 2006; 28: 582–598.
17. Nicolaisen M, Thorsen K. Who are lonely? Loneliness in different age groups (18-81 years old), using two measures of loneliness. *Int J Aging Hum Dev* 2014; 78: 229–257.
18. Prieto-Flores ME, Forjaz MJ, Fernandez-Mayoralas G, Rojo-Perez F, Martinez-Martin P. Factors associated with loneliness of noninstitutionalized and institutionalized older adults. *J Aging Health* 2011; 23: 177–194.
19. Pinguart M, Sorensen S. Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology* 2001; 23: 245–266.
20. Steed L, Boldy D, Grenade L, Iredell, H. The demographics of loneliness among older people in Perth, Western Australia. *Australas J Ageing* 2007; 26: 81–86.
21. Arai A, Ishida K, Tomimori M, Katsumata Y, Grove JS, Tamashiro H. Association between lifestyle activity and depressed mood among home-dwelling older people: A community-based study in Japan. *Aging Ment. Health* 2007; 11: 547–555.

Table 1. *Descriptive statistics.*

Variable	Women	Men
	Percentage / mean	Percentage / mean
Lonely	51.7%	63.6%
Lives with spouse / partner	83.6%	90.8%
Childless	7.5%	10.0%
Shares household with child	58.1%	60.5%
Number of siblings † (Standard deviation)	2.8 (1.7)	2.7 (1.7)
Age:		
50-54	23.3%	23.4%
55-59	27.8%	26.1%
60-64	24.5%	23.8%
65-70	24.5%	26.6%
Self-rated health:		
Very good	26.5%	26.5%
Good	68.2%	67.5%
Less than good	5.3%	6.0%
Employed	54.1%	76.8%
Educational attainment:		
Low	72.2%	65.4%
Intermediate	22.6%	8.8%
High	5.2%	25.7%
Level of urbanization		
Rural area	21.5%	20.8%
Non-major city	64.0%	65.5%
Major city	14.5%	13.7%
Number of observations	2,051	2,006

*Notes:* Data are from the Japanese version of the Generations and Gender Surveys; weighted; † scores represent values before centering.

Table 2. Coefficient estimates of logistic regression models of loneliness.

Independent variable	Pooled			Women only			Men only			Women vs. men	
	b†	SE‡	Odds ratio	b†	SE‡	Odds ratio	b†	SE‡	Odds ratio	Δb†	SE‡
Female	-0.52***	0.07	0.59								
Lives with spouse / partner	-0.21*	0.11	0.81	-0.08	0.13	0.92	-0.64**	0.20	0.53	0.56*	0.24
Childless	0.35*	0.14	1.41	0.62**	0.20	1.86	0.01	0.21	1.01	0.61*	0.29
Shares household with child	-0.07	0.08	0.93	-0.16	0.10	0.85	0.04	0.11	1.04	-0.20	0.15
Number of siblings §	-0.03	0.02	0.97	-0.04	0.03	0.96	-0.02	0.03	0.98	-0.02	0.04
Age (ref.: 50-54)											
55-59	-0.03	0.10	0.97	-0.04	0.13	0.96	-0.03	0.14	0.97	-0.01	0.20
60-64	-0.22*	0.10	0.80	-0.38**	0.14	0.68	-0.07	0.15	0.94	-0.32	0.21
65-70	0.05	0.11	1.05	-0.07	0.15	0.93	0.19	0.17	1.20	-0.25	0.22
Self-rated health (ref.: very good)											
Good	0.50***	0.08	1.65	0.51***	0.11	1.67	0.49***	0.11	1.64	0.02	0.15
Less than good	0.89***	0.17	2.44	0.67***	0.23	1.96	1.16***	0.26	3.19	-0.49	0.35
Employed	0.03	0.08	1.03	0.01	0.10	1.01	0.08	0.13	1.08	-0.06	0.17
Education (ref.: low)											
Intermediate	-0.18	0.10	0.84	-0.24*	0.12	0.78	-0.04	0.18	0.96	-0.20	0.21
High	-0.24*	0.10	0.79	0.10	0.21	1.10	-0.30*	0.12	0.74	0.39	0.25
Level of urbanization (ref.: rural)											
Non-major city	0.17*	0.08	1.19	0.01	0.11	1.01	0.35**	0.12	1.42	-0.35*	0.12
Major city	0.21	0.12	1.23	0.10	0.17	1.10	0.32	0.18	1.38	0.22	0.24
Constant	0.37	0.19	1.44	-0.02	0.24	0.98	0.47	0.29	1.60	-0.50	0.38
Akaike Information Criterion	5,391.6			2,803.0			2,588.9				
Bayesian Information Criterion	5,492.5			2,887.4			2,673.0				
Number of observations	4,057			2,051			2,006				

Notes: Data are from the Japanese version of the Generations and Gender Surveys; weighted; † coefficient estimate; ‡ standard error; § centered on the value of 2;

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$