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Childlessness and sibling positioning in upward intergenerational support: Insights from Singapore

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Abstract

Objective: This brief report aims to explore the role of childlessness and its interaction with sibling positioning (i.e., birth order and gender) in upward intergenerational support within the context of Asian familial and patrilineal values.

Background: Despite the increasing rates of childlessness in Asia, little is known about how childless individuals deviate from or adhere to the patrilineal gendered practices of supporting their older parents. Singapore, a rapidly aging nation that emphasises Confucian familism values and patrilineal practices in guiding its welfare policies, provides an ideal setting for this research investigation.

Method: We analysed a sample of 475 Singaporeans aged 50 and above with at least one living parent from a recent nationwide survey. We utilised multivariate regressions to examine the associations between childlessness and various types of upward intergenerational support, with further heterogeneity analyses based on sibling positioning.

Results: The traditional patrilineal pattern of first-born sons providing the most financial transfers to aging parents was found among non-childless individuals. In contrast, all childless individuals, regardless of their birth order and gender, played a significant role in providing intergenerational support, particularly in instrumental and associational support, as well as maintaining geographical proximity to their parents.

Conclusion: Childless individuals in Singapore were found to shoulder the primary responsibility for supporting parents, thus upholding the values of filial piety and familism. Results further suggest that the rising prevalence of childlessness may contribute to the erosion of patrilineal norms in upward intergenerational support in Asia.

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KEYWORDS

aging, children, fertility, intergenerational relationships, siblings

INTRODUCTION

Filial support for aging parents is considered a collective effort often actively negotiated among siblings under the influence of prevailing societal norms (Lin & Wolf, 2020; Vergauwen & Mortelmans, 2021). However, the rapid transformation of family structures, stemming from declining marriage and fertility rates, increasing childlessness rates, and improving longevity, has brought about significant changes in the role of each adult child in providing support to aging parents (Chanfreau & Goisis, 2022). Despite these major demographic shifts, little is known about the support that childless individuals may provide to aging parents, and how childlessness may interact with birth order and gender in shaping the distribution of support across siblings in many parts of modern Asia, where patrilineality has traditionally served as a guiding principle for intergenerational support (Silverstein, 2021). This study aims to investigate the following questions: Do childless individuals provide more support for aging parents than the non-childless? Does the responsibility of supporting aging parents primarily fall on the first-born sons, regardless of their childlessness status? Or, has the responsibility of filial support shifted toward any other childless siblings, moving away from the traditional gendered patterns in upward intergenerational support? To address these questions, we will focus on Singapore, a country characterised by rapid population aging, high childlessness rates, and a deeply ingrained culture of familism.

BACKGROUND

The growing prevalence of childlessness in the context of global population aging raises concerns about the care and support needs of childless older individuals, especially considering the traditional reliance on children for old-age support in many societies (Verdery et al., 2019). Although this dominant discourse appropriately highlights pressing social and policy issues, it often overlooks the increasing evidence that childless individuals themselves play a crucial role in maintaining kinship ties and providing caregiving for their own parents (Albertini & Kohli, 2017). Contrary to concerns that childlessness may weaken connections with the family of origin due to deviations from traditional familial norms and desires for generational independence (Avison & Furnham, 2015), recent empirical findings rather reveal the opposite trend. Studies conducted in western countries consistently show that childless individuals tend to develop deeper social relationships, engage in greater inter-vivo transfers, and provide various forms of support to their aging parents, compared to non-childless individuals (Hurd, 2009; Pesando, 2019).

Several theoretical perspectives are useful for conceptualising the division of parental care support among adult children, particularly when investigating which characteristics of adult children are linked to the likelihood and intensity of care provision. For instance, the time availability perspective suggests that adults with fewer competing responsibilities are more likely to take on a substantial caregiving role for their aging parents (Grigoryeva, 2017; Leopold et al., 2014). Having their own children, marriage, and participation in the labour force are known to create time constraints that may hinder an adult child from becoming a caregiver for their older parents (Pillemer & Suito, 2014). This leads us to hypothesise that childless individuals may provide older parents with greater support than their counterparts.

Another perspective indicates that irrespective of a child's circumstances, those who share emotional closeness and affection with their parents may assume a primary role in

intergenerational support (Pillemer & Suito, 2014). Daughters are often reported to have stronger emotional bonds with their parents, especially with their mothers (Leopold et al., 2014), whereas married individuals may have weaker emotional bonds and a more independent relationship with their parents (Sarkisian & Gerstel, 2008). However, it is not clear whether childless individuals would have more or less emotional closeness with their parents, which may potentially affect their support to older parents.

Childlessness, gender, and birth order in intergenerational support

Although the concept of filial piety universally implies the responsibility of adult children to support their aging parents, notable divergences exist between western and Asian societies regarding gendered filial expectations in upward intergenerational support (Lin & Yi, 2013; Silverstein, 2021). In western societies, adult daughters are more likely than sons to be kin keepers and to provide emotional and caregiving support for aging parents (Grigoryeva, 2017; Vergauwen & Mortelmans, 2021), whereas gender differences in financial support tend not to be significant (Deindl & Brandt, 2011). However, in Asian societies with strong patrilineal norms, one's gender and birth order may hold greater significance in determining upward intergenerational support (Lee & Luo, 2021). Influenced by long-standing traditions of son preference and gender bias in inheritance, sons are traditionally expected to provide material support to their parents, whereas their spouses are expected to offer care and other instrumental support (Park, 2021). Conversely, daughters are typically called upon to support their own parents on an occasional basis, often stepping in when their brothers are unavailable (Ho, 2019). In families with multiple sons, birth order often comes into play in determining the primary responsibility for supporting aging parents, typically falling upon the first-born sons and their wives (Lai, 2010).

However, these traditional patrilineal expectations may not hold true for childless individuals. Research suggests that childless individuals tend to exhibit more liberal political views and lower levels of religious affiliation compared to the non-childless (Avison & Furnham, 2015); this may indicate that they are also less likely to adhere to traditional familial norms regarding gender roles and birth order in the context of upward intergenerational support. Moreover, recent evidence indicates significant shifts in gendered filial expectations in Asia, including an increasing role of daughters in upward intergenerational support compared to sons, or even a preference for daughters over sons or daughters-in-law for caregiving and companionship in old age (Chun & Das Gupta, 2022; Teerawichitchainan, 2021). These dynamics may lead childless daughters to assume more active roles in providing upward support for aging parents, as they do not have any children to care for and presumably have more time.

Nonetheless, only a few existing studies have explored how sibling structure influences upward intergenerational support in modern Asia (Hu & Chen, 2019; Lin & Yi, 2013). To the best of our knowledge, none have yet examined the interplay between birth order, gender, and childlessness. This study extends the literature by investigating the interplay between childlessness and sibling positioning in the provision of support to aging parents in Singapore.

The Singapore context

Singapore provides a compelling case for delving into the evolving roles of childless individuals within families for several reasons. First, Singapore is one of Asia's most rapidly aging countries, with the proportion of older adults over 60 years expected to increase from 9% in 1990 to 40% in 2050 (Malhotra et al., 2019). Furthermore, Singapore has one of the highest childlessness rates globally, with 16% of women aged 50 and above and 12% of their male counterparts remaining childless in 2020 (Ho et al., 2022).

Additionally, the influence of Confucian culture looms large in the country. Adult children are traditionally expected to uphold filial duties by caring for their aging parents, with deviations from this norm being frowned upon (Rozario, 2012). Familism represents one of the fundamental tenets in Singapore, partially driven by the government's deliberate revival of Confucian values and active promotion of families as the frontline of old-age support (Fong & Borowski, 2022). Patrilineal norms have served as a guiding principle for familism values, particularly among the Chinese ethnic group which comprises three-quarters of the resident population (Tan, 2008). However, the diminishing sibship size and the growing prevalence of childlessness may pose a challenge to this foundational principle. This shift raises a pressing question: who will bear the responsibility of caring for aging parents in the years to come? This issue is expected to become a prominent policy agenda in the foreseeable future.

METHOD

Data

Data come from a unique nationwide survey titled 'Childless Aging in Singapore' which was carried out from January to June 2022. The survey interviewed 1500 older Singaporeans aged 50 and above, with oversampling of childless individuals. The sample was randomly selected from a nationally representative list of residential households containing at least one member aged 50 or older. This list was provided by Singapore's Department of Statistics, utilising a proportionate stratified design covering various housing types and diverse socioeconomic characteristics of community-dwelling Singaporeans aged 50 or older. As only a small fraction (1.8%) of older Singaporeans reside in institutional settings (Chan et al., 2018), its impact on the survey's representativeness is minor at most. Interviews were conducted face-to-face in respondents' homes, with each interview lasting approximately 1 h.

The survey design is well-suited for our research inquiry. First, it oversampled individuals without living biological or adopted children, ensuring adequate observations of childless respondents ($N = 500$). Second, the survey provides comprehensive information regarding the respondents' relationships with their parents and siblings as well as sibship characteristics such as gender composition of siblings and the number of childless siblings. Third, the respondents' age is 50 years and above, which is considered a reasonable cut-off for classifying individuals as childless because people aged 50 and above are near the end of the reproductive cycle and fertility is rarely observed beyond this age (Bhasin et al., 2019). Furthermore, the living parents of individuals aged 50 years and above tend to be in an advanced age when risks of frailty and need for long-term care are rising sharply (He et al., 2022).

We restrict the sample to respondents with at least one parent alive at the time of the survey. After excluding 23 individuals with missing values for any of the variables in the model, our analytic sample consists of 475 adult children, of whom 177 are childless (37.26%) and 298 are non-childless (62.74%). Of the 475 respondents, 69 have only their fathers alive, 318 have only their mothers alive, and 88 have both parents alive.

Measures

Intergenerational support

We consider four domains of upward intergenerational support. *Financial support* refers to the total amount of financial assistance (in Singapore dollars) that the respondent (and/or their spouse) provided for their parent(s) in the previous year. *Instrumental support* refers to how

frequently the respondent (and/or their spouse) provided time-based support to their parents such as household chores and caregiving. Possible responses include 0 (*not at all*), 1 (*once a year*), 2 (*every few months*), 3 (*monthly*), 4 (*weekly*), 5 (*every few days*), and 6 (*everyday*). *Associational support* captures the frequency of physical meetings and non-physical contact between the respondent and parents in the past year. Possible responses are similar to those of instrumental support. Because these associational support variables are only asked of respondents who do not co-reside with their parents, we assign the highest value of 6 to those who live with their parent(s). *Structural support* refers to the geographical proximity between the respondent and their parent(s). Possible responses are 1 (*overseas excluding Singapore's neighbouring country, Malaysia*), 2 (*Malaysia*), 3 (*more than 2 km*), 4 (*within 2 km*), to 5 (*co-residence*). Note that for 85 respondents whose parents are both alive, we use the higher value of the support variables between their mother and father.

Childlessness and Sibling Positioning, Structure, and Relationship—*Childlessness* (yes/no) indicates whether the respondent has any biological or adopted children. *Sibling positioning* is assessed using birth order and gender (first-born son as the reference group, second-born son, third or later-born son, first-born daughter, second-born daughter, and third or later-born daughter). *Sibling structure* assesses multiple aspects of the respondent's sibship, encompassing sibship size (the number of total living and deceased siblings), the percentage of childless siblings among the total number of siblings, the presence of one or more deceased sibling(s) (yes/no), the presence of one or more brother(s) (yes/no), and the presence of one or more sisters (yes/no). *Relationship with sibling(s)* assesses the relationship quality between the respondent and siblings (rated on a scale of 1 '*Not close to any of siblings*' to 4 '*Close to all siblings*') and whether the respondent received any money from their siblings during the past year (yes/no).

Demographic characteristics

We include the following demographic characteristics: marital status (currently married vs. never married/widowed/divorced/ separated), age, ethnicity (Chinese vs. non-Chinese), and whether the respondent lives with any of his/her own children or grandchildren (yes/no).

Socioeconomic status

We incorporate educational attainment (primary education or less as the reference group, secondary education, and post-secondary education), current full-time employment (yes/no), self-assessed income adequacy (yes/no), childhood economic status (on a scale of 1–5 with 5 '*being the most well-off in childhood*'), home ownership (yes/no), and type of housing (government-built housing vs. private housing). In Singapore, residing in private housing (e.g., condominiums, landed houses) is usually associated with higher SES compared to government-built flats where a majority of Singaporeans reside.

Parents' demographic characteristics

Both 'only father alive' and 'only mother alive' are included, with the reference group being 'both parents alive'. Additionally, we include parental age, education (at least secondary education vs. less than secondary education), and current health status reported by the respondent (slightly or severely limited vs. not limited) to capture the parents' personal care needs. We also include the relationship quality between the respondent and parents (rated on a scale of 1 '*Very unsatisfied*' to 5 '*Very satisfied*'). For the measures of parental characteristics and relationship

quality, if both parents are alive, we use the higher value of the variables between the mother and father.

Analytical strategy

First, we present descriptive statistics on intergenerational support and other covariates for our analytic sample (475 respondents with at least one living parent), stratified by childlessness status. Second, we employ ordinary least squares (OLS) regression models to examine the associations between intergenerational support and various predictors, including childlessness, sibling positioning, sibling structure, relationship with siblings, demographic characteristics, socioeconomic status, and the parents' demographic characteristics. Third, to further examine the relationship between childlessness and sibling positioning, we employ OLS regression models to interact each sibling positioning with childlessness status. This approach allows us to estimate the average level of intergenerational support for various sibling positions compared to the reference group (i.e., non-childless first-born son). All empirical models control for other covariates including socioeconomic status and parents' demographic characteristics. Controlling for such factors helps mitigate the potential issue of omitted variable bias, as these factors may be associated with both support and childlessness. Nevertheless, we interpret our results as correlational rather than causal. We also compute heteroskedastic-robust standard errors in all analyses. Finally, we note that the results (not shown) were robust to using non-linear regression models for ordinal outcomes (e.g., instrumental support).

RESULTS

Characteristics of childless versus non-childless individuals

Differences in characteristics between childless and non-childless individuals in the sample are presented in Table 1. Childless individuals exhibited significantly higher levels of support towards aging parents for all types of upward intergenerational support compared to non-childless individuals ($p < .05$). No statistical differences were observed in sibling positioning between the childless and non-childless groups. Regarding sibling structure, childless individuals were more likely to have a smaller sibship size and a higher proportion of childless siblings from total siblings ($p < .05$). They also reported having less close relationships with their siblings and receiving more material support from their siblings compared to non-childless individuals ($p < .05$). In general, childless individuals were less likely to be currently married, be non-Chinese, and own a house, although they were more likely to have a higher level of educational attainment ($p < .05$). Respondent's age and parental demographic characteristics were not significantly different between childless and non-childless individuals. Childless individuals were likely to report a less close relationship with their parents, compared to the non-childless counterparts.

Childlessness and intergenerational support

OLS regression models were used to estimate the associations between upward intergenerational support, childlessness status, and other covariates. The predicted level of each dimension of intergenerational support based on childlessness status is presented in Figure 1, with 95% confidence intervals shown (see Online Appendix Table 1 for model results). Overall, Figure 1 suggests that childless individuals were more likely than non-childless individuals to

TABLE 1 Summary statistics of the analytic sample.

	Respondents with any parent alive ($N = 475$)				
	Childless individuals ($N = 177$)		Non-childless individuals ($N = 298$)		<i>p</i>
	Mean	SD	Mean	SD	
Intergenerational support					
Financial support (\$\$, Annual)	3074.00	(4063.00)	2030.00	(3308.00)	*
Instrumental support: Time support ^a	4.37	(2.13)	2.84	(2.11)	*
Associational support: Physical meetings ^a	4.92	(1.59)	3.34	(1.92)	*
Associational support: Non-physical contact ^a	4.96	(1.76)	4.25	(1.74)	*
Structural support: Geographical proximity ^b	4.08	(1.05)	3.05	(1.12)	*
Sibling positioning					
First-born son (%)	13.6		11.1		ns
Second-born son (%)	7.9		10.4		ns
Third or later-born son (%)	19.2		17.8		ns
First-born daughter (%)	17.5		21.1		ns
Second-born daughter (%)	14.1		14.1		ns
Third or later-born daughter (%)	27.7		25.5		ns
Sibling structure					
Number of siblings	3.62	(2.20)	4.05	(2.29)	*
% of childless siblings	25.18	(31.41)	14.47	(22.61)	*
Has 1+ deceased sibling (%)	20.90		22.50		ns
Has 1+ brother (%)	87.60		87.60		ns
Has 1+ sister (%)	80.20		86.90		ns
Relationship with sibling(s)					
Quality of sibling relationships (1–4)	2.97	(1.12)	3.21	(1.02)	*
Received any money from siblings (%)	32.80		15.40		*
Demographic characteristics					
Currently married (%)	27.10		81.50		*
Age	58.15	(5.19)	58.81	(5.90)	ns
Chinese (%)	84.70		76.80		*
Living with children/grandchildren (%)	0.00		85.90		*
Socioeconomic status					
Education: Primary (%)	18.10		17.40		ns
Education: Secondary (%)	26.60		37.60		*
Education: Post-secondary (%)	55.40		45.00		*
Full-time employment (%)	52.50		57.40		ns
Income adequacy (%)	80.20		81.20		ns
Childhood economic status (1–5)	2.88	(0.77)	2.89	(0.83)	ns
House ownership (%)	76.30		91.60		*
Private housing (%)	13.0		13.1		ns
Parental demographic characteristics					
Only father alive (%)	12.40		15.80		ns
Only mother alive (%)	70.60		64.80		ns

(Continues)

TABLE 1 (Continued)

	Respondents with any parent alive ($N = 475$)				
	Childless individuals ($N = 177$)		Non-childless individuals ($N = 298$)		p
	Mean	SD	Mean	SD	
Both parents alive (%)	16.90		19.50		ns
Age	84.85	(6.28)	84.24	(6.02)	ns
Secondary education or more (%)	32.80		31.20		ns
Limited health (%)	49.70		47.00		ns
Relationship with the respondent (1–5)	4.25	(0.67)	4.42	(0.63)	*

Note: Asterisk indicate that the mean differences between childless and non-childless individuals are significant at $p < .05$.

Abbreviation: ns = not statistically significant.

^a0 = Not at all, 6 = Everyday.

^b1 = Overseas, 5 = Living together.

provide aging parents with instrumental support ($p < .10$), and they had more frequent physical as well as non-physical contacts and lived closer to their parents ($p < .05$). Although the analysis did not find a significant correlation between childlessness and the extent of financial support, a separate analysis (Online Appendix Table 2) revealed a significant positive association between childlessness and any amount of financial support provision to older parents ($p < .01$).

Childlessness and sibling positioning in intergenerational support

We further used OLS regression models to assess whether patrilineal practices in upward intergenerational support were less prevalent among childless individuals compared to non-childless individuals, by examining interaction terms between childlessness and sibling positioning. The predicted level of each dimension of intergenerational support based on childless/non-childless sibling positioning is presented in Figure 2, with 95% confidence intervals shown (see Online Appendix Table 3 for model results). Statistical significance was calculated for the marginal effects between each childless/non-childless sibling positioning and non-childless first-born sons as the reference category.

Figure 2A revealed that non-childless *first-born* sons were more likely to provide greater financial support to their parents than any other non-childless siblings, with a predicted annual transfer of S\$4008.48, holding other variables constant ($p < .10$). This pattern of first-born sons providing the highest level of financial support was more pronounced among non-childless individuals than childless individuals. The differences in monetary transfers to aging parents were not significantly different between non-childless first-born sons and any childless individuals (regardless of gender and birth order).

Unlike financial support in Figure 2A, instrumental support in Figure 2B did not show any clear patterns among non-childless individuals. In Figure 1, childless individuals tended to provide more instrumental support to aging parents than non-childless individuals; this figure showed that this was mostly driven by childless first-born daughters (4.59, significant at $p < .05$ compared to non-childless first-born sons).

In terms of associational and structural support (Figure 2C–E), no clear patterns emerged among non-childless individuals, similar to our findings for instrumental support. However, childless individuals, especially daughters and those with higher birth orders, consistently provided a higher level of physical meetings, non-physical contact, and geographical proximity than non-childless individuals. For example, in terms of physical meetings, childless first-borns

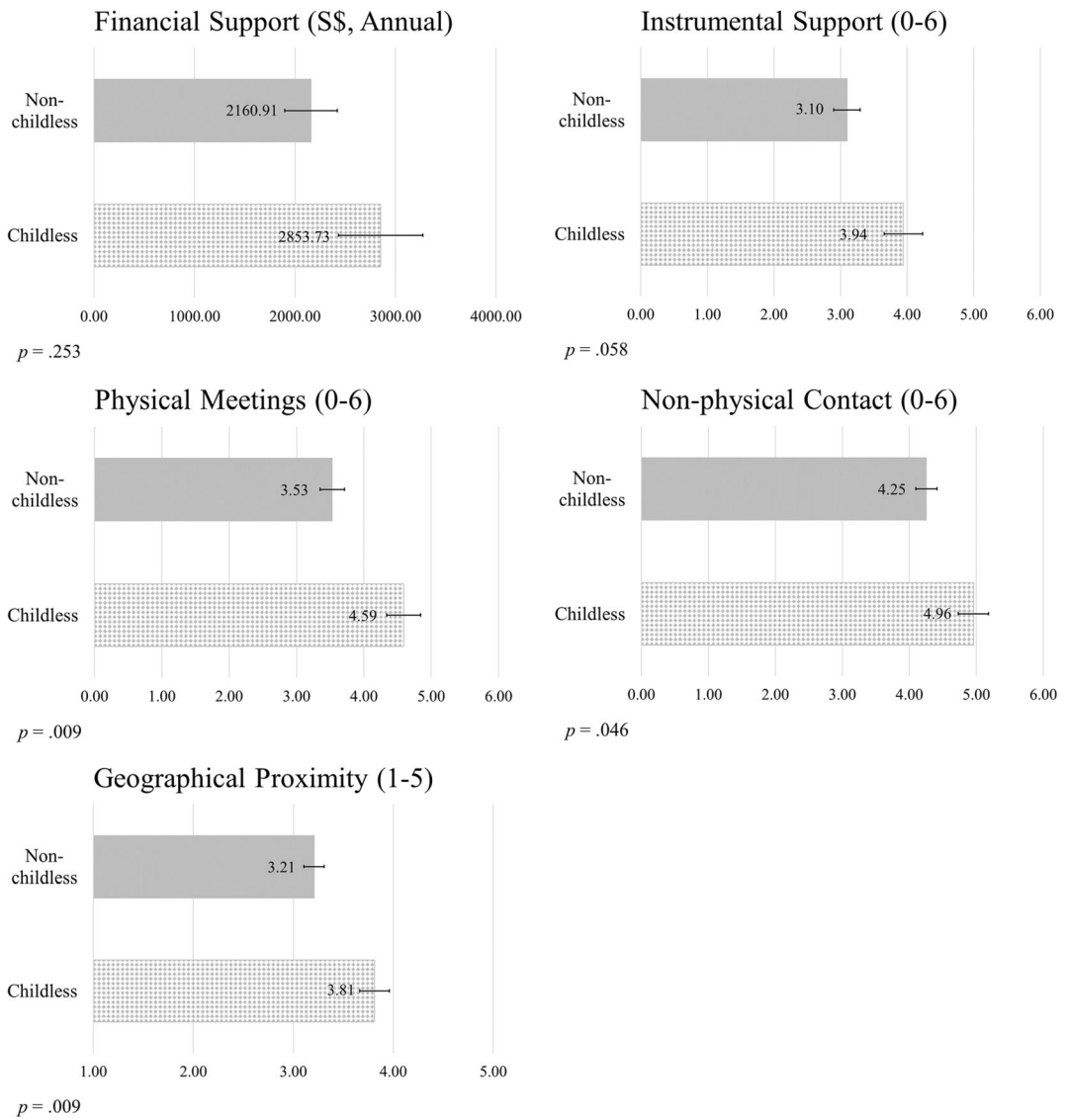


FIGURE 1 The predicted estimates of intergenerational support by childlessness status. Error bars indicate 95% confidence intervals. The significance of the childless—non-childless difference is indicated by the p -value on the bottom left of each subgraph (see Online Appendix Table 1 for OLS regression model results).

had a significantly higher frequency of physical meetings with aging parents compared to non-childless first-born sons as the reference group ($p < .10$). Regarding non-physical contact, childless daughters, especially childless first-born daughters, tended to engage more in non-physical contact with their aging parents, which was significantly different compared to the reference group ($p < .01$). Overall, in all types of support, childless daughters had slightly higher predicted values than childless sons, but the overall gender differences between childless sons and childless daughters were not statistically significant in our separate analysis.

It is also noteworthy that childless first-born sons exhibited higher levels of engagement in physical meetings ($p < .05$) and geographical proximity ($p < .10$) compared to their non-childless counterparts. Compared to non-childless first-born sons adhering more strongly to

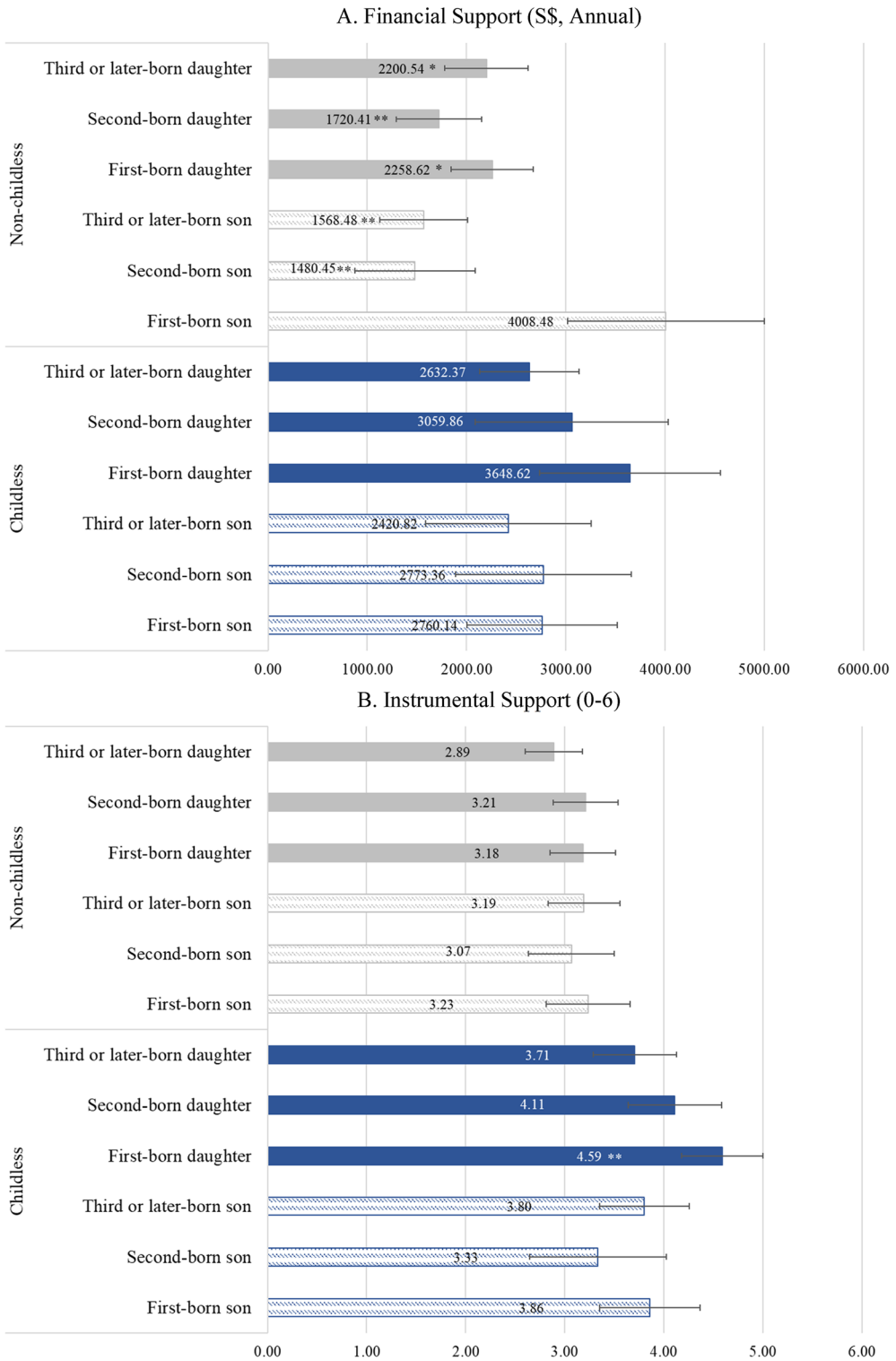
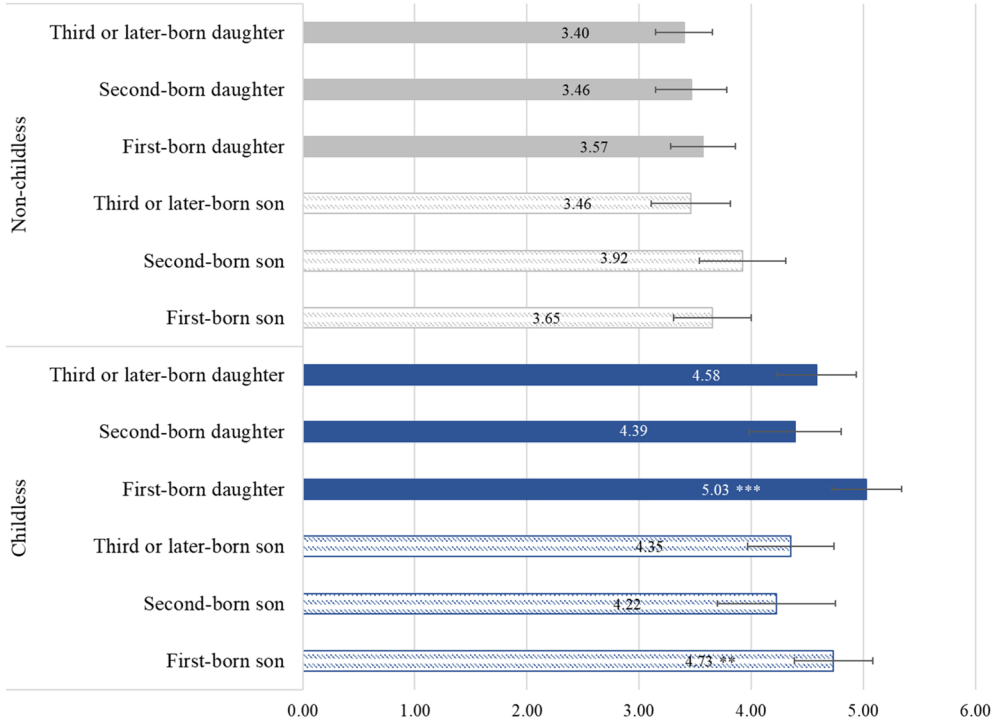


FIGURE 2 The predicted estimates of intergenerational support by childless/non-childless sibling positioning. Error bars indicate 95% confidence intervals. The significance of each childless/non-childless sibling positioning from the reference group (non-childless first-born son) is indicated with asterisks at *** $p < .01$, ** $p < .05$, * $p < .10$ (see Online Appendix Table 3 for OLS regression model results). [Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

C. Physical Meetings (0-6)



D. Non-physical Contact (0-6)

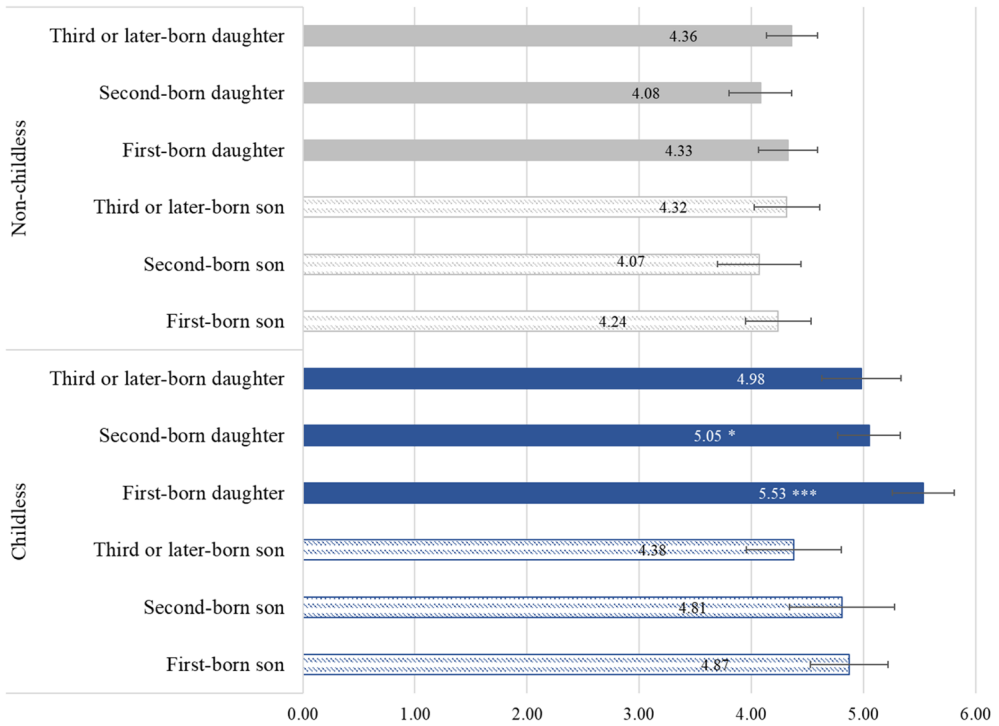


FIGURE 2 (Continued)

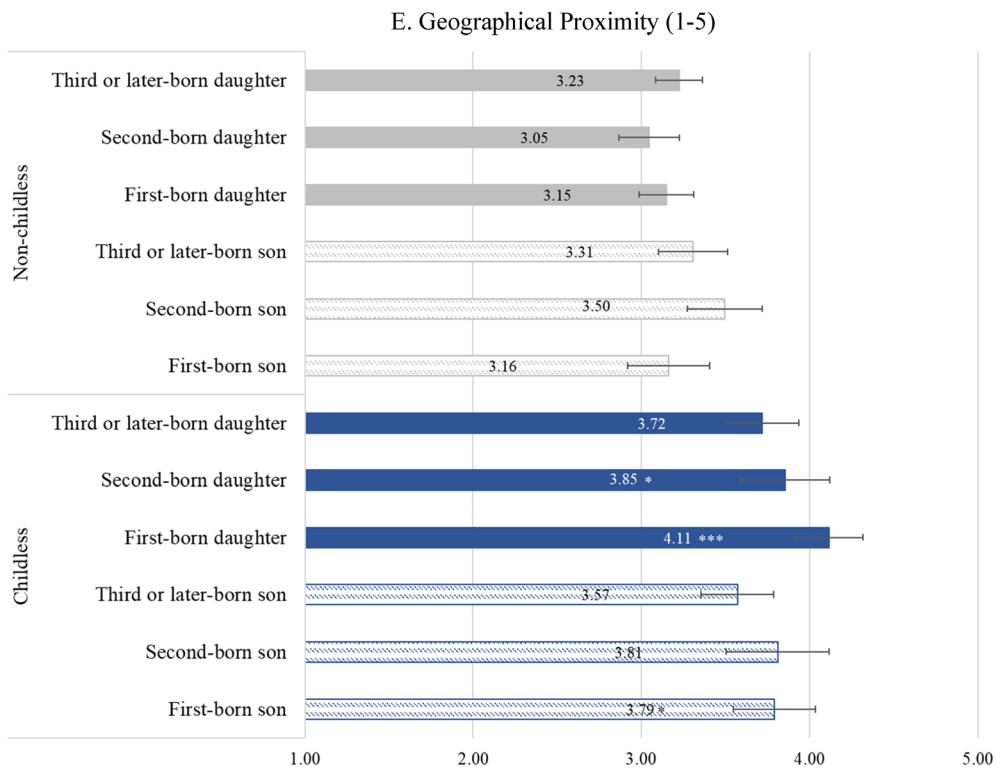


FIGURE 2 (Continued)

traditional gendered filial norms among non-childless siblings, primarily by providing greater financial contributions compared to their non-childless siblings ($p < .10$), childless first-born sons stood out by providing various forms of support, at a level similar to those provided by other childless siblings.

DISCUSSION AND CONCLUSION

This brief report explored the role of childless middle-aged and older adults in upward intergenerational support in the context of Singapore. We paid attention to sibling positioning and whether childless individuals deviated from or adhered to the patrilineal filial practices of supporting their aging parents. Several significant findings emerged from the empirical investigation. First, it was evident that childless individuals contributed significantly to their parents compared to the non-childless, particularly with regard to time-based support, such as instrumental support, visiting, and contacting, as well as remaining geographically proximate to older parents. This was plausibly explained by the time availability perspective, whereby adult children with fewer competing responsibilities assumed a more significant caregiving role for their aging parents (Grigoryeva, 2017; Pillemer & Suitor, 2014). Although non-childless individuals generally exhibited greater emotional closeness with their parents than their childless counterparts, the emotional bond did not correspond to their level of support for older parents, which contrasts the significance of parent-child emotional closeness in predicting the level of upward support in the existing literature (Pillemer & Suitor, 2014).

Second, consistent with patrilineal practices in the Confucian system that lead to gendered filial expectations (Muyskens, 2020; Silverstein, 2021), our findings revealed that non-childless first-born sons continued to play a primary role in supporting aging parents by contributing the highest amount of financial transfers. However, these gendered patrilineal practices were less pronounced among childless individuals, as they provided substantial intergenerational support to parents, including financial assistance, regardless of sibling positioning (i.e., birth order and gender). Notably, results indicated that childless first-born daughters provided crucial support in all forms of intergenerational support, especially time-based support, compared to childless individuals in other sibling positions.

Our study makes several significant contributions to the literature. First, it focused on the phenomenon of childlessness in a rapidly aging Asian country characterised by ultra-low fertility rates and high childlessness rates as well as Confucian values. By going beyond the perspective that views later-life childlessness solely as a societal concern (Verdery et al., 2019), we examined the role of childless individuals as support providers for their aging parents, which is relatively underexplored in the literature. Furthermore, the study investigated the under-explored connection between childlessness and sibling position, which is increasingly relevant within the context of the Asian patrilineal system. In addition, the study introduced some improvements in data by analysing a nationwide survey that oversampled childless individuals and provided detailed information about sibship characteristics.

Our findings suggest that exploring childlessness is crucial when discussing upward intergenerational support. In contrast to past evidence indicating that adult daughters were more likely than adult sons to provide financial support to their older parents in Singapore (Gubhaju et al., 2018), our findings demonstrate that non-childless first-born sons in middle and old age still tended to adhere to patrilineal practices of upward intergenerational support than other non-childless siblings, particularly with regards to financial support. However, we found a potential role of childless women in financially supporting aging parents, as childless first-born daughters transferred comparable amounts of monetary transfers to their aging parents as non-childless first-born sons.

The findings imply a gradual erosion of patrilineal family systems in Singapore, with childless individuals at least partially contributing to this shift in intergenerational support dynamics. The trend may be further influenced by the increasing number of sonless families and changing sex ratios in family compositions across Asia (Allendorf, 2020). Consequently, the traditional patrilineal notion of son centrality in old-age care may no longer be relevant, potentially impacting parents' perceptions and reliance on their male children for old-age support. The role of childless individuals in upward intergenerational support is expected to be particularly prominent in Asian countries with high childlessness rates, such as Hong Kong, Japan, and South Korea, highlighting the need for more research in this area. Nevertheless, it is worth noting that our findings are based on the unique context of Singapore, a modern city state where many Singaporeans live in relatively close proximity to their family members (Mehta, 2007). It may be interesting for future research to explore the extent to which similar effects might be observed in other settings where there are urban and rural differences and where family members may be more geographically distant.

Singapore's rapid demographic and societal transformations, coupled with its continued emphasis on familism in old-age support, have raised concerns regarding whether the younger generation has the capacity to provide adequate support to their aging parents (Malhotra et al., 2019). Although childless individuals are stereotypically viewed from an alarmist perspective (e.g., being selfish, socially isolated, or burdensome to future welfare systems), one positive aspect highlighted by our evidence is the active involvement of childless individuals in caring for their aging parents. This aligns with previous findings from European countries (Pesando, 2019). Our results imply that childless middle-aged and older individuals in Singapore may play a significant role in maintaining filial piety and intergenerational solidarity, at least for the current generation.

Having said that, it is unclear whether this support is given voluntarily or involuntarily by childless individuals. On the one hand, individuals may compensate for the absence of extensive family networks by engaging more intensively in social interactions with their existing family members. On the other hand, childless individuals may not be entirely willing to take a lion's share of parental care but have to do it due to circumstances. Although we do not have a precise number of childless individuals whose marriage was affected by caregiving responsibilities, some studies indicated that the burden of care for aging parents primarily fell on unmarried childless women (Ang et al., 2022; Hingorani, 2019).

Despite various caregiving policies in Singapore aimed at supporting older individuals in communities, the findings from this study highlight that the responsibility of caring for older parents was disproportionately shouldered by childless adults. The Foreign Maid Scheme subsidises qualified families to hire foreign domestic workers for the care of their frail elderly family members, and Singapore has policies related to family care leave. However, the implementation and execution of these policies by family caregivers remain uncertain (Mehta & Leng, 2017). This study emphasises the unequal burden on children in providing eldercare at home, underlining the importance of comprehensive policies that address the specific needs of family caregivers of older persons.

Limitations

This brief report has several limitations. First, due to data limitations, we were unable to examine the specific dynamics *within* families among siblings. In other words, we could not compare the extent of upward intergenerational support between childless respondents and their own siblings from the same family. Second, we did not examine how the gender of parents and the gender of childless individuals interact due to our small sample size, despite the importance of both the gender of parents and adult children in intergenerational support (Grigoryeva, 2017). Future studies could explore this issue to gain a more comprehensive understanding.

Third, even after controlling for demographic and socioeconomic characteristics, the issue of selection into childlessness, particularly through marriage, may persist. In other words, childless individuals burdened with significant caregiving responsibilities for their parents might have been less likely to marry. Assuming that married individuals may possess more resources but less time, possibly leading to reduced time-based exchanges with their parents (for details, see Sarkisian & Gerstel, 2008), the childless' greater support to older parents, compared to the non-childless, could be more influenced by marital status than childlessness. However, our heterogeneity analysis by marital status revealed that childlessness was a significant factor in providing substantial support to older parents, for both married and unmarried individuals (results available upon request). Specifically, childless individuals, regardless of marital status, visited their parents more frequently than the non-childless. Even among unmarried individuals, childless individuals provided not only more time-based support but also financial support than the non-childless. Thus, in our analysis, marital status did not play as much of a confounding factor. Nonetheless, we urge future research to explore different pathways to childlessness and their association with upward intergenerational support.

Relatedly, some of our outcome variables, such as financial and instrumental support, considered contributions from both respondents and their spouses, which might have overestimated the support of married individuals and underestimate that of childless individuals—who were mostly unmarried. Nevertheless, this suggests that the actual differences in upward support between childless and non-childless respondents might be even more pronounced than reported.

Fourth, our data do not include information about the gender and birth order of deceased siblings, as well as the timing of their death. This might have obscured sibling positioning, the gender composition of sibship, and the proportion of childless siblings among living siblings. However, even when we restricted our sample to respondents without any deceased siblings in a

sensitivity analysis, the overall findings remained consistent. This suggests that deceased siblings were evenly distributed across different sibling positioning and there was no systematic pattern that could have biased our estimates.

Fifth, distinguishing between upward and downward transfers within co-resident cases can be very challenging (Hermalin, 1999). Coresidence between adult children and aging parents tends to mutually benefit both parties, especially in Singapore where property prices are among the world's highest. Having said that, intergenerational coresidence is typically associated with more benefits to aging parents in Singapore and other Asian societies due to upward instrumental support which is deeply ingrained in their cultural norms of filial piety (Gubhaju et al., 2018). The tendency of childless individuals to live with or in close proximity to their parents, even when they do not benefit from grandchild care support, might suggest that childless individuals in Singapore could potentially provide more support to their parents rather than receiving it.

Lastly, we assigned the highest value for co-resident children in associational support variables, as the variables displayed missing values for coresidence with their parents. However, concerns may arise regarding the possibility that childless individuals have a higher likelihood of co-residing with their parents compared to the non-childless, potentially overestimating the impact of childlessness on associational support in our analysis. Following the common approach in the literature (Bao, 2022), we conducted robustness tests by restricting our sample to non-co-resident individuals to address the potential overestimation of the impact of childlessness. Our analysis findings remained robust; childless individuals visited their parents significantly more often than non-childless individuals, even after excluding co-resident cases (not shown). Although this adjustment did not result in major changes to the coefficients, we acknowledge that the measure is not perfect and encourage future studies focusing on associational support for co-resident children, as the level of contact for coresidence with parents represents a qualitatively unique type of arrangement.

Conclusion

This brief report has highlighted the crucial role of childless middle-aged and older adults in supporting their even older parents in ways that challenge Asia's traditional patrilineal expectations. Our empirical findings have implications for understanding the complexities of childlessness in the context of ultra-low fertility rates, rapid population aging, and state expansion of support provision for older persons. The declining sibship size may impose greater burdens on future childless individuals in terms of providing support for their own parents. However, the improved situation for Asia's older populations, characterised by enhanced health, greater wealth, and increased government welfare provision, may potentially mitigate the need for upward intergenerational support in the future. Consequently, policymakers must conscientiously consider the potential challenges and opportunities that lie ahead for childless individuals when designing sustainable old-age support to address the demands of an aging society.

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CONFLICT OF INTEREST STATEMENT

The author declares no conflicts of interest.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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