Family Social Capital and Feelings of Loneliness among Older Adults in Four East Asian Societies

Significance

Along with rapid aging in East Asia, the demographic transition significantly impacts the family and social relationships of older people in this region. This impact may contribute to the epidemic and severity of mental health problems in general and feelings of loneliness in particular (Cacioppo & Cacioppo, 2018; Pitman et al., 2018). Loneliness is different from diagnostic psychiatric diseases (e.g., dementia and depression); this is characterized by a condition in which an individual experiences emotional distress due to a feeling when a social partner is absent owing to scheduled activities and/or even being excluded or isolated from other persons (McWhirter, 1990; Perlman & Peplau, 1981).

A wealth of epidemiological evidence shows increased loneliness, particularly after COVID-19 in older adults. To mitigate their loneliness, it has been recognized that preserving family and social connections in the family and the community, namely family social capital (Arregle et al., 2007), serves as the theoretical foundation. Families and communities are endowed with rich stocks of family social capital, stronger cohesions between family members, and norms of mutual support. To our search, however, no previous study has shown whether family social capital mitigates feelings of loneliness in older people. Family social capital can include two parts: structural and cognitive components. The structural component refers to what family members actually do, such as living arrangements; the cognitive component captures how these members perceive family relations in their family such as caregiving.

As defined by Drentea (2007), caregiving is *the act of providing unpaid assistance and support to family members or acquaintances who have physical, psychological, or developmental needs*. The possible accumulation or reduction of feelings of loneliness generated by caregiving, if any, may be a function of the amount of time spent giving care, as well as being related to the caregiver's socio-demographics and a one- or two-direction interactions with the care receiver (Ruppanner & Bostean, 2014; Vitaliano et al., 2014). To be specific, providing care for other family members may disrupt one's personal life and create additional worries (Hiel et al., 2015; van Wijngaarden et al., 2004); on the other hand, this may increase the bonding between providers and family members, which can result in a lower level of loneliness (Ekwall et al., 2005). It should be noted that family care may be reciprocal, and the relationship between family care and loneliness seemed to differ across who was cared for and the various demographic backgrounds of caregivers (Akhter-Khan et al., 2022).

Accordingly, the present study sought to bridge the knowledge gaps related to the understudied hypothesis of family social capital, measured by living arrangements, marital status, and caregiving-receiving, and its association with loneliness among older adults in various East Asian societies. Moreover, a particular cohort's life has been shaped by the social and economic changes they had experienced; a particular attention has been paid to pre-boomers born in 1936-1945 and Baby boomers born in 1946-1964 (Hermalin, 1995). Suppose a distinct cohort life contributes to the development of loneliness. In that case, this, in turn, is likely to be caused by an intermediate matrix that includes family social capital and social disconnectedness.

Methods

A search for global aging data was carried out. To achieve research objectives, our analysis consists of the

Taiwan Longitudinal the China Health and Retirement Longitudinal Study (CHARLS, 2015), the Japanese Study of Aging and Retirement (JSTAR, 2013), the Korean Longitudinal Study of Aging (KLoSA, 2016), and the Taiwan Longitudinal Survey on Aging (TLSA, 2015). The study protocol of this proposal for using these databases is reviewed for approval by their appropriate institutional review boards and the Research Ethics Committee of National Yang-Ming Chiao Tung University (IRB: NYCU112015AE).

Measures

Due to space constraints, only the dependent and major independent variables are described.

DEPENDENT MEASURES. *Loneliness* is considered a subjective measure of isolation (Holt-Lunstad *et al*., 2015). This single measure of loneliness item and prior research suggests its cut-off point (Mund et al., 2022) used in CHARLES (2015), KLoSA (2016), JSTAR (2013), and TLSA (2015).

MAJOR EXPLANATORY MEASURE. *Family social capital* includes the measures of living arrangement, marital status, and caregiving-receiving (Lim & Kua, 2011; Hajek et al., 2021). Living arrangement is an objective isolation measurement (Holt-Lunstad et al., 2015), using a self-reported question: "Who do you live with currently?" We divided responses into two groups: living alone (omitted) and living with others, including a partner, other families, and/or friends. Marital status was assessed by asking, "What is your current marital status?" *Caregiving-receiving to-from families* was defined by whether the respondents provided personal care to or received care from family members.

Analytical Strategy

Analysis began with bivariate tabulations that characterized the distribution of individual characteristics for each society. Then, we used multivariate logistic modeling techniques to study the simultaneous associations between family social capital and risks of loneliness, adjusting for individual and household backgrounds. All analyses were carried out separately for Taiwan, China, South Korea, and Japan by birth cohort and used Stata version 17.0.

Preliminary Results

Table 1 presents the adjusted ORs and 95 percent confidence intervals of the factors for loneliness risk when individual backgrounds are included for the selected four societies. Family social capital (living with others and being in a union) showed a significant negative association with loneliness among pre-baby Boomers and Baby Boomers in Taiwan and China. In South Korea, older adults living with others and in a union were more likely to report feelings of loneliness than their counterparts. Care-receiving mainly was associated with an increased risk of loneliness in Japan (aOR=2.70, $p<0.01$), South Korea (aOR=1.95, $p<0.01$), Taiwan (aOR=1.92, $p<0.01$), and China (aOR=1.57, $p<0.01$). However, the effects of caregiving are not consistent across the four societies. While it shows its protection from loneliness in China (aOR=0.67, $p<0.01$), it increased the risk of loneliness in South Korea (aOR=1.93, $p<0.01$), and no statistically significant relationship was found in older adults in Taiwan and Japan.

Preliminary results suggest that family social capital, particularly structural components, namely living arrangements, is significantly related to feelings of loneliness. These preliminary findings warrant further investigation and models incorporating cohort-specific and gender-sensitive variables.

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Table **1**. Logistic regression models of living arrangement, caregiving, and related measures on the likelihood (aOR) of the feeling of loneliness among pre-Baby Boomers and Baby Boomers in four East Asian societies, TLSA (2015), CHARLS (2015), KLoSA (2016), and JSTAR (2013)

	aOR											
	TLSA (2015)			**CHARLS** (2015)			**KLoSA** (2016)			**JSTAR** (2013)		
	Total	Pre-baby Boomers	Baby Boomers	Total	Pre-baby Boomers	Baby Boomers	Total	Pre-baby Boomers	Baby Boomers	Total	Pre-baby Boomers	Baby Boomers
N	4,835[a]	1,095[b]	3,737[c]	15,292	3,069	12,223	6,973	2,527	4,446	3,699[d]	1,794[e]	1,893[f]
Major explanatory variables												
Living arrangement (ref = Living with others)												
Living alone	1.81**	1.83*	1.80**	1.87**	1.61**	2.02**	1.48**	1.41§	1.57§	1.03	1.10	0.97
Missing	5.22			0.96	0.98	0.93						
Caregiving-receiving to-from families (ref = Lack of contact)												
Caregiving mainly	0.81	1.31	0.74	0.67**	0.86	0.64*	1.93**	2.10**	1.70*	0.80	1.30	0.62
Care-receiving mainly	1.92**	1.79*	2.27**	1.57**	1.52**	1.63**	1.95**	1.90**	2.01**	2.67**	2.50*	4.79**
Reciprocal caring relationship	1.20	1.60	0.90	1.27*	1.33	1.22§	0.55	0.91		3.18§	10.71**	
Missing	1.00			0.61**	0.57**	0.64**	1.65**	2.16**	1.57**	0.82	1.15	0.66
Marital status (ref = Not currently married/cohabitated)												
Currently married/cohabitated	0.31**	0.19**	0.36**	0.48**	0.51**	0.46**	0.57**	0.53**	0.63*	0.55**	0.76	0.42**
Participation in club (z-score)	0.83*	0.85	0.81*	0.91**	0.93	0.91**	0.73**	0.79**	0.67**	0.94	0.95	0.95
Work status (ref = Currently working)												
Retired	1.67**	2.92*	1.37	0.59**	0.51**	0.62**	1.63**	2.40**	1.39§	1.54§	1.71	1.52
Not employed	1.97**	3.23*	1.81**	0.95	0.84	1.01	2.10**	2.98**	1.96**	1.49*	1.88	1.30
Missing				1.19*	1.11	1.21§				0.38		
Perceived self-rated health (ref = Not good)												
Good	0.30**	0.39**	0.25**	0.49**	0.51**	0.49**	0.34**	0.27**	0.45**	0.48**	0.54*	0.43**
Missing				5.08*	1.41	15.45*						
Individual characteristics												
Male (ref = Female)	1.23	1.60§	1.14	0.75**	0.80*	0.72**	1.55**	1.57**	1.59**	0.93	1.12	0.80
Baby Boomers (ref = pre-Baby Boomers)	0.66			1.08			0.99			1.10		

Note: aOR represents the adjusted odds ratio. All models adjusted for age and education attainment. § $p<0.1$; * $p<0.05$; ** $p<0.01$; [a] Excluded sample with missing variable: giving care (n=1), education attainment (n=1); [b] Excluded samples with missing variables on caregiving (n=1) and living arrangement (n=1); [c] Excluded samples with missing variables on caregiving (n=1) and living arrangement (n=2); [d] Excluded samples with missing responses on work (n=16) self-rated health (n=1); [e] Excluded samples with missing variables on work (n=3); [f] Excluded samples with missing variables on work (n=13), network(n=7), self-rated health (n=1) and education attainment (n=5).