



# Paradoxical effects of community social cohesion on mental health and help-seeking among older adults: The role of reputation concern and socioeconomic status

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## ABSTRACT

There is no consensus on whether community social cohesion has positive or negative impacts on mental health. In this study, we hypothesized that strong social norms in highly cohesive communities might increase concerns about reputation, which could negatively affect mental health and help-seeking. We analyzed data from 23,672 adults aged 65 years or older from the 2019 wave of the Japan Gerontological Evaluation Study (JAGES). Cross-sectional multilevel analyses revealed that individual-level social cohesion—measured by community trust, reciprocity, and place attachment—predicted fewer depressive symptoms and lower reluctance to seek help. However, at the community level, social cohesion predicted higher concerns about reputation, which in turn predicted more depressive symptoms. Notably, this association was stronger among individuals with lower educational attainment, suggesting that they may experience greater reputational pressure within highly cohesive communities. These findings support our hypothesis that community social cohesion may be linked to negative outcomes due to reputational concern and highlight the paradoxical nature of social cohesion.

Social cohesion refers to the connectedness and solidarity within groups of people in a community (Coleman, 1988; Kawachi and Berkman, 2014). Although researchers may use different terms to refer to this concept, such as social capital (Moore and Kawachi, 2017; Putnam, 2000) or social identity (Haslam et al., 2009, 2022), we use the term “social cohesion” to represent the subjective sense of connectedness within a community, operationalized as community trust, reciprocity, and place attachment (Saito et al., 2017; Takeda et al., 2024). Social cohesion can be understood as either an individual-level or community-level construct. For instance, an individual may feel a strong sense of belonging and trust in their neighbors (i.e., individual-level social cohesion) or live in a neighborhood where people generally support and cooperate with one another (i.e., community-level social cohesion). While the benefits of individual-level social cohesion on

mental health are consistently observed (e.g., Laurence and Kim, 2021; Robinette et al., 2021), the role of community-level cohesion on mental health is less clear (De Silva et al., 2005; Ehsan et al., 2019).

Some studies have shown positive effects of community social cohesion on mental health, while others have reported null or even negative effects (for reviews, see De Silva et al., 2005, 2007; Ehsan and De Silva, 2015; Ehsan et al., 2019; Nyqvist et al., 2013). In studies using multilevel modeling that consider both individual- and community-level effects, some found that community social cohesion has no impact on mental health when individual-level effects are accounted for (Laurence and Kim, 2021; Sato et al., 2022; Subramanian et al., 2002; Takeda et al., 2024; Yamaguchi et al., 2019). These mixed findings suggest that community-level social cohesion may have both upsides and downsides and highlights the need to consider social cohesion as a multilevel

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construct.

The potential paradoxical effects of community social cohesion have been repeatedly noted by researchers (Kawachi, 2010; Kawachi and Berkman, 2014; Portes, 1998; Villalonga-Olives and Kawachi, 2017), but few studies have directly examined the underlying mechanisms. Particularly, stringent social norms and the risk of ostracism in highly cohesive communities may negatively impact help-seeking behaviors and health outcomes (Kawachi, 2010). In such environments, individuals may become more concerned about their reputation within the community than seeking resources and treatment for mental health issues. When individuals perceive a group as highly cohesive with shared goals, they are more likely to be concerned about maintaining a positive reputation (Cavazza et al., 2014). These interpersonal concerns may make individuals more hesitant to seek help (Foster et al., 2021) and consistently worrying about others' opinions and approval may contribute to poorer mental health (Crocker and Wolfe, 2001).

It is important to note that social cohesion may have divergent impacts on reputation concern at different levels. At the individual level, people with greater community trust, reciprocity, and place attachment are more integrated into their communities and may experience fewer negative aspects of interpersonal relationships, such as anxiety about what others think of them (Gretarsdottir et al., 2004; Sun et al., 2024). However, when controlling for these individual differences in social cohesion, living in a community where most people exhibit high social cohesion may lead individuals to feel greater social pressure to care more about others' opinions (i.e., a contextual effect; see also Buttrick and Oishi, 2021; Yamagishi and Yamagishi, 1994). Conversely, in communities with low social cohesion, there may be less need to worry about negative perceptions from others, as most people are less tied to the local community. We believe that the divergent impacts of social cohesion at different levels may help explain their differing implications for mental health and help-seeking.

An important factor in examining the effects of community social cohesion is socioeconomic status (SES), which has not been adequately addressed in the literature (De Silva et al., 2005). Individuals with higher SES tend to have larger, more diverse social networks, often extending beyond their local communities, while those with lower SES have more restricted networks focused on local communities (Ajrouch et al., 2005; Campbell et al., 1986; Carey and Markus, 2017). Lower-SES individuals also tend to socialize and receive support primarily from family and neighbors, whereas higher-SES individuals interact more with friends (Bianchi and Vohs, 2016; Hooker et al., 2025). These social constraints lead lower-SES individuals to feel less control over their interpersonal relationships and perceive fewer exit options (Lachman and Weaver, 1998; Kraus et al., 2009; Huang, 2025). These social constraints may increase concerns about one's reputation among others in closely-knit communities. Indeed, there is some evidence showing that high-SES individuals received greater benefits from group participation in local communities (Ashida et al., 2016). The constrained structure of low-SES networks may increase the reputation pressure associated with community social cohesion.

The current study examined the associations between social cohesion, concern for reputation, psychological reluctance to seek help, and mental health at both individual and community levels. Using data from a population-based cross-sectional survey of older adults in Japan, we employed multilevel modeling to distinguish between individual-level and community-level effects. We focused on older adults as social cohesion in local communities is considered an important factor for their mental health (Cramm et al., 2013; Kim et al., 2020). Understanding how social cohesion at different levels relates to mental health would have important implications for promoting mental health among older adults. For the index of mental health, we focused on depressive symptoms because they are the primary focus of most previous research on the link between community social cohesion and mental health (De Silva et al., 2005; Ehsan et al., 2019). Also, depressive symptoms among older adults can have substantial health consequences, and many older

adults do not seek help when they feel stressed (Fiske et al., 2009). Therefore, it is important to identify potential community factors that may contribute to depression and reluctance to seek help among older adults.

In this study, we hypothesize that (1) community social cohesion is associated with increased concern for reputation within the community; (2) concern for reputation is associated with both depressive symptoms and reluctance to seek help; and (3) the association between community social cohesion and reputation concern is stronger among individuals from low SES groups than among those from higher SES groups. Notably, the role of reputation pressure in cohesive societies may be particularly relevant in the Japanese context. Japanese communities have traditionally been characterized by strong social norms, mutual monitoring, and sanction systems (Yamagishi and Yamagishi, 1994). This legacy has made people in Japan more concerned about negative reputation and more sensitive to social rejection compared to other countries (Hashimoto and Yamagishi, 2013; Huang et al., 2025). As a result, highly cohesive societies in Japan may experience unique reputation pressure due to the emphasis on collective sanctions and responsibilities (Murayama et al., 2015; Takasugi et al., 2021).

## 1. Methods

### 1.1. Data

We analyzed data from the 2019 wave of the Japan Gerontological Evaluation Study (JAGES) collected from November 2019 to December 2020 (Kondo, 2016). JAGES is a population-based survey of Japanese adults aged 65 or older who are not certified as requiring assistance from public long-term care insurance. The survey was distributed to 376,649 participants from 64 randomly selected municipalities in Japan, with 260,310 individuals completing the survey (response rate = 69.1 %). Among the respondents who completed the survey, 62,859 individuals were excluded from the dataset, including those certified as requiring long-term care assistance ( $n = 12,410$ ), those who did not provide informed consent ( $n = 42,543$ ), participants from municipalities without research use agreements ( $n = 7,789$ ), and those whose age ( $n = 69$ ) and gender ( $n = 48$ ) could not be identified. Detailed information about JAGES is available at <https://www.jages.net/>.

In addition to the core survey items, the JAGES also included eight additional modules. Each module was randomly distributed to 12.5 % of participants. We analyzed data from 25,001 individuals in Module E, which includes items on reputation concern and help-seeking. We excluded participants who did not complete the survey on their own ( $n = 824$ ) and lacked information about their community ( $n = 505$ ). The final sample consisted of 23,672 individuals from 1,202 communities (i.e., school districts).

We used the school district as the community level for analysis. Previous studies using JAGES data also used school districts as the community level when studying community social cohesion (Saito et al., 2017; Sato et al., 2022). In Japan, school districts often coincide with former neighborhoods or villages that share productive, religious, and cultural activities, which can be considered an individual's immediate community (Aida et al., 2009). The school district is thus an appropriate unit of analysis for the research question regarding social cohesion and reputation concern.

The data supporting the findings of this paper are available upon application to the JAGES data management committee ([dataadmin.ml@jages.net](mailto:dataadmin.ml@jages.net)). Although our analyses were not formally preregistered on an open platform, we submitted a proposal documenting the analytical plan to the JAGES data management committee when requesting access to the data.

### 1.2. Measurement

**Social Cohesion.** We assessed social cohesion using three items

validated in previous research (Saito et al., 2017). These items included: “Do you think that people living in your community can be trusted in general?” (community trust; 1 = *Very untrustworthy*, 5 = *Very trustworthy*), “In general, do you think people in your community try to help each other?” (reciprocity; 1 = *Strongly disagree*; 5 = *Strongly agree*), and “How attached are you to the community you currently live in?” (place attachment; 1 = *Not at all attached*, 5 = *Strongly attached*). The scores were averaged and higher scores indicate greater social cohesion (Cronbach’s  $\alpha = .77$ ). Community social cohesion was calculated by averaging the social cohesion scores of individuals from a community.

**Reputation Concern.** We assessed reputation concern using the item: “I am concerned about how other people in my communities think of me.” (1 = *Disagree*, 2 = *Somewhat disagree*, 3 = *Somewhat agree*, 4 = *Agree*). This single-item measure of reputation concern was originally from a scale developed by Takata et al. (1996) and later modified and validated by Uchida et al. (2019). Higher scores indicate stronger concerns for reputation.

**Depressive Symptoms.** We assessed depressive symptoms using the 15-item Japanese version of the Geriatric Depression Scale (Wada et al., 2004). Participants rated whether they had ever experienced 15 items of depressive symptoms (1 = *Yes*, 0 = *No*). The scores were summed up and higher scores indicate greater depressive symptoms (Cronbach’s  $\alpha = .82$ ).

**Reluctance to Seek Help.** We assessed reluctance to seek help using the item: “Do you feel embarrassed to talk to someone or ask for help when you are worried or stressed?” rated on a four-point scale (1 = “Disagree,” 2 = “Somewhat disagree,” 3 = “Somewhat agree,” 4 = “Agree”). The item was used in previous studies as a measure of reluctance to seek help (Kanamori et al., 2024). It is important to note that people may seek different kinds of help from others. Our measure primarily captures reluctance to seek emotional support, which may be more closely linked to mental health. Higher scores indicate higher reluctance to seek support from someone when feeling worried or stressed.

**Socioeconomic Status.** We assessed socioeconomic status using educational attainment and equivalized household income. Educational attainment was categorized into three groups: “less than 9 years,” “10–12 years,” and “13 years or above.” Annual equivalized household income was calculated by dividing total household income by the square root of household size and was then categorized into low (<1,600,000 yen), middle (1,600,000–2,745,000 yen), and high income ( $\geq 2,745,000$  yen) groups.

**Covariates.** We adjusted for gender, age group (i.e., 65–69, 70–74, 75–79, 80–84, 85 or above), marital status (i.e., married/cohabiting, never married, widowed, divorced), and whether they were born in the community (i.e., locally born or non-locally born). Individuals with different genders, ages, and marital statuses differ in their concern about others’ views of themselves. Gender, age, and marital status also have substantial impacts on help-seeking and mental health among older adults (Kanamori et al., 2021; Fiske et al., 2009; Qiu et al., 2020). In addition, locally born residents and immigrants may differ in how they experience reputational pressure from their communities. We categorized participants as locally born or non-locally born based on the question: “How long have you been living where you currently live?” Those who have lived in the area since birth are categorized as “locally born resident,” while those who have moved to the area are categorized as “non-locally born resident.” We included these potential confounding variables as covariates in our analyses.

### 1.3. Statistical analysis

All analyses were conducted in R (Version 4.4.1; R Core Team, 2024). First, we conducted multilevel regressions with random intercepts using the *lavaan* package (Version 0.6–18; Rosseel, 2012) with individuals nested in communities. This approach allowed us to estimate community-level effects while partialing out individual-level effects (i.e., contextual effects). All coefficients were estimated simultaneously

using multilevel structural equation modeling (Preacher et al., 2010). Maximum likelihood estimation with robust standard errors was used. 95 % confidence intervals were used for statistical inference. Missing values in main research variables were imputed using two-level multiple imputation with 10 datasets, using the *mice* package (van Buuren and Groothuis-Oudshoorn, 2011), while missingness in covariates were directly modeled using dummy coding. Separate models were conducted for help-seeking and depressive symptoms. We adjusted for gender, age group, year of education, equivalized income, marital status, and whether they were born in the community in both models. All continuous variables were standardized at the individual level. As the Geriatric Depression Scale is often used as a dichotomous index, we also conducted a sensitivity analysis by dichotomizing the depression scores using a 5/6 cutoff (Schreiner et al., 2003) and predicting them using multilevel logistic regression modeling.

To examine the moderated effect of SES on the association between social cohesion and reputation concern, we used the *lme4* package (Version 1.1–35.5; Bates et al., 2015) to estimate random-intercept multilevel models, with individuals nested within communities. We first regressed reputation concern on social cohesion at both levels (Model 1). We then included an interaction between social cohesion and years of education (Model 2), or an interaction between social cohesion and equivalized income (Model 3). All continuous variables were standardized at the individual level.

Although cross-sectional data is not ideal for testing mediation effects, we report the results of multilevel mediation analyses in the [Supplementary Materials](#) for readers who may be interested in this approach. It is important to emphasize that these results do not imply causal relationships and must be interpreted with the greatest caution.

## 2. Results

A total of 23,672 individuals from 1,202 communities were included in the analysis. Table 1 shows the descriptive statistics of the study variables. Respondents generally reported moderate-to-high levels of social cohesion ( $M = 3.77$ ,  $SD = 0.64$ ) on a scale from 1 to 5. The average score of reputation concern was below the midpoint on a scale from 1 to 4 ( $M = 1.63$ ,  $SD = 0.74$ ). For the dependent variables, participants reported a mean score of 1.76 ( $SD = 0.87$ ) on a scale from 1 to 4 for help-seeking reluctance and an average of 3.02 ( $SD = 3.02$ ) out of 15 depressive symptoms.

Fig. 1 shows the multilevel model predicting reluctance to seek help. Social cohesion negatively predicted reputation concern at the individual level ( $Estimate = -.08$ , 95 % C.I. =  $[-.09, -.07]$ ) but positively predicted reputation concern at the community level ( $Estimate = .40$ , 95 % C.I. =  $[.06, .73]$ ). At the individual level, social cohesion negatively predicted help-seeking reluctance ( $Estimate = -.08$ , 95 % C.I. =  $[-.10, -.07]$ ) and reputation concern positively predicted help-seeking reluctance ( $Estimate = .35$ , 95 % C.I. =  $[.34, .36]$ ). At the community level, social cohesion showed a negative trend in predicting help-seeking reluctance ( $Estimate = -.26$ , 95 % C.I. =  $[-.59, .07]$ ), and reputation concern showed a positive trend in predicting help-seeking reluctance ( $Estimate = .37$ , 95 % C.I. =  $[-.03, .76]$ ), but both confidence intervals included zero. When reputation concern was omitted from the model, social cohesion negatively predicted help-seeking reluctance at the individual level ( $Estimate = -.11$ , 95 % C.I. =  $[-.13, -.10]$ ), but not at the community level ( $Estimate = -.12$ , 95 % C.I. =  $[-.40, .18]$ ).

Fig. 2 shows the multilevel model predicting depressive symptoms. Social cohesion negatively predicted reputation concern at the individual level ( $Estimate = -.08$ , 95 % C.I. =  $[-.09, -.07]$ ) but positively predicted reputation concern at the community level ( $Estimate = .37$ , 95 % C.I. =  $[.04, .70]$ ). At the individual level, social cohesion negatively predicted depressive symptoms ( $Estimate = -.29$ , 95 % C.I. =  $[-.30, -.28]$ ) and reputation concern positively predicted depressive symptoms ( $Estimate = .18$ , 95 % C.I. =  $[.17, .19]$ ). Similarly, at the community level, social cohesion negatively predicted depressive symptoms

**Table 1**  
Descriptive statistics of study variables.

Variable	Mean (SD) or n (%)	Number of missing values (%)
Social cohesion	3.76 (0.64)	779 (3.3 %)
Reputation concern	1.64 (0.74)	971 (4.1 %)
Reluctance to seek help	1.77 (0.88)	952 (4.0 %)
Depressive symptoms	3.06 (3.09)	946 (4.0 %)
Gender		
Men	11,131 (47.0 %)	
Women	12,541 (53.0 %)	
Age group		
65–69	5,586 (23.6 %)	
70–74	7,012 (29.6 %)	
75–79	5,859 (24.8 %)	
80–84	3,451 (14.6 %)	
85 or above	1,764 (7.5 %)	
Year of education		
< 10 years	5,917 (25.0 %)	
10–12 years	10,136 (42.8 %)	
≥ 13 years	6,855 (29.0 %)	
Other or unknown	764 (3.2 %)	
Annual equivalized household income		
Low (<1,600,000 yen)	7,112 (30.0 %)	
Middle (1,600,000–2,745,000 yen)	6,666 (28.2 %)	
High (≥2,745,000 yen)	6,118 (25.8 %)	
Unknown	3,776 (16.0 %)	
Marital status		
Married/cohabiting	16,905 (71.4 %)	
Never married	737 (3.1 %)	
Widowed	4,298 (18.2 %)	
Divorced	1,071 (4.5 %)	
Other or unknown	661 (2.8 %)	
Locally born vs. non-locally born		
Locally born residents	2,131 (9 %)	
Non-locally born residents	20,838 (88 %)	
Unknown	703 (3 %)	
Total number of participants	23,672	

(*Estimate* =  $-.48$ , 95 % C.I. =  $[-.83, -.12]$ ) and reputation concern positively predicted depressive symptoms (*Estimate* =  $.56$ , 95 % C.I. =  $[.13, .99]$ ). When reputation concern was omitted from the model, social cohesion negatively predicted depressive symptoms at the individual level (*Estimate* =  $-.30$ , 95 % C.I. =  $[-.32, -.29]$ ), but not at the community level (*Estimate* =  $-.27$ , 95 % C.I. =  $[-.57, 0.03]$ ).

We conducted a sensitivity analysis by dichotomizing the depression

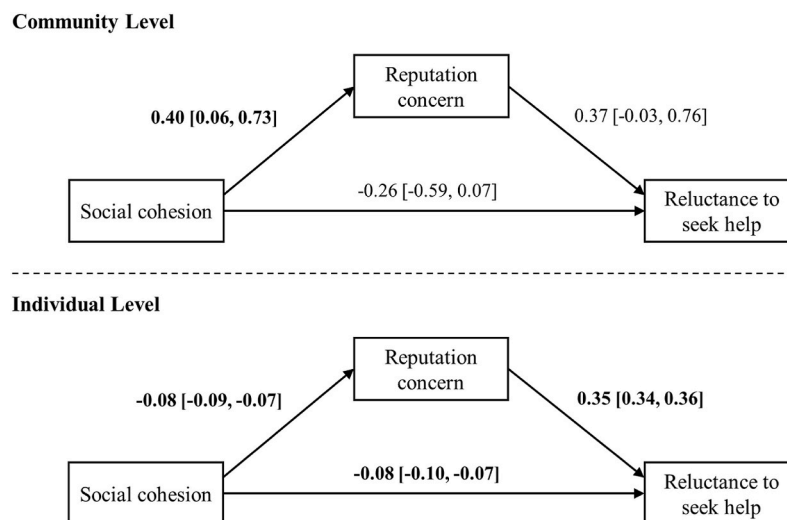
scores using a 5/6 cutoff (Schreiner et al., 2003) and observed similar patterns, except that the confidence interval for the community-level association between social cohesion and depressive symptoms included zero (see [Supplementary Fig. S1](#)). For effect sizes, we calculated odds ratios at both the individual and community levels, representing the change in the odds of having a depression score  $\geq 6$  per one standard deviation increase in each predictor. The odds ratio for social cohesion was 0.53 (95 % C.I. =  $[0.51, 0.55]$ ) at the individual level and 0.99 (95 % C.I. =  $[0.95, 1.05]$ ) at the community level, while the odds ratios for concern for reputation were 1.47 (95 % C.I. =  $[1.42, 1.52]$ ) at the individual level and 1.05 (95 % C.I. =  $[1.01, 1.11]$ ) at the community level.

We further tested whether SES moderates the effect of social cohesion on reputation concern. The results are presented in [Table 2](#). In Model 1, individuals with fewer years of education and those with lower incomes reported higher concerns about reputation. In Model 2, the interaction between year of education and social cohesion was significant at both levels. In Model 3, the interaction between individual-level social cohesion and equivalized income was significant, while the interaction between community-level social cohesion and equivalized income was not significant. As shown in [Fig. 3](#), higher individual social cohesion predicted lower reputation concern, and the effect was larger for those with fewer years of education or lower income. However, at the community level, compared to individuals with 13 years of education or more, those with less than 9 years of education or with 10–12 years of education were more likely to experience increased reputation concern in highly cohesive communities. Although a similar trend can be observed in the model using equalized income as a measure of SES (see [Fig. 3](#)), the interaction effect was not significant.

As a supplementary analysis, the results of the cross-sectional mediation analyses are presented in the [Supplemental Materials](#). These findings are consistent with the main analyses and support the same overall conclusion.

### 3. Discussion

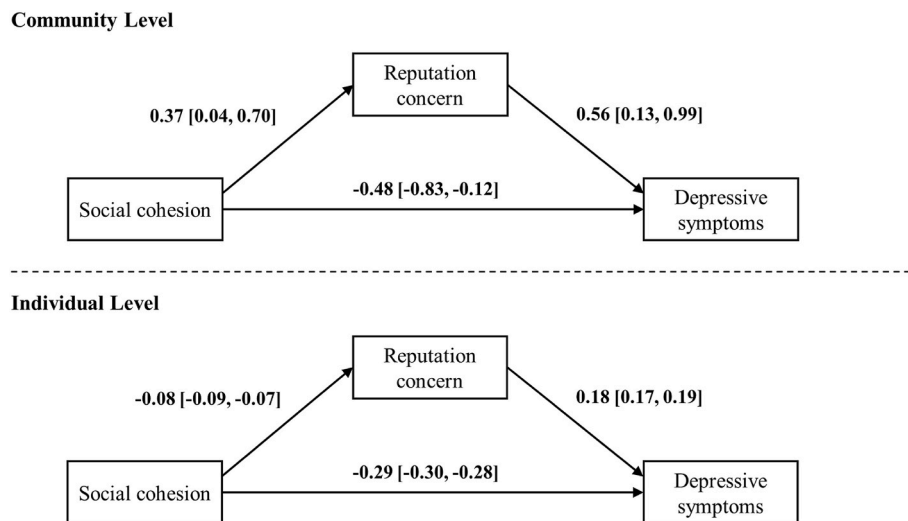
In this cross-sectional study, we explored the associations between social cohesion, reputation concern, help-seeking reluctance, and depressive symptoms, based on a population-based survey of older Japanese adults. Despite the consistently beneficial effects of individual-level social cohesion (De Silva et al., 2005; Ehsan et al., 2019), community-level social cohesion was associated with increased



**Fig. 1.** Multilevel Model Predicting Reluctance to Seek Help

Note.  $N = 23,672$ . We adjusted for gender, age group, year of education, equivalized income, marital status, and whether participants were born in the community. All variables were standardized at the individual level. Estimates with 95 % confidence intervals that do not contain the null value are marked in bold.





**Fig. 2.** Multilevel Model Predicting Depressive Symptoms

Note.  $N = 23,672$ . We adjusted for gender, age group, year of education, equivalized income, marital status, and whether participants were born in the community. All variables were standardized at the individual level. Estimates with 95 % confidence intervals that do not contain the null value are marked in bold.

**Table 2**  
Predicting reputation concern from individual- and community-level social cohesion and SES.

Variable	Model 1		Model 2		Model 3	
	Estimate	95 % C.I.	Estimate	95 % C.I.	Estimate	95 % C.I.
Community social cohesion	<b>0.10</b>	<b>[0.05, 0.16]</b>	0.01	[-0.09, 0.10]	0.03	[-0.07, 0.14]
Individual social cohesion	<b>-0.08</b>	<b>[-0.10, -0.07]</b>	<b>-0.04</b>	<b>[-0.07, -0.01]</b>	<b>-0.04</b>	<b>[-0.07, -0.01]</b>
Year of education (ref: $\geq 13$ years)						
< 10 years	<b>0.09</b>	<b>[0.05, 0.12]</b>	<b>0.09</b>	<b>[0.05, 0.12]</b>	<b>0.09</b>	<b>[0.05, 0.13]</b>
10–12 years	<b>0.04</b>	<b>[0.01, 0.07]</b>	<b>0.04</b>	<b>[0.01, 0.07]</b>	<b>0.04</b>	<b>[0.01, 0.07]</b>
Annual equivalized household income (ref: High)						
Low	<b>0.08</b>	<b>[0.04, 0.11]</b>	<b>0.08</b>	<b>[0.04, 0.11]</b>	<b>0.08</b>	<b>[0.05, 0.12]</b>
Middle	<b>0.06</b>	<b>[0.02, 0.09]</b>	<b>0.06</b>	<b>[0.02, 0.09]</b>	<b>0.06</b>	<b>[0.03, 0.09]</b>
Year of education $\times$ Community social cohesion						
< 10 years $\times$ Community social cohesion			<b>0.15</b>	<b>[0.01, 0.30]</b>		
10–12 years $\times$ Community social cohesion			<b>0.13</b>	<b>[0.01, 0.26]</b>		
Year of education $\times$ Individual social cohesion						
< 10 years $\times$ Individual social cohesion			<b>-0.09</b>	<b>[-0.12, -0.05]</b>		
10–12 years $\times$ Individual social cohesion			<b>-0.04</b>	<b>[-0.07, -0.01]</b>		
Annual equivalized household income $\times$ Community social cohesion						
Low $\times$ Community social cohesion					0.08	[-0.05, 0.22]
Middle $\times$ Community social cohesion					0.11	[-0.03, 0.26]
Annual equivalized household income $\times$ Individual social cohesion						
Low $\times$ Individual social cohesion					<b>-0.04</b>	<b>[-0.07, -0.01]</b>
Middle $\times$ Individual social cohesion					<b>-0.07</b>	<b>[-0.11, -0.03]</b>

Note.  $N = 23,672$ . We adjusted age, gender, marital status, and whether participants were born in the community in all models. Missing values in years of education and income were directly modeled using dummy codes. Estimates with 95 % confidence intervals that do not contain the null value are marked in bold. All coefficients were standardized.

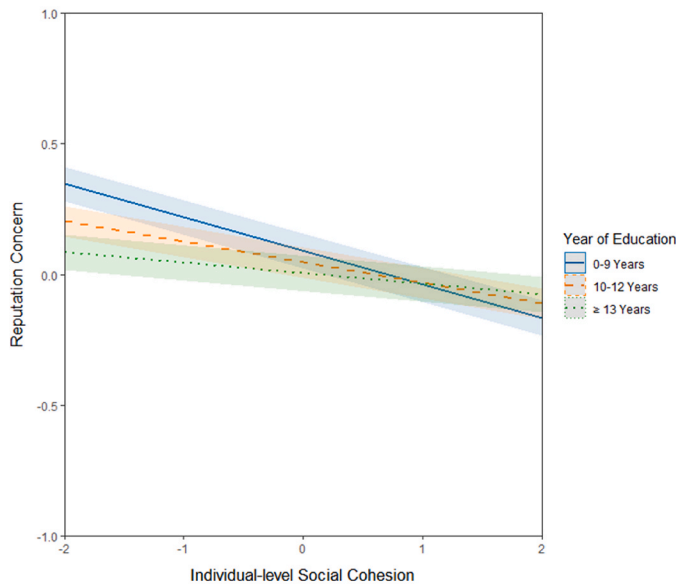
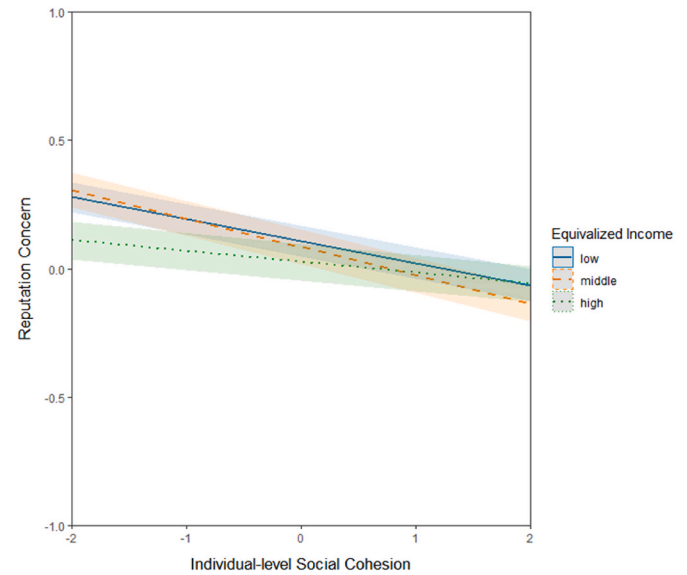
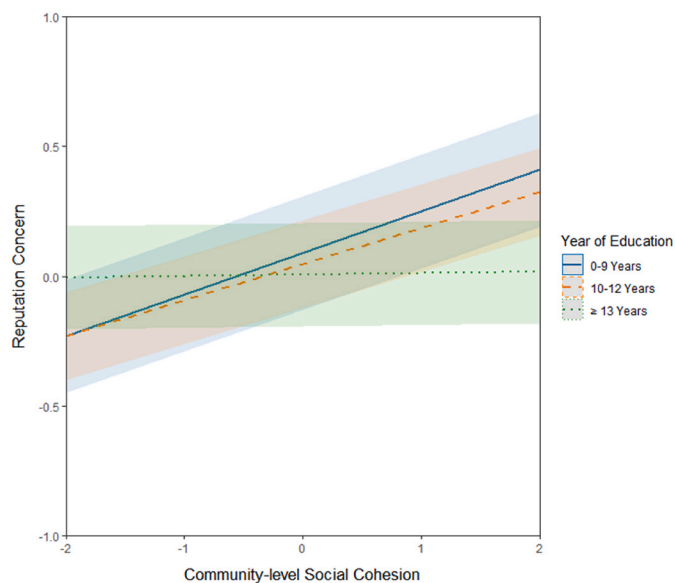
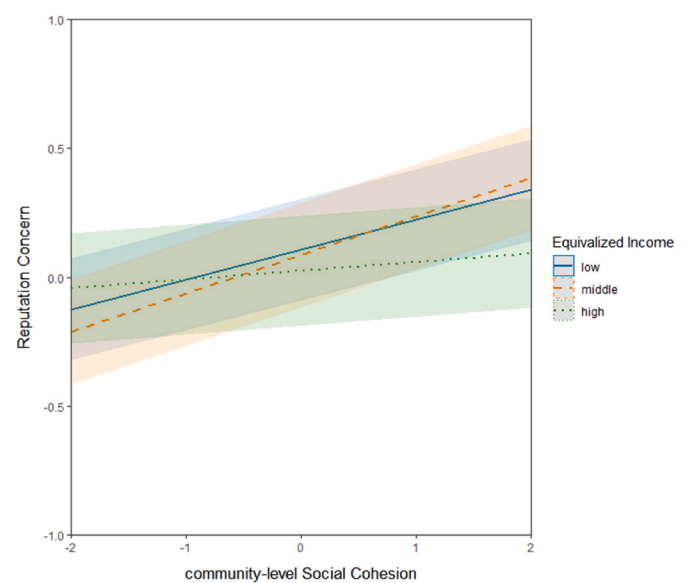
reputation concerns, which in turn negatively predicted mental health. We also found that, in general, community-level social cohesion was not associated with reluctance to seek help among older adults when they felt worried or stressed. However, it was particularly linked to increased concern for reputation among those with 12 years of education or less, which in turn may be associated with greater psychological reluctance to seek support. Our findings provided empirical support for the "dark side" of social cohesion (Kawachi, 2010; Kawachi and Berkman, 2014) and offer a potential explanation for the null or mixed effects observed in previous studies.

We found evidence supporting both positive and negative pathways of community social cohesion. On the positive side, highly cohesive societies may provide mutual support, as seen in lower crime rates (Sampson et al., 1997; Takagi et al., 2012) and more effective disaster recovery (Hikichi et al., 2016, 2020). Strong social solidarity can help individuals cope more effectively with challenging situations. However,

a negative pathway linked to concern for reputation may offset these benefits. In such contexts, strong social norms can become burdensome, potentially undermining the mental health of older adults. This may be especially relevant in low-mobility societies like Japan, where strong group cohesion can create substantial normative pressure that may adversely influence mental health outcomes (Easterbrook et al., 2024).

A key finding of this research was the contrasting patterns of the associations between social cohesion and reputation concerns at different levels, highlighting the complexity of social cohesion and the importance of using multilevel modeling to study this issue (Kawachi and Berkman, 2000). While individuals with higher trust and attachment to their community were less worried about how others perceive them, living in a community with close-knit social networks appeared to increase awareness of or even pressure to conform to social expectations (Cavazza et al., 2014; Yamagishi and Yamagishi, 1994).

The association between community social cohesion and reputation

(A) Individual social cohesion  $\times$  Year of education(C) Individual social cohesion  $\times$  Income(B) Community social cohesion  $\times$  Year of education(D) Community social cohesion  $\times$  Income**Fig. 3.** Associations Between Social Cohesion and Reputation Concern Moderated by SES

Note. Predicated values and confidence intervals from Models 2 and 3 in Table 2 were shown.

concern was observed only among individuals with less than 12 years of education (e.g., without a college degree). Among older adults with 13 or more years of education (e.g., with a college degree), we found little evidence of such an association. Experiences of higher education seemed to mitigate the potentially paradoxical effects of social cohesion on mental health and help-seeking. Attending college or university, often requiring individuals to live outside their local communities, can increase social network diversity and provide more life and relationship options beyond their hometowns. In contrast, less-educated individuals tend to have social networks confined to their local communities, making them more sensitive to others' opinions in cohesive societies. This dynamic may help explain why the "negative path" of community social cohesion was more pronounced among less-educated individuals.

Despite the moderating role of educational attainment, income did not moderate the effect of community social cohesion on reputation concerns. This suggests that different aspects of socioeconomic status

may operate through distinct mechanisms. For example, having more financial resources does not necessarily enable individuals to be more independent from reputational pressures within their local community. In contrast, experiences of higher education (often outside the local community) may increase personal mobility, helping individuals overcome potential reputational pressures in local communities. Alternatively, the divergent pattern may also be because household income is not an ideal measure of financial resources among older adults who rely on savings or other unreported sources.

Our findings highlight the potential negative aspects of community social cohesion and the SES disparities in reputation concern and mental health in highly cohesive communities. Programs aimed at increasing cohesion and cooperation within communities should consider these potential SES differences. Highly educated older adults may be more inclined to engage in and benefit from community-based activities. Importantly, despite the increased concern for reputation among less-

educated individuals in highly cohesive communities, individual social cohesion appears to serve as a stronger protective factor for them compared to higher-educated individuals. Having high personal trust and attachment was associated with reduced worry and concern among less-educated individuals. In this vein, understanding and addressing the unique psychological needs of less-educated individuals may help foster cohesive cultures that benefit all members of the community.

Several limitations of this study should be noted. First, we used cross-sectional data, which is not ideal for testing causal effects. Our findings should not be interpreted as evidence of causal relationships, but rather as a set of associations that could inform future studies using longitudinal mediation designs. Second, the current study focuses on the impact of community social cohesion on older adults, so the results may not be generalizable to younger or middle-aged adults. Older adults are generally more dependent on others, and their well-being may be more strongly influenced by cohesion in local communities. It is thus important for future studies to replicate our findings in other populations. Third, our sample included only older adults who were not certified for public long-term care insurance, but this certification process varies across municipalities. Sample characteristics may thus differ slightly between municipalities. Fourth, we relied on single-item measures for reputation concern and help-seeking. The measure of reluctance to seek help captures only a specific type of support (i.e., talking to someone or asking for help when feeling worried or stressed). However, older adults may encounter a variety of help-seeking situations in daily life that are not captured by the current measure, such as requesting assistance with chores or transportation. Future studies should validate our findings using more comprehensive measures of these variables. Finally, concerns about social reputation may be more pronounced in Japan or other East Asian countries (Chen et al., 2024; Nakagomi et al., 2020; Takagi et al., 2013), so our findings might reflect the unique social context of Japanese communities. Future research should examine whether these effects can be observed in other societies.

#### 4. Conclusions

There is no consensus on whether community social cohesion has beneficial or detrimental effects on mental health, despite its practical significance. Our findings reveal correlational patterns suggesting that community social cohesion may be associated with increased concern for reputation within the community, which in turn is associated with more depressive symptoms in older adults. Despite efforts to increase social cohesion at the community level (Fone et al., 2007; Orazani et al., 2023), it is essential to consider potential unintended consequences, such as increased residents' concerns about being judged negatively by others. Researchers and practitioners should be aware of the complexity and paradoxical nature of social cohesion when designing interventions or assessing its impact on mental health.

#### CRedit authorship contribution statement

**Kuan-Ju Huang:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Yukiko Uchida:** Writing – review & editing, Methodology, Conceptualization. **Kosuke Takemura:** Writing – review & editing, Methodology, Conceptualization. **Shintaro Fukushima:** Writing – review & editing, Methodology, Conceptualization. **Jun Aida:** Writing – review & editing, Methodology, Conceptualization. **Masamichi Hanazato:** Writing – review & editing, Methodology, Conceptualization. **Mariko Kanamori:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Conceptualization.

#### Ethical statement

The authors assert that all procedures contributing to this work

comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. The JAGES was approved by the Ethics Committee at National Center for Geriatrics and Gerontology (1274-2), Chiba University Faculty of Medicine (3442), and the Japan Agency for Gerontological Evaluation Study (2019-01). All participants were asked for their written consent when they returned a questionnaire.

#### Declaration of Generative AI Usage in the Writing process

The authors used ChatGPT to check for grammatical errors and increase readability. The authors carefully reviewed and edited the content and took full responsibility for the content in this paper.

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#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2025.118234>.

#### Data availability

The data supporting the findings of this paper are available upon application to the JAGES data management committee (dataadmin.ml@jages.net).

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