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The effects of SES, social support, and resilience on older adults' well-being during COVID-19: Evidence from Singapore

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ABSTRACT

The COVID-19 pandemic has rendered visible many socioeconomic inequalities and the lengthy period of disruption to everyday life had disproportionate effects on the most vulnerable groups in Singapore and across the world. Utilizing data from the Singapore Life Panel ® (SLP) collected in September 2021, this study examined a sample of 6667 older adults to assess the effects of socioeconomic status (SES) on well-being, and the mechanisms through which social support and resilience may mediate its influence. Overall, our results suggest significant direct and indirect effects of SES on well-being and provide evidence for the pivotal role that social support plays in building resilience and well-being. Affluent socioeconomic backgrounds do not intrinsically build resilience; instead, it is through the access to social resources, which SES affords and facilitates, that resilience is developed, and well-being is safeguarded. We argue that Singapore's policy response to COVID-19 has yet to fully leverage on social resources and develop a social infrastructure that can buffer the negative impacts of prolonged crises on the most vulnerable groups.

1. Introduction

The COVID-19 pandemic has rendered visible many socioeconomic inequalities and the lengthy period of disruption to everyday life had disproportionate effects on the most vulnerable groups in Singapore and across the world. Mainstream news outlets in Singapore have shed light on the precarious conditions and challenges faced by socioeconomically disadvantaged groups during the pandemic; namely, lower-income families struggling with insecure employment, housing, and childcare (Lee and Yeo, 2020; Yip, 2020); lower-skilled and middle-aged workers with little to no savings (Ng and Meah, 2021; Subhani and Tan, 2021); and older adults who have experienced significant declines in health and well-being as a result of the pandemic (Menon, 2021). These stories have illustrated rising inequalities across many socioeconomic indicators, including wage, housing type, gender, and digital access and literacy (Ng and Meah, 2021).

On a global scale, older adults are at higher risk of adverse COVID-19 health outcomes, including increased severity and mortality (Marin et al., 2021). While older adults are a heterogeneous group with different experiences, resources, and approaches to coping with the pandemic, it is important to recognize that some older adults may have fared much worse due to pre-existing vulnerabilities, including low socioeconomic status (SES) and health conditions (Whitehead and Torossian, 2021). SES has been shown to be positively associated with health and well-being among older adults (Allen et al., 2017; Pinquart and Sörensen, 2000b; Read et al., 2016). Recent studies aimed at assessing the impacts of the pandemic over the past two years have similarly illustrated that socioeconomically disadvantaged older adults were more likely to experience adverse mental and physical health outcomes, and declines in overall well-being (Chung et al., 2021; Sams et al., 2021; Sasaki et al., 2021). That said, we do not yet have an effective roadmap for post-pandemic recovery and reconstruction that addresses the holistic needs of our most vulnerable older adults. In the transition towards an endemic COVID-19, building up the resilience of older adults will be key in ensuring their well-being. This will involve identifying the various risk factors and protective resources necessary to reduce the SES divide in COVID-19 outcomes.

As such, the aims of this study are two-fold. Firstly, to examine the extent to which SES has shaped well-being among older adults in Singapore during the COVID-19 pandemic. Secondly, to identify and assess potential pathways through which older adults with low SES can benefit from greater levels of well-being in the post-COVID-19 era. This study ultimately highlights the importance of social support and resilience which were found to bolster the well-being of older adult Singaporeans with lower SES during the pandemic. As we continue to adapt to living with an endemic COVID-19, we propose a set of norms and strategies that will not entrench inequalities but advance the needs of the most vulnerable older adults in Singapore.

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2. Singapore's COVID-19 pandemic response

When COVID-19 was first declared a public health emergency in January 2020, the Singapore government responded swiftly with the establishment of the COVID-19 Multi-Ministry Task Force (MTF) and the implementation of precautionary and risk mitigation measures to contain the spread of the virus. Singapore instituted a 'Circuit Breaker' (similar to lockdowns overseas) from 7 April 2020 to 1 June 2020 and successfully managed the initial wave of COVID-19 cases that largely arose from migrant workers' dormitories.

After Singapore exited the 'Circuit Breaker' in June 2020, the COVID-19 situation in Singapore appeared fairly stable and the government began the gradual relaxation of measures to re-open Singapore. However, the situation took a turn for the worse from May 2021 onwards, where there was a spike in locally transmitted and unlinked cases, as well as the emergence of several COVID-19 clusters in the community. Following the stabilisation in COVID-19 cases, Singapore began preparing for the endemic COVID-19 phase and transition towards a COVID-19 resilient nation from August 2021 onwards.

Singapore's pandemic response has been hailed internationally as a successful model framework (Tan et al., 2021). In terms of vaccination rates, Singapore boasts one of the highest vaccination rates internationally of 91.47% as of 29 November 2022 (Ritchie et al., 2020), as well as a fairly low total deaths to date of 1708, as of 15 December 2022 (World Health Organization 2022). In comparison with neighbouring Southeast Asian countries, Singapore fares better in terms of higher vaccination rates, lower total death count and lower case fatality rate, despite having one of the highest COVID-19 cases per million people (Ritchie et al., 2020).

Nevertheless, since the start of the pandemic, older adults in Singapore experienced significant declines and fluctuations in overall well-being that were largely attributed to various restrictions to social and economic activities; concerns about COVID-19 infection and mortality; and concerns about immediate and long-term health and economic status (Ngu et al., 2022; Tan et al., 2022). Based on longitudinal trends captured by the Centre for Research on Successful Ageing (ROSA), older adults' overall life satisfaction has rebounded but not quite to pre-pandemic levels (Tan et al., 2022). Moreover, a study conducted by the Institute of Policy Studies (IPS) found that while the majority of Singaporean respondents have been able to adapt and cope reasonably well to living with COVID-19, many remained concerned about their financial and psychological well-being (Mathews et al., 2021). For this reason, it is important to further our investigation into the factors that promote resilience and well-being among older adults in the endemic.

3. COVID-19, older adult well-being, and socioeconomic inequalities

The COVID-19 pandemic has exposed and exacerbated pre-existing socioeconomic inequalities, disproportionately impacting individuals with lower socioeconomic status (SES) both nationally and globally. At the global scale, the economic impact of COVID-19 has led to the first rise in extreme global poverty since the 1997 Asian Financial Crisis, and the largest increase since 1990 (United Nations, 2022). Researchers have also estimated that an additional 120 million years were spent in poverty as a result of the pandemic (Ferreira et al., 2021). Studies across various countries have found adverse economic outcomes of the pandemic to disproportionally impact vulnerable groups, amplifying existing inequalities (Perry et al., 2021; Witteveen, 2020; Clark et al., 2021). For instance, on the economic front, individuals with low education were at a greater risk of job loss than workers with higher education during the pandemic (Baylis et al., 2022). Widening disparities in the social lives of adults have also been reported. In the United Kingdom, economically vulnerable individuals were found to have weaker social networks, were lonelier, and suffered from poorer mental health during the pandemic (Jaspal and Breakwell, 2022). Locally, Singapore has also ob-

served similar trends with the most vulnerable groups facing the brunt of the pandemic's toll. Households in the bottom 10% income group saw the largest decline (6.1%) in real income during the pandemic; comparatively, the top 90% of households only experienced a real income decline between 1.4% -3.2% (SingStat 2020). Blue-collar workers experienced higher rates of unemployment during Singapore's lockdown owing to a lack of demand for services and the inability to work remotely (Today Online 2020). Thus, a cascade of evidence suggests an "SES-gradient in economic and health outcomes" related to and worsened by the pandemic (Woo, 2020). Given that SES shapes health and well-being at all stages of life, and that older adults and lower-income groups have been the hardest hit by COVID-19, it is important to further examine the relationship between SES and well-being among older adults at this extraordinarily important juncture, where we are tasked to draw a roadmap for post-pandemic recovery and make sense of a new 'endemic' normal (Allen et al., 2017; Pinquart and Sörensen, 2000b; Read et al., 2016).

The fundamental cause theory put forth by Link and Phelan (Link and Phelan, 1995) lays important groundwork for the present study because it not only links socioeconomic differentials to health disparities and but also advances our understanding of the potential resources that influence health and well-being. Based on the theory, it is expected that low SES individuals will exhibit lower health status and higher mortality due to lower access to resources such as income, power, and social ties. In the section below, we review several bodies of literature to examine how SES differentials shape older adults' well-being in Singapore vis-à-vis other contexts, as well as identify key protective resources that can potentially foster greater well-being for older adults in the periods of post-pandemic recovery and endemic preparedness. Many of the studies reviewed below were cross-sectional in nature, apart from three longitudinal (repeated cross-sectional) studies that captured short-term changes in health and well-being outcomes during the COVID-19 pandemic (O'Connor et al., 2021; Zaninotto et al., 2022; Macdonald and Hülür, 2021).

Pre-pandemic studies conducted in Singapore have revealed that individual and area-level SES are strongly linked to health and well-being outcomes among older adults. Hong and Han (Hong and Han, 2014), for example, found that life satisfaction of older adult Singaporeans was positively shaped by their financial assets, and that higher life satisfaction was associated with lower depression and better physical health. Another study conducted by Wee et al. (Wee et al., 2014) found that area-level SES (after controlling for individual SES) was independently associated with depression among older adults residing in integrated public housing (Housing Development Board or HDB) precincts in Singapore. Community-dwelling older adults living in public rental housing (lower area SES) were more likely than owner-occupied public housing (higher area SES) to have a lifetime prevalence of depression.

Over the course of the pandemic, research in Singapore has continued to demonstrate strong linkages between SES and older adult health and well-being. A recent study conducted by IPS (Mathews et al., 2021), for instance, found that older adult Singaporeans living in smaller housing types (1-3 room HDB flats) were more likely to report higher stress and lower levels of psychological well-being as a result of the pandemic. Similarly, in terms of older adults' confidence in resuming various daily activities that were disrupted during the pandemic, ROSA found that SES was a significant factor (Ngu et al., 2022). Respondents with lower SES (i.e., living in smaller public housing types such as 1-3 room flats, and with primary to no education) were more likely to feel less confident in resuming activities, compared to their higher SES counterparts.

A review of the international literature illustrates similar associations between SES and older adult health and well-being during the pandemic. Studies of Chinese adults in Hong Kong (Chung et al., 2021; Chung et al., 2021) found that low SES individuals were more likely to report declines in mental and physical health and well-being, primarily as a result of concerns about COVID-19 infection and potential changes to economic status and livelihood (e.g., job loss/instability). Another

Hong Kong-based study (Wong et al., 2021) demonstrated that the perceptions toward the benefits and harms of the pandemic varied along socioeconomic lines. The study highlighted that low SES contributed to more negative perceptions of family well-being (relationships, physical and mental health) and family income. In other Asian contexts such as Japan and South Asia, low SES individuals experienced greater declines in physical health and well-being because of pandemic restrictions to social and economic activities (Kusuma et al., 2021; Sasaki et al., 2021). In the US and UK, older adults with lower SES and underlying health conditions were largely found to be at the greatest risk of poorer mental health outcomes, including psychological and emotional distress, and loneliness, due to the negative effects of the pandemic (Sams et al., 2021; O'Connor et al., 2021; Zaninotto et al., 2022).

Considering the robust association between SES and older adult health and well-being locally and globally, we additionally sought to identify key factors in the current literature that may mediate this relationship. One well-established mediating factor is social support. In accordance with the stress-buffering hypothesis (Cohen and Wills, 1985), we can expect that social resources may provide valuable protection from stressful life events such as the COVID-19 pandemic, specifically by building up the resilience reserves of older adults (Visaria et al., 2021). Current scholarship suggests the importance of social support for enabling older adults to remain anchored against the unpredictable waves of COVID-19 (Macdonald and Hülür, 2021). The sudden and prolonged social restrictions imposed by governments during the pandemic heightened feelings of loneliness and social isolation, particularly among older adults who were living alone (Kim and Jung, 2021; Sepúlveda-Loyola et al., 2020). Social support played a compensatory role in the lives of individuals with low psychological resilience. (Ng et al., 2014)) examined the mediating effect of social support on the relationship between SES and depressive symptoms and found that older adult respondents with lower SES and social support had a higher likelihood of depressive symptoms. (Li et al., 2021)) found that both social support and resilience were positively associated with mental health in a sample of 23,192 Chinese adults, but only high levels of social support were found to significantly buffer the mental health risks for those with low resilience.

Another important mediating factor that has been shown to effectively buffer the impact of social support on older adult health and well-being is resilience, which is described as the ability to cope with and return to a state of equilibrium following adversity. The "thriving through relationships" theoretical model put forth by (Feeney and Collins, 2015)) asserts that close social relationships support the growth and development of individuals in distinct life contexts. In times of adversity, friends and family are a source of strength support and (1) alleviate stress through emotional support and tangible aid, (2) assist in the development of strengths, (3) motivate and assist with facing adversity, and (4) help reframe how adversity is perceived. In doing so, social support facilitates the development of resilience and promotes well-being in the long term. Empirical support has validated the importance of resilience to older adult health and well-being, owing to strong independent and mediating effects towards reducing the SES burden on vulnerable populations. In several resilience-based studies exploring older adults' coping experiences and strategies during the initial weeks of the pandemic, it was found that adopting adaptive, emotion-focused coping behaviours contributed to more positive psychosocial well-being outcomes for older adults (Whitehead and Torossian, 2021; Fuller and Huseth-Zosel, 2021; Minahan et al., 2021). (Vannini et al., 2021) found that resilience enabled older adults to better cope with pandemic-related stress, and that higher resilience attenuated the negative effects of maladaptive coping behaviours such as self-blame. Another important study (Wu et al., 2021) examined differential vulnerability (measured by infection risk) and differential resilience (measured by mental health distress) by SES and demonstrated that lower SES individuals were less protected from pandemic-related adversity compared to their higher SES counterparts. Moreover, mediation analysis found that SES shaped
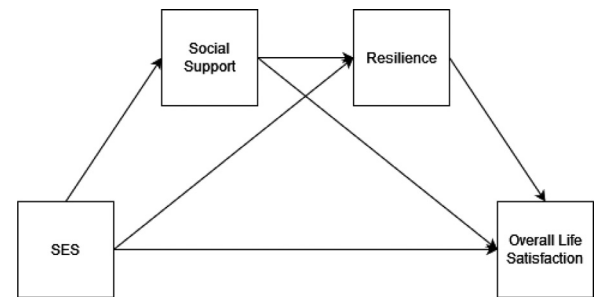

Fig. 1. Hypothesized model.

both vulnerability and resilience to the pandemic primarily through three main channels: daily sustenance, job stability and flexibility, and community-based support. Thus, we expect that resilience will be a critical factor in the conceptualisation and analysis of the present study.

Importantly, there is a growing body of research, particularly in Western and urbanised Asian countries, on the interplay between SES and health and well-being outcomes for older adults in the COVID-19 context. While the factors that may buffer the impact of low SES on COVID-19 outcomes have not been widely examined, there is emerging evidence to suggest that social support and resilience may play compensatory roles in the lives of older adults with lesser resources. In Singapore, to date, empirical research is lacking on two fronts. Firstly, the impact of SES on health and well-being outcomes among older adults during the pandemic. Secondly, the mechanisms through which well-being can be bolstered to reduce the SES divide in COVID-19 outcomes among older adults. Further research is needed to identify and assess both the risk factors and protective resources that can ultimately inform the development and implementation of effective, targeted interventions aimed at promoting the well-being of older adults during periods of prolonged crises. These are the major research gaps that the present study aims to address.

4. The present study

The overall objective of this study was to (1) examine how socioeconomic inequalities shape older adults' well-being, and to (2) identify the extent to which social support and resilience effectively mediate the impact of SES on well-being among older adults during the pandemic.

Specifically, we hypothesize that:

H1: SES will be positively associated with overall life satisfaction.
H2: SES will be positively associated with resilience.
H3: Social support mediates the relationship between SES and resilience. Specifically, older adults with higher SES are more likely to report higher levels of social support, which would in turn lead to higher levels of resilience.
H4: Resilience mediates the relationship between social support and overall life satisfaction. Specifically, social support increases resilience, and in turn promotes overall life satisfaction.

The hypothesized conceptual model is presented in Fig. 1.

5. Materials and methods

5.1. Study sample

This study utilizes data from the Singapore Life Panel® (SLP) collected in September 2021. The SLP is a monthly panel survey of Singaporeans aged 56-75 (in 2021) and their spouses that has been conducted since July 2015. At baseline, over 11,500 respondents were successfully recruited between May-July 2015 via a population-representative sampling frame from the Singapore Department of Statistics (Vaithianathan et al., 2021). Monthly surveys are administered on-

line, supplemented by phone and in-person outreach when necessary, allowing respondents to participate regardless of COVID-19 restrictions.

After 5 years, the panel now stands at 8376, after accounting for attrition and the removal of non-active panel members (defined as respondents who did not participate in any survey for the last 12 consecutive months). In September 2021, 7027 respondents participated in the survey, corresponding to a response rate of 83.9%. The inclusion criterion for this study was an age between 56 and 75. This resulted in a final sample of 6667 respondents.

5.2. Measures

5.2.1. Socioeconomic status

Socioeconomic status (SES) was measured using respondents' total wealth. Wealth was selected as a proxy measure for SES as income alone may not adequately reflect the SES of older adults (Braveman et al., 2005; Zimmer and Amornsirisomboon, 2001). As income fluctuates over the life course and substantially declines in later life, the use of income as a proxy measure may inflate the SES of respondents who were employed during the study period (Oakes and Andrade, 2017). Wealth may provide a better overall assessment of our respondents' SES than income alone because it considers total household assets and savings accumulated over their lifetime. Total wealth includes the respondent and their spouse's savings, pension savings balance, pension pay-outs, investments, life insurance policies, welfare assistance, pension, property, businesses, vehicles, and any other assets. Respondents are stratified into 10 percentile classes based on their total wealth.

5.2.2. Social support

Social support was measured using 6 items from the Medical Outcomes Study Social Support Survey Instrument (Sherbourne and Stewart, 1991). Respondents rated the extent to which the following kinds of support are available to them if they need it: "Someone you can count on to listen to you when you need to talk", "Someone to confide in or talk to about yourself or your problems", "Someone you can count on for help in a time of need", "Someone to show you love and affection", "Someone to prepare your meals if you were unable to do it", "Someone to help with daily chores if you were sick", and "Someone to help you if you were confined to bed". Respondents rated these statements from 1-"None of the time", to 5- "All of the time". All items were then summed to create a social support score where higher scores represent greater levels of social support. The Cronbach's alpha of 0. 9649 suggests good internal consistency.

5.2.3. Resilience

Respondents rated the extent to which they agree or disagree with the following 7 statements related to resilience: "It does not take me long to recover from a stressful event", "Regardless of what happens to me, I believe I can control my reaction to it", "I believe I can grow in positive ways by dealing with difficult situations", "I quickly get over and recover from significant life difficulties", "I tend to recover quickly after hard times", "I have a hard time making it through stressful events", and "I usually come through difficult times with little trouble". Items were scaled from 1 "Strongly disagree" to 6 "Strongly agree". The items on resilience were adapted from a few scales including Smith and colleagues' brief resilience scale (Smith et al., 2008) and Sinclair and Wallston's brief resilience coping scale (Sinclair and Wallston, 2004). Negatively phrased statements were reverse coded before all items were summed, such that higher scores present higher levels of resilience. The Cronbach's alpha of 0. 8956 suggests good internal consistency.

5.2.4. Overall life satisfaction

To assess well-being, respondents were asked the following: "Taking all things together, how satisfied are you with your life as a whole these days?". Respondents responded to this question on a 5-point Likert Scale, from 1 "Very dissatisfied" to 5 "Very satisfied".

Table 1
Respondents' characteristics and study variables

	Mean (range, SD)	n(%)
Gender (n = 6667)		
Male		3158 (47.4)
Female		3509 (52.6)
Employment Status (n = 6663)		
Employed		3490 (52.4)
Unemployed		3173 (47.6)
Education status (n = 6610)		
Primary or lower		1471 (22.2)
Secondary		2741 (41.5)
Secondary with tertiary		1365 (20.7)
Degree and above		1033 (15.6)
Age (n = 6666)	65.8 (20, 5.41)	
Socioeconomic Status (SES) (n = 6384)		
1st- 10th percentile		585 (9.2)
11st-20th percentile		620 (9.7)
21st-30th percentile		634 (9.9)
31st-40th percentile		625 (9.8)
41st-50th percentile		634 (9.9)
51st-60th percentile		648 (10.2)
61st-70th percentile		647 (10.1)
71st-80th percentile		651 (10.2)
81st-90th percentile		666 (10.4)
91st-100th percentile		674 (10.6)
Social Support (n = 6641)	25.4 (28, 7.02)	
Resilience (n = 6542)	29.3 (35, 5.66)	

5.3. Analyses

5.3.1. Path Analysis

Building on fundamental cause theory (Link and Phelan, 1995) and the "thriving through relationships" theoretical framework (Feeney and Collins, 2015), this study employs path analysis using Mplus 8.8 (Muthén and Muthén, 2017) to identify the direct and indirect effect of SES on life satisfaction. While cross-sectional data utilized in this model precludes the assumption of causality, the causal and theoretical relationships between the hypothesized paths have been well-established in literature. As an extension of multiple regression, path analysis allows for the simultaneous examination of direct and indirect effects of multiple variables in the model. The Maximum Likelihood estimator was used in our analysis and beta coefficients were examined to assess the significant direct and indirect pathways. Several measures of model fit are assessed to determine goodness of fit, including the χ^2 fit, Comparative Fit Index (CFI; >0.90), Root Mean Square Error of Approximation (RMSEA; <0.08), Standardized Root Mean Square Residual (SRMSR; <0.08) and Tucker and Lewis' non-normed fit index (TLI;>0.90) (Kline, 2010).

6. Results

6.1. Descriptive statistics

The sample descriptive and bivariate correlations are reported in Table 1. There were approximately equally proportions of male and female respondents, likewise for employed and unemployed respondents. In terms of education status, the largest proportion of respondents had secondary education (41.5%), followed by primary education (22.2%), secondary with tertiary education (20.7%), and degree and above (15.6%). Respondents were 65.8 years old on average, with a standard deviation of 5.41. There is approximately 10% of respondents in each SES percentile. The mean scores of social support and resilience are 25.4 (out of a total score of 35) and 29.3 (out of a total score of 35), and the standard deviations are 7.02 and 5.66 respectively.

Table 2 presents bivariate correlations for variables of interest. For bivariate correlations with wealth percentile and life satisfaction, Kendall's tau-b was used, while Pearson's correlation was used for the rest. Most variables were moderately correlated, except for the relation-

Table 2
Bivariate correlations

	SES[a]	Life satisfaction [a]	Social support [b]	Resilience[b]
SES	—			
Life satisfaction	0.1314***	—		
Social support	0.1393***	0.2728***	—	
Resilience	0.0893***	0.3080***	0.3995***	—

[a] Bivariate associations with ordinal variables were computed using Kendall's tau-b
[b] Bivariate associations with continuous variables were computed using Pearson's R*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$,

Table 3
Bootstrap analysis of indirect effects

Indirect effect	Unstandardized estimates	Standard Error	Standardized estimates	Confidence Interval (95%)
SES → SS → LIFESAT	0.015	0.001	0.043	(0.012, 0.018)
SES → SS → RESIL → LIFESAT	0.009	0.001	0.027	(0.008, 0.011)
SS → RESIL → LIFESAT	0.019	0.001	0.129	(0.017, 0.021)

Note: SES = Socioeconomic status; SS = Social Support; RESIL = Resilience; LIFESAT = Life Satisfaction.
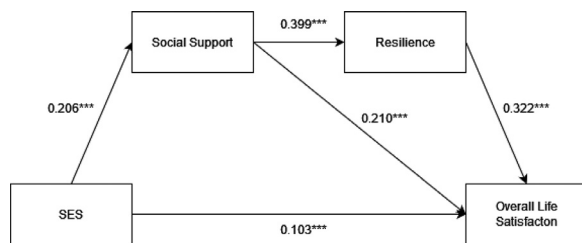

Fig. 2. Results of path model with standardized estimates. *$p < 0.05$, **$p < 0.01$, ***$p < 0.01$.

Table 4
Proportion of direct and indirect effect of independent variables on resilience and overall well-being

Direct and Indirect effect	Standardized estimates	Percentage
Total effect from SS to LIFESAT	0.339	
Direct effect	0.210	61.9%
Indirect effect		
SS → RESIL → LIFESAT	0.129	38.1%
Total effect from SES to LIFESAT	0.173	
Direct effect	0.070	54.2%
Indirect effect		
SES → SS → LIFESAT	0.043	24.9%
SES → SS → RESIL → LIFESAT	0.027	15.6%

Note: SES = Socioeconomic status; SS = Social Support; RESIL = Resilience; LIFESAT = Life Satisfaction.

ship between wealth and the four variables, which were only weakly correlated. All correlations were significant at the 0.001 level.

The hypothesized model was just-identified, with perfect indices and the model fit could not be assessed. To revise the model, the non-significant direct path between SES and resilience was removed. The revised model fits the data well: χ^2 (1)=13.3, $p < 0.001$; RMSEA = 0.044; CFI = 0.996; TLI = 0.974 and SRMR = 0.024. 22.7% of the total variance in life satisfaction was explained by the model. All pathways were significant (see Fig. 2). First, SES (β=0.103, $p < 0.001$), social support (β=0.210, $p < 0.001$), and resilience (β=0.322, $p < 0.001$) had a direct positive effect on life satisfaction. In other words, greater SES, higher levels of social support, and greater resilience were associated with higher levels of life satisfaction. Second, social support (β=0.399, $p < 0.001$) had a positive effect on resilience. Third, SES had a positive effect on social support (β=0.206, $p < 0.001$). To assess the mediation effects, the final model was bootstrapped 1000 times to improve the accuracy of the point estimates and confidence intervals (MacKinnon, 2008). All pathways were significant (see Table 3). First, the standardized total indirect effect from SES to life satisfaction was 0.070, $p < 0.001$. The indirect effects of SES on life satisfaction account for 45.8% of the total effects (see Table 4). Secondly, the standardized total indirect effect of social support on life satisfaction was 0.129, $p < 0.001$. The indirect effect of social support through resilience account for 38.1% of its total effects on life satisfaction.

7. Discussion and conclusion

This study examined the effects of SES on older adult well-being, and the mechanisms through which social support and resilience may mediate its influence. Our results suggest significant direct and indirect effects of SES on well-being and supported most of our hypotheses. First,

consistent with the fundamental cause theory (Link and Phelan, 1995), our results have identified SES to have a significant positive effect on well-being (H1) equally through both direct and indirect mechanisms. Second, while SES was positively associated with resilience (H2), its effects were not significant and was removed from our revised model. Instead, the influence of SES on resilience was fully mediated by social support (H3). Third, social support had both significant direct and indirect effects on well-being through resilience, supporting H4.

Overall, our results provide evidence for the pivotal role social support plays in the relationship between SES and the well-being of older adults. As a fundamental need, social belonging is essential to individual well-being (Baumeister and Leary, 1995). However, during the course of the pandemic, the opportunities to maintain interactions with others in the community were hindered by the social restrictions intended to reduce the spread of the virus. Instead, individuals were mostly limited to non-physical interactions through the digital space. Particularly for older adults, learning how to adopt these new modes of technology can be especially challenging for those with lower education and those who lack the support of others (Lee et al., 2019; Tsai et al., 2017). Further, the accessibility of such technologies is further stratified along socioeconomic lines. (Silver, 2014)) found that individuals who were from higher childhood SES backgrounds were more likely to be internet users in older adulthood. Preceding utilization, ownership of technology is also closely associated with SES, with those of lower SES being less able to afford them (Yoon et al., 2020).

Importantly, our results of the full mediation of social support between SES and resilience indicates that affluent socio-economic backgrounds do not intrinsically build resilience; instead, it is through the ac-

cess to social resources, which SES affords and facilitates, that resilience is developed. In line with the "thriving through relationships" framework (Feeney and Collins, 2015) and findings from previous scholarship on resilience, social capital is identified as a pivotal resource that builds resiliency (Feeney and Collins, 2015; Fergus and Zimmerman, 2005; Masten and Obradovic, 2008; Southwick et al., 2016; Gale et al., 2011). (Masten and Obradovic, 2008) propose that resilience is developed through social capital's regulatory and protective role, which facilitates the development of skills associated with resilience, and augments the adaptive capacity of individuals to respond to challenges. Additionally, within a supportive social environment, individuals are able to "master challenges and stresses… [which] have an 'inoculating' or 'steeling' effect, which can help promote resilience" (Southwick et al., 2016). Studies have also shown that above and beyond socioeconomic class, older adults within cohesive neighbourhoods experienced higher levels of mental well-being (Gale et al., 2011). In a cross-cultural longitudinal study examining the influence of socioeconomic circumstances on resilience, (Phillips et al., 2016)) found contrary associations between social engagement and resilience across countries of varying affluence. Among less affluent countries, social engagement was strongly associated with resilience, whereas in more affluent countries, the relationship between the two factors was reversed and insignificant. In addition, the authors found little variation in resilience levels across socioeconomic groups, leading the authors to postulate that social support has the potential to alleviate the impact of economic disadvantage, and that it is through the interplay of social and environmental factors that resilience is developed.

Since independence, Singapore's approach towards health and social welfare policies has traditionally espoused an ideology of self-reliance (Lim, 2003). Though government subsidies and initiatives are available to the vulnerable and disadvantaged, the individual is encouraged to assume a high level of personal responsibility for their own welfare and to invest in their own social development (Ng, 2015). When self-reliance is unattainable, the family is expected to be the first line of support, followed by the community and government (Lim, 2007). In practice, subsidised services and programmes for older adults often require means-testing to verify that only older adults whose dependents are unable to bear part or all of the cost of care services are eligible for assistance (Teo et al., 2006). This health and social welfare framework underpinned top-down provisions of temporary support schemes introduced during the pandemic, which were aimed at cushioning the adverse (1) financial, (2) health, and (3) psychosocial impacts of COVID-19 on lower-income groups.

Firstly, in terms of financial support during the pandemic, the government released a series of expanded budgets within a span of a few months, a first in Singapore's history (Ministry of Finance 2020a). The government dispersed one-off, means-tested pay-outs, with additional support in the form of grocery vouchers and temporary relief funds for low-income individuals and households whose livelihoods were lost or affected, respectively. In addition, older adults received additional support such as top-ups to their Passion Card (a membership card that can be used to offset living costs) (Ministry of Finance 2020b), as well as additional one-off pay-outs (Ministry of Social and Family Development 2022a). However, with the lowering of the Disease Outbreak Response System Condition (DORSCON) level in April 2022 and an extensive easing of community and border measures, the government announced the cessation of these temporary relief schemes by the end of the year 2022 (Ministry of Social and Family Development 2022b).

Secondly, to address population health challenges that emerged during the pandemic, the government enacted various measures to encourage its population to seek medical attention for respiratory illnesses and ensure that these services would be equally available to all (Today Online, 2020). Approximately 900 clinics under the Public Healthcare Preparedness Clinic (PHPC) scheme were activated to provide subsidised healthcare services relating to COVID-19. Singapore citizens and permanent residents with respiratory illnesses could seek treatment at these clinics at a subsidised rate of $10 regardless of whether they were confirmed to be COVID-19 positive or not; older adults of the Pioneer (Singaporean citizens born before 1950) and Merdeka (Singapore citizens born between 1950 and 1959) generations were entitled to an even lower rate of $5 (Today Online, 2020). Other healthcare subsidies included free vaccinations, booster shots and Antigen Rapid Test kits to every household to help mitigate the cost of testing for COVID-19. However, as the COVID-19 situation stabilized in Singapore, the government gradually scaled back on COVID-19 healthcare subsidies, reverting to the pre-pandemic healthcare framework and only retaining some treatment coverage for individuals requiring hospital admission (Cheng, 2022).

And thirdly, in terms of psychosocial support, the government and grassroots partners expanded avenues of tele-support to reduce heightened levels of loneliness and social isolation among vulnerable groups during the pandemic. At the start of Singapore's 'Circuit Breaker' in April 2020, the government launched the National Care Hotline, a 24/7 hotline service manned by volunteers to offer emotional support to individuals feeling mentally distressed by the pandemic (Tai, 2020). Non-governmental organisations like Fei Yue and Silver Ribbon also joined in the efforts by opening online counselling portals (Tan and Kurohi, 2020). In addition, Adult Protective Services increased the number of check-ins via telephone and video calls and continued home visits for older adults deemed most vulnerable and socially isolated (Ministry of Social and Family Development 2022b). In the absence of sustained and meaningful social interactions in physical spaces, the proliferation of psychosocial support in digital spaces was an important step towards addressing health and social care gaps exacerbated by the pandemic, yet barriers to using and accessing digitized support, particularly among lower SES older adults, remain critical issues (Lee et al., 2019; Tsai et al., 2017; Yoon et al., 2020).

Government support was instrumental in shaping COVID-resilience in Singapore but given that SES inequalities have sharpened both locally and globally, it is necessary to question the adequacy of social welfare approaches. Singapore's policy response to COVID-19 has yet to fully leverage on social resources and develop a "social infrastructure" (Klinenberg, 2018) that can effectively mitigate the negative effects of COVID-19, particularly for the most vulnerable segments of society. In the context of the pandemic, prevalence rates of loneliness and social isolation were highest among older adults, and opportunities for older adults to strengthen social ties and make meaningful contributions to their communities were severely limited. Thus, a major policy implication related to pandemic recovery and endemic preparedness is ensuring that older adults remain socially integrated and supported in their communities. A growing scholarship suggests that older adults can be valuable assets to their communities (Cohen et al., 2016; Igarashi et al., 2022; Straughan and Tan, 2021) and that efforts to build social infrastructure have the potential to promote older adult well-being, both sustainably and holistically (Austin et al., 2005; Aw et al., 2020). Going forward, it is imperative that Singapore's pandemic response places greater emphasis on the importance of leveraging on social resources and on new ways of engaging older adults in the 'post-COVID-19' era.

Several limitations of this study must be acknowledged. First, due to the cross-sectional nature of the analysis, causal associations between the various factors cannot be inferred from our study. Future longitudinal analysis should be conducted to establish causality. Second, this study relies on self-reported wealth data which may be subject to measurement error due to the sensitive nature of such information. Third, this study focuses on a sample of older adults between the age of 56 to 76, limiting its generalizability to older adult population beyond this age group. Nonetheless, this study provides empirical support of the importance of social resources in improving the well-being outcomes of vulnerable groups.

In conclusion, we argue that what is largely lacking in Singapore's policy response to COVID-19 is the provision of social resources to reduce the SES divide in well-being among older adults. The government

has done measurably well in providing adequate provisions of financial and health support to mitigate the adverse effects of COVID-19 on lower-income groups, as well as expanding more avenues of psychosocial support to better address heightened levels of loneliness and social isolation among older adults during the pandemic. However, as the present study has highlighted, it is not so much access to financial resources but access to social resources that helps to build resilience and safeguard the well-being of older adults. A key implication for policymakers is that reimagining social infrastructure in Singapore is critical in reducing SES inequalities in COVID-19 outcomes. Future research should continue to explore how social support can be strengthened to advance healthier outcomes for older adult populations.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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