

The Impact of COVID-19 Government Policies and Socioeconomic Disparities on Older Adults in Singapore: A Narrative Review and Recommendations for Pandemic Preparedness

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ABSTRACT

Background: COVID-19 disparities exacerbated existing quality-of-life challenges for lower-income older adults. Using existing data and healthcare policy papers, our research questions were to explore: (1) the effectiveness of COVID-19 policy implementation; and (2) the overall issues faced by lower-income elderly throughout the COVID-19 period. **Methods:** We conducted a comprehensive literature review and analysis of secondary data sources published in PubMed Central and Google Scholar from 2020 to the present. We included qualitative and quantitative data from Singapore. Our analysis focused on investigating pandemic outcomes specific to lower-income elderly and the role of government policy in addressing these outcomes. When necessary, we supplemented our searches with grey literature documenting government policy and community responses. We anticipated that lower-income elderly would experience the greatest burden of COVID-19 disparities and that government policy should focus on reducing inequality post-pandemic. **Results:** Elderly Singaporeans of lower income were more vulnerable during the pandemic due to the restriction of crucial community services. Disparities in financial stability and mental health were greatest early in the pandemic (2020–2022), compounded by social isolation and job loss. Post-pandemic, some economic recovery has occurred, but permanent shifts toward telehealth have widened the digital divide. **Conclusions:** This study contributes to the field of research by drawing from existing literature to determine that lower income elderly faced more severe outcomes in multiple aspects during the pandemic, showing that they suffered to a greater extent from the pandemic. Further studies should look into the longitudinal mental and physical effects of the pandemic on the lower income elderly as well as track how, if any, government policies and community services are helping them adjust to the post pandemic realities such as the increased use of technology in essential services.

Keywords: Covid-19, older adults in Singapore, government policy, pandemic preparedness, active lifestyles, socioeconomic disparities, digital divide, necessity of community services, mental health

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INTRODUCTION

On March 11, 2020, the COVID-19 outbreak was declared by the World Health Organization (WHO) as a global pandemic (Cucinotta & Vanelli., 2020). As of 13 April 2024, there have been 704,753,890 cases worldwide in 231 countries. Over 221 million of the cases were in Asia, and a similar number of individuals currently experience or have previously experienced long-term health-related consequences of the COVID-19 global pandemic (Chen et al., 2022). The COVID-19 virus first arrived in Singapore on 23 January 2020 via an imported case of infection. By mid-April 2024, there were more than 3 million cases of COVID-19 recorded in Singapore (Chen et al., 2020). As the number of COVID-19 cases rose and more local clusters were discovered, the Multi-Ministry Taskforce announced shelter-in-place orders on 7 April 2020. The Taskforce implemented measures such as restricting business operations to essential services only, with the rest working from home (Thangayah, Tan & Lim., 2021). As the pandemic progressed, allied health services (e.g., private counseling and social work) were not categorized as essential services during the initial period of the circuit breaker. One severe impact of the COVID-19 pandemic was the economy shrinking by 5.8% in 2020.

COVID-19's Impact on Economic Inequalities in Older Adult Populations

The economic impact of COVID-19 exacerbated many existing inequalities faced by those from low socioeconomic backgrounds. More than 51 percent of households classified as earning less than \$3,000 lost more than half of their income during the COVID-19 period, and many of these individuals had lower levels of educational attainment (Yip et al., 2021). The economic disparities that widened during the COVID-19 pandemic disproportionately impacted older adults, who are more likely than the general population to have lower household income due to factors such as retirement (Philipson et al.; Tadai et al.). Globally, COVID-19 has had a significant impact on the delivery of care for those with chronic conditions, a large majority of whom are above 60 years old. In 2021, a World Health Organization (WHO) survey of 143 countries stated that services for chronic care and psychosocial support had been chronically compromised in at least 44% of the countries studied (WHO, 2021).

Government Response to COVID-19 and Impact for Older Adults

In Singapore, the workforce adjustment to support acute COVID-19 care resulted in health system strain and less optimal chronic care services (Yoon et al., 2022). To mitigate the immediate effects of COVID-19 on unemployment and financial hardship, the budgets provided wage support pegged at 25–75% of the first US\$3,369 (US\$1:S\$1.37) gross monthly salary and were made available until March 2021. Other schemes, such as the Workfare Special Payment, were also implemented to enable people to hold on to their jobs or provide income support for households (Yip et al., YEAR?). In terms of ensuring healthcare accessibility regardless of financial status, all citizens are automatically enrolled in government-run health insurance programs such as MediShield, a program designed to meet hospitalization costs for catastrophic illnesses through copayment (Yoon et al., 2021). To improve care continuity, inter-sector collaboration between the government and community organizations accelerated the adoption of telehealth services such as teleconsultation or tele-rehabilitation in the community (Yoon et al., 2022).

Purpose

Given that Singapore has an aging population, the segment of the population that is both elderly and of lower income will increase. Older adults with lower socioeconomic status were especially affected by the pandemic, giving rise to a significant public health concern in the future should there be another pandemic. More research is needed to understand the impact of COVID-19 on existing disparities this population faced, to make recommendations for current needs and future pandemic preparedness. This review explores the following research questions:

1. What were the overall issues faced by the elderly during the COVID-19 and how were older adults from lower socioeconomic status particularly vulnerable?
2. How successful were government policies in meeting the needs of older adults during and since COVID-19? What are implications for future pandemic preparedness?

METHODS

Search engines and search approach

Literature searches were primarily conducted through Google Scholar. Search terms used to narrow down relevant articles were “Singapore,” “COVID-19,” “older adults,” “lower income,” and “policy.” After analyzing some articles, the terms “telehealth” and “post-pandemic” were also applied to the database with the previous search terms to find more relevant articles to deepen the analysis. The methodology used in this study is a comprehensive literature review, a systematic way of collecting and synthesizing previous research (Baumeister & Leary, 1997; Tranfield, Denyer, & Smart, 2003). Literature reviews integrate findings and perspectives from many empirical findings into analysis to identify patterns, disagreements, or relationships that appear in the context of multiple studies on the same topic (Davis et al., 2014).

Inclusion Criteria and Selection Process

The database was searched between 21 June 2025 and 18 October 2025. The literature search included titles from 2021 to 2025. The criteria for exclusion were: (1) the study region was not Singapore, (2) the paper had no mention of lower-income individuals or older adults, (3) the paper did not mention any COVID-19 policies or initiatives focused on the target population, older adults from lower-income backgrounds. Searches were tracked utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flowchart criteria (Moher et al., 2009), as depicted in Figure 1.

In the first stage of screening (identification), 635 records were identified from Google Scholar, 5 records were identified through hand search, and 2 records were removed at this stage due to ineligibility or duplication. In the second stage, titles and abstracts from 456 papers were screened to assess general eligibility, and 391 articles were excluded for not meeting one or more criteria. Next, full texts were reviewed to ensure all inclusion criteria were met. XX total articles were excluded for reasons including no mention of the relevant policies or target population. In the third and final stage, all included texts were checked for credibility by verifying the publications under which the texts were published and ensuring each article had

more than one author. In the final analysis, 17 references met all criteria and were included in the research.

Data Extraction and Quality Assessment

Thematic analysis was conducted using Braun and Clarke's six-phase thematic analysis framework, which includes (1) familiarization with studies, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) writing the report (Ahmed et al., 2025). Immediately after full texts were reviewed, initial codes were generated by identifying common keywords in the findings and discussion sections of the research articles. Themes were generated by breaking down the research question into categories that codes would be grouped into to answer the question. The question is organized into “government policies,” “lower economic backgrounds,” and “early on compared to now.” The codes were grouped into themes that reflected areas where lower-income elderly were particularly affected and that underwent considerable development between the start of COVID and the post-COVID period. Four main themes were identified: (1) necessity for community services, (2) psychosocial factors, (3) socioeconomic disparities, and (4) digital divide (see Table 1). The first two themes were generated from identifying the common challenges faced by the elderly during the pandemic, with takeaways showing that they affected lower-income elderly to a greater extent. The other two themes—socioeconomic disparities and the digital divide—were generated by identifying two key inequalities faced by lower-income elderly in comparison to the majority of older adults.

RESULTS

A total of 19 studies were included in this review. 1 of these were literature reviews, 1 were commentaries or papers without primary data, 6 employed qualitative methodologies, 10 used quantitative approaches, 1 paper collected both quantitative and qualitative data. Collectively, the studies examined the impact of the COVID-19 pandemic on older adults of lower socioeconomic status in Singapore. Four overarching domains emerged across the literature, namely socioeconomic disparities, the necessity for community services, psychosocial factors, and the digital divide. These domains were closely interrelated and revealed how structural vulnerabilities shaped older adults' experiences during the pandemic. The interaction between economic, social, and technological factors underscores the importance of multidimensional approaches to policy and service delivery during crises.

Theme 1: Socioeconomic disparities

Economic disruption during the COVID-19 pandemic significantly exacerbated preexisting socioeconomic inequalities among older adults in Singapore. Nearly seven in ten older working Singaporeans earned monthly wages below \$2,500, placing them within the lower-income category (CNA, 2023). Daly et al. (2021) found that individuals in this income bracket were twice as likely to experience salary reductions, unstable employment, and depletion of personal savings during the pandemic. These financial vulnerabilities were intensified by sectoral employment patterns, as lower-wage workers were disproportionately employed in industries such as retail, services, and construction, which were among the most affected by movement restrictions and workplace closures (Ministry of Manpower, 2021).

Many older adults had limited capacity to diversify income sources, which further increased economic vulnerability during prolonged lockdowns.

Income instability had clear implications for subjective well-being. Lee et al. (2021) reported that older adults who experienced income losses also showed significant declines in life satisfaction and greater deterioration in self-reported mental health. Mathews et al. (2021) further observed that confidence in job retention was notably higher among individuals with greater income security, underscoring the heightened vulnerability of economically disadvantaged older adults during periods of uncertainty. Financial insecurity also intersected with health outcomes, as some older adults were forced to delay healthcare or reduce expenditures on nutrition and preventive care.

In response to these challenges, a range of government assistance measures was introduced. Wage support initiatives such as the Self-Employed Person Income Relief Scheme and the COVID-19 Support Grant were designed to provide temporary income replacement (Ministry of Finance, 2020). The Workfare Special Payment targeted low-wage workers, while additional schemes such as ComCare, grocery vouchers, and rebates on housing estate charges were implemented to support essential household expenses (Singapore Parliament, 2020b; The Straits Times, 2020; Today Online, 2020). Although these programs were broadly effective, Daly (2021) noted that individuals aged over 55 years, particularly retirees, were less likely to report receiving aid. This gap was attributed to poor awareness and limited capacity to navigate application processes, many of which relied on digital platforms.

Overall, the literature demonstrates that socioeconomic disparities widened under pandemic conditions. Older adults of lower socioeconomic status faced compounded risks due to higher likelihoods of unemployment, reduced income, and diminished access to welfare services. (Daly et al., 2021)

These economic stressors intersected with poorer physical and psychosocial outcomes, reinforcing existing inequalities. (Daly et al., 2024) Structural interventions are therefore required to address not only income loss but also the mechanisms by which economic disadvantage limits access to essential services.

Implications for future pandemic preparedness

Future pandemic response strategies should prioritize economic protection for vulnerable older adults. Automated eligibility assessments, proactive public communication, and simplified application procedures could reduce exclusion from financial support schemes. Expanding employment protection measures and strengthening social safety nets for retirees may help mitigate income disruption during future public health crises. Integrating economic resilience measures into broader public health planning could ensure that financial and health outcomes are jointly addressed, particularly for populations with compounded vulnerabilities.

Theme 2: Necessity for community services

During the initial phase of the pandemic, from April to June 2020, most social services were suspended after being classified as non-essential (Ministry of Health, 2020; Ministry of Health, 2020). This widespread suspension had notable consequences for older adults. Data from the PIONEER-COVID-19 study showed that one in three adults aged 60 years and above

reported decreased physical activity during this period (Lee et al., 2021). Qualitative findings echoed these trends. A Medical Management Officer interviewed in Yoon's study stated that *"as the Senior Activity Centers were closed...many of them started to deteriorate in their health due to reduced physical activities and movement."* Reduced access to structured social and recreational activities also affected nutrition, cognitive engagement, and adherence to medication, highlighting the interconnectedness of community services with overall health.

Community services in Singapore play a critical role in bridging health and social care needs for older adults, particularly those of lower socioeconomic status (Chen et al., 2024). These services include free community nursing programs that assist with chronic disease management and home-based monitoring (Yi et al., 2020). Tadaï et al. (2023) found that strong social support networks mitigated the psychological and economic effects of disadvantage. In Yoon's study on continuity of care, a therapist emphasized the importance of case management, stating that it was offered to patients *"more vulnerable to...detrimental effects of the service disruptions...stop the case management...very hard for them to survive alone."* Case managers coordinate access to healthcare, financial aid, and social resources, ensuring continuity of care (Care Management Society of Singapore, 2025).

Lee et al. (2020) observed that some older adults only became aware of their eligibility for financial assistance after being referred to social workers, underscoring the extent to which community services determined access to support. Despite service suspensions, some organizations adapted their delivery models. Lions Befrienders conducted weekly telephone or face-to-face check-ins for socially isolated seniors (Loh & Cheng, 2020). Home-care nursing, meal delivery, and medication support continued for urgent cases (Yi et al., 2020). Virtual consultations were introduced to maintain healthcare continuity. In Yoon's (2022) study, a nurse described joint video consultations in which *"nurses and social workers...come together on the same platform during the consult...with the doctor... the patients like it a lot."* Online outreach programs focusing on fall prevention and chronic disease management were also implemented and received positive responses from older adults (Yi et al., 2020).

Many participants expressed the view that medical escort and befriending services should have been considered essential, highlighting their importance during periods of isolation. These findings illustrate that community services are not merely supplementary but constitute a fundamental component of public health infrastructure, particularly for older adults facing multiple vulnerabilities.

Implications for future pandemic preparedness

Ensuring continuity of community-based services is essential for safeguarding older adults' health and independence during future pandemics. Integrating community service providers into national emergency frameworks, strengthening cross-sector collaboration, and pre-identifying essential social care functions would support sustained physical and psychosocial care during lockdowns or service disruptions. Strengthening infrastructure and training for remote and hybrid service delivery could further enhance resilience against future disruptions.

Theme 3: Psychosocial factors

The COVID-19 pandemic had substantial effects on older adults' social and emotional well-being. Prolonged restrictions and reduced social contact contributed to increased loneliness. Data from the Singapore Life Panel, a longitudinal survey involving approximately 7,500 respondents, showed that mean social isolation scores rose from 2.25 in January 2020 to 2.4 in April 2020 (Straughan et al., 2020). Qualitative accounts illustrated the severity of these experiences. In Goh's study, a social worker mentioned how "mental health of (her) current patients ...are worse by having to stay at home," (Goh et al., 2023) These findings reveal that sudden disruption of routine social contact had tangible mental health consequences on many elderly and highlight the need for rapid psychosocial interventions during crises.

Socioeconomic status and housing conditions further shaped psychosocial vulnerability.

Mathews et al. (2021) reported that residents living in smaller housing units experienced higher stress levels and poorer psychological well-being, largely due to constrained living spaces and limited resources. Wee et al. (2014) identified a strong association between lower socioeconomic status and depression, while Wee et al. (2019) found that one-third of participants living in rental housing reported loneliness. Social isolation, when combined with financial insecurity, further exacerbated feelings of helplessness and reduced coping capacity among older adults.

At the onset of the pandemic, allied health services such as counseling and social work were not classified as essential services (Yip et al., 2021; Ngu et al., 2022; Tan et al., 2022). National budgets introduced in 2020 also lacked dedicated allocations for mental health interventions (CNA, 2020). As distress levels increased, the National Care Hotline was launched in April 2020 to provide 24-hour emotional support (Tai, 2020; Yip et al., 2020). Findings from the PIONEER study showed that depression levels among older adults were lower during lockdown compared to pre-lockdown periods, suggesting that helplines and community-based support mitigated psychological distress (Lee et al., 2021).

Over time, public health authorities expanded mental health initiatives, improved mental health literacy, and implemented a multi-tiered care response (Chodavadia et al., 2023; Government of Singapore, 2022). A psychologist interviewed in Goh et al. (2023) noted that "*the government, the media actually...put emphasis on mental health during this period...they increased awareness and this actually helped people to seek help.*" Public awareness campaigns also helped normalize help-seeking behavior and encouraged older adults to use both in-person and digital mental health resources.

Implications for future pandemic preparedness

The literature highlights the importance of integrating mental health frameworks into pandemic preparedness planning. Classifying counseling and psychosocial support as essential services and ensuring the availability of helplines and digital counseling platforms can reduce isolation-related psychological harm. Continued public education on mental health is critical for strengthening resilience during future crises. Planning should also consider targeted outreach to socially isolated populations to prevent long-term mental health consequences.

Theme 4: Digital divide

The digital divide was a pervasive theme influencing healthcare access, social participation, and service utilization among older adults during the pandemic. The digital divide refers to unequal access to digital technologies and disparities in the ability to use them effectively (Dijk, 2017). Across the reviewed studies, older adults of lower socioeconomic status were disproportionately affected, as limited digital literacy and financial constraints restricted engagement with online services that became central during lockdowns (Ngiam et al., 2022). These structural disparities were compounded by rapid digitalization of essential services, leaving many older adults disconnected from vital support networks.

Ng et al. (2022) reported that many older adults required assistance from social agencies or volunteers to complete online appointments for healthcare and social services. These challenges reflected long-standing structural inequalities rather than temporary barriers. Silver et al. (2014) demonstrated that socioeconomic background was a long-term predictor of internet use, with individuals from higher childhood socioeconomic status more likely to sustain digital engagement in later life. This finding illustrates that interventions need to consider lifelong inequalities in access and familiarity with technology.

Language and literacy barriers further reinforced digital exclusion. Lu et al. (2024) found that one-third of participants in a community-based digital learning program struggled to understand smartphone use due to literacy limitations. One participant explained, “Those [literate] people know words, know English... teaching them is very fast. For us, we do not recognize words, you teach me 10 times but I cannot remember... Waste time, waste effort.” This account demonstrates how low literacy and limited confidence hindered acquisition of new technological skills. The lack of accessible instruction, combined with fear of failure, reduced motivation to engage with digital tools and limited the effectiveness of digital inclusion programs.

Some studies reported positive outcomes when digital barriers were addressed. Soundararajan et al. (2023) found that improved digital literacy enhanced well-being through increased social connection and reduced loneliness. However, digital exclusion remained widespread. Tadaï et al. (2023) noted that essential e-services such as tele-counseling, online financial aid applications, and telemedicine required skills and equipment often unavailable to vulnerable older adults. Man et al. (2023) further emphasized that high device costs and unreliable internet access restricted participation, especially among retirees with limited disposable income.

Several government initiatives sought to narrow the digital divide. Telehealth kiosks were introduced in community centers to provide free video consultations at affordable costs (Yoon et al., 2022). An older adult participant in Zhang’s study on health seeking behaviour of community dwelling older adults, explained, “I tried to do a teleconsultation...the consultation, medication, and delivery were very reasonable...cheaper than going to a GP” . (Zhang, Lee & Teo, 2023) The Ministry of Health (2020) expanded the Community Health Assist Scheme and Medisave coverage for teleconsultations. The Infocomm Media Development Authority implemented the Seniors Go Digital program, offering device subsidies, affordable data plans, and community training (Yip, 2021; Perdana et al., 2021). Nevertheless, Ng et al. (2022) and

Ngiam et al. (2022) found that those least familiar with technology were also the least likely to seek help, highlighting the importance of targeted outreach and ongoing support.

To ensure continuity of care for digitally excluded individuals, the Telehealth Medical Allocation and Response System deployed mobile healthcare teams for in-home care. Kok, Chong, Wee, Yau, Raj Kumar and Chua (2024) reported that only 1 percent of assigned patients remained uncontactable, indicating high effectiveness. While these initiatives improved access, educational and affordability barriers continued to limit full digital participation.

Implications for future pandemic preparedness

Addressing digital exclusion should be a core component of pandemic preparedness. Universal access to basic internet connectivity and age-friendly, literacy-sensitive training in community settings could reduce inequities in telehealth use, online information access, and participation in virtual social programs. Policies should also consider ongoing mentorship and peer support to reinforce digital skills and confidence among older adults.

DISCUSSION

This narrative literature review examined the factors that intensified inequality among older adults in Singapore during the COVID-19 pandemic and assessed the extent to which government responses addressed the multidimensional challenges experienced by older adults of lower socioeconomic status. Synthesizing evidence across health, psychosocial, economic, and digital domains, the review demonstrates that the pandemic heightened pre-existing disparities and revealed systemic limitations in policy responses for vulnerable populations.

Community-based services were central to mitigating these inequalities. Case management, community nursing, and social work often provided the only direct links between older adults and essential resources such as healthcare, financial relief, and social assistance (Chen et al., 2024; Yi et al., 2020). The disruption of these services during the circuit breaker significantly restricted access for those least able to navigate administrative systems on their own (Lee et al., 2020; Yoon et al., 2022). These findings indicate that continuity of localized community services is critical to sustaining health and social stability among older adults during public health emergencies.

Psychosocial well-being was also gravely affected. The loss of social contact and reduction in community participation contributed to heightened loneliness and anxiety during the pandemic, particularly among those with fewer social supports and financial means (Mathews et al., 2021; Straughan et al., 2020; Wee et al., 2014; Wee et al., 2019). Although subsequent initiatives such as the National Care Hotline and subsidized counselling programs sought to address mental distress (Tai, 2020; Yip et al., 2020), the initial absence of integrated mental health planning exposed gaps in early pandemic response frameworks (CNA, 2020; Yip et al., 2021; Ngu et al., 2022).

Economic insecurity further compounded inequalities. Lower-income older adults were more likely to suffer financial hardship due to employment instability and limited savings (Daly et al., 2021; Mathews et al., 2021). While relief initiatives like the Self-Employed Person Income Relief Scheme, COVID-19 Support Grant, and various household assistance programs (Ministry of Finance, 2020; Singapore Parliament, 2020b; The Straits Times, 2020; Today

Online, 2020) offered necessary support, retirees and those unfamiliar with digital or procedural systems remained at risk of exclusion (Daly, 2021). This mismatch between program provision and accessibility underscores the need for inclusive communication and simplified processes in future crises.

The rapid shift to digital systems revealed an additional layer of inequality. Many older adults of lower socioeconomic status were unable to access telehealth, apply for assistance, or maintain social contact due to low digital literacy, language barriers, and lack of access to affordable technology (Ngiam et al., 2022; Lu et al., 2024). Programs such as the Seniors Go Digital initiative and community telehealth services expanded access but were most effective among those already familiar with digital tools (Yoon et al., 2022; Ministry of Health, 2020; Yip, 2021; Perdana et al., 2021). This pattern highlights persistent digital exclusion and suggests that digital equity has become an essential determinant of health and social participation for older populations.

Taken together, these findings reveal that while Singapore's pandemic response successfully addressed many immediate health and economic concerns, older adults of lower socioeconomic status endured disproportionate and intersecting disadvantages. These disparities were reinforced by pre-existing inequalities in social networks, financial literacy, and technological access. International research from comparable contexts also confirmed similar outcomes, as older adults in low-income settings elsewhere reported parallel patterns of social isolation, mental distress, and economic vulnerability (Buffel et al., 2021; Ke & Zhang, 2020; OECD, 2020a; Satchanawakul et al., 2022; Thailand Ministry of Public Health, 2021; World Health Organization, 2021a).

Implications for Future Pandemic Preparedness

The findings of this review highlight several key priorities for future preparedness:

- **Continuity of community-based services:** Maintaining health and social services through remote, home-based, or digital models should be considered an essential component of emergency planning. Community networks are uniquely positioned to ensure consistent access to medical care and resource navigation for vulnerable groups.
- **Integration of mental health supports:** Mental health services should be embedded into emergency response frameworks from the outset. Designating psychosocial and counselling programs as essential, with sustained funding and clear communication strategies, can mitigate the negative mental health impacts of isolation.
- **Equitable access to financial assistance:** Simplifying eligibility criteria and working through community-based organizations can ensure older adults receive timely support. Automatic enrollment mechanisms and outreach targeting digitally disconnected individuals can improve equity in aid distribution.
- **Digital inclusion as a preparedness priority:** Building digital literacy, distributing affordable devices, and designing age-friendly technology are necessary to prevent exclusion from essential health and information systems. Collaborative programs

linking governments, technology providers, and community centers can help older adults remain connected during emergencies.

A holistic preparedness plan that values social inclusion and accessibility can reduce the disproportionate impact of future public health crises on older adults of lower socioeconomic status. Such an approach would not only strengthen pandemic resilience but also enhance community cohesion and health equity.

Limitations

This review has several limitations. The available body of research on COVID-19's long-term effects on older adults in Singapore remains limited, with few longitudinal studies exploring sustained outcomes. Many included studies relied on self-reported data, which may introduce recall or response bias. Additionally, the search strategy, which focused on English-language publications within Google Scholar, may have excluded relevant studies from regional or non-English databases. Expanding future literature reviews to additional databases and primary research from diverse linguistic contexts would provide a more comprehensive understanding of pandemic impacts across Singapore's aging population.

Conclusions

Findings demonstrate that the COVID-19 pandemic intensified social and economic inequalities among older adults of lower socioeconomic status in Singapore. Community services, mental health supports, financial stability, and digital inclusion were identified as critical domains shaping older adults' experiences of vulnerability and resilience. The pandemic revealed that those already facing disadvantage were also those most at risk of exclusion when systems became strained. Strengthening future pandemic preparedness requires a multifaceted approach that integrates social equity into health and emergency planning. Protecting community-based infrastructure, improving mental health response capacity, enhancing accessibility of financial relief, and embedding digital inclusion in public health systems will be essential to ensuring older adults remain supported during crises. By prioritizing equity and adaptability, policymakers can build more resilient systems capable of safeguarding the well-being of older adults in future global health emergencies.

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Table 1. Articles Included in Final Literature Review and Analysis

Citation	Study goal	Participants	Design	Type of stakeholders engaged (policymakers, health professionals, community partners, target population, multiple)	Thematic areas: 1) Digital divide 2) Socioeconomic disparities 3) Psychosocial factors 4) Necessity for community services	Key Findings (including early pandemic vs post-pandemic, if applicable)
Yoon, S., Goh, H., Chan, A., Malhotra, R., Visaria, A., Matchar, D., Lum, E., Seng, B., Ramakrishnan, C., Quah, S., Koh, M. S., Tiew, P. Y., Bee, Y. M., Abdullah, H., Nadarajan, G. D., Graves, N., Jafar, T., & Ong, M. E. H. (2022). Spillover Effects of COVID-19 on Essential Chronic Care and Ways to Foster Health System Resilience to Support Vulnerable Non-COVID Patients: A Multistakeholder Study. <i>Journal of the American Medical Association</i> , 23(1), 7–14. https://doi.org/10.1016/j.jamda.2021.11.004	to explore stakeholders' chronic care receipt experiences during COVID-19	51 health care professionals, government officials involved in chronic care management	Qualitative study design	Policymakers; Health Professionals; Community partners	Digital divide; Necessity for community services; Psychosocial factors	<ul style="list-style-type: none"> - During peak COVID 19, Community spaces were closed, the elderly were less physically active and suffered from social isolation, - As more digital solutions are implemented, limited digital literacy is a key barrier to a successful scaling up
Yoon, S., Mo, J., Lim, Z. Y., Lu, S. Y., Low, S. G., Xu, B., Loo, Y. X., Koh, C. W., Kong, L. Y., Towle, R. M., Lim, S. F., Tan, C. S.,	To explore the impact of the pandemic measures continuum of care for	In total, 53 healthcare workers, community partners, government	Qualitative	Government, Policy, Community, Digital	1) Necessity for community services 2) Socioeconomic Disparities	During lockdown: <ul style="list-style-type: none"> - stronger neighbourhood networks and community

<p>Kwan, Y. H., & Low, L. L. (2022). Impact of COVID-19 Measures on Discharge Planning and Continuity of Integrated Care in the Community for Older Patients in Singapore. International journal of integrated care, 22(2), 13. https://doi.org/10.5334/ijic.6416</p>	<p>vulnerable older patients from multi-stakeholder perspectives</p>	<p>officials and family caregivers in Singapore</p>			<p>3) Digital Divide</p>	<p>services needed (backed up by medical professionals), to mitigate poor health outcomes for vulnerable older patients in the community</p> <ul style="list-style-type: none"> - Telehealth was less efficient for elderly with low digital literacy and in assessing the patient's needs
<p>Yip, W., Ge, L., Ho, A. H. Y., Heng, B. H., & Tan, W. S. (2021). Building community resilience beyond COVID-19: The Singapore way. The Lancet regional health. Western Pacific, 7, 100091. https://doi.org/10.1016/j.lanwpc.2020.100091</p>	<p>describe Singapore's ongoing government policies and community efforts in combating COVID-19,.</p>	<p>NA</p>	<p>Review paper</p>	<p>Government, Policy, Community</p>	<p>1) Psychosocial factors 2) Socioeconomic Disparities 3) Necessity for community services</p>	<p>At start of pandemic:.</p> <ul style="list-style-type: none"> - Social, counselling services not classified as essential services, depriving emotionally distressed individuals <p>Around lockdown period, after initial start:</p> <ul style="list-style-type: none"> - Active outreach from Community-based organisations to vulnerable elderly - national mental health support hotline established - Many financial schemes implemented by government for income support <p>Post pandemic:</p> <ul style="list-style-type: none"> - Subsidies and digital ambassadors to make

						<p>technology more accessible for seniors</p> <ul style="list-style-type: none"> - redesigning living spaces with an enclave of social support for seniors
<p>Yi, X. U., Jamil, N. A. B., Gaik, I. T. C., & Fee, L. S. (2020). Community nursing services during the COVID-19 pandemic: the Singapore experience. <i>British Journal of Community Nursing</i>, 25(8), 390-395. https://doi.org/10.12968/bjcn.2020.25.8.390</p>	<p>reports the experiences and transforming efforts of the community nursing services during the pandemic.</p>	<p>nil</p>	<p>Commentary</p>	<p>Community, Policy, Government</p>	<ol style="list-style-type: none"> 1) Necessity of community services 2) Socioeconomic disparities 	<p>During lockdown period:</p> <ul style="list-style-type: none"> - Virtual outreach to equip elderly with self care skills <p>For elderly, language barriers, cognitive impairment, lack of self-monitoring devices cause inaccurate teleconsults</p> <ul style="list-style-type: none"> - liaised with other essential service providers for additional support
<p>Perdana, A., & Mokhtar, I. A. (2022). Seniors' adoption of digital devices and virtual event platforms in Singapore during Covid-19. <i>Technology in society</i>, 68, 101817. https://doi.org/10.1016/j.techsoc.2021.101817</p>	<p>to explore the key factors that influence seniors' intention to use virtual event platforms.</p>	<p>144 respondents from a Community Club in Singapore (Age 60 and above)</p>	<p>Quantitative</p>	<p>Government, Policy,</p>	<ol style="list-style-type: none"> 1) Necessity for community services (need to expand) 2) Psychosocial factors 	<ul style="list-style-type: none"> - Seniors Go Digital programme could keep social isolation at bay
<p>Man, R. E. K., Ho, A. X. Y., Lee, E. P. X., Fenwick, E. K. D., Aravindhan, A., Ho, K. C., Tan, G. S. W., Ting, D. S. W., Wong, T. Y., Yeo, K. K., Goh, S. Y., Gupta, P., & Lamoureux, E. L. (2025). Awareness and attitudes of elderly Southeast Asian adults towards</p>	<p>To understand the awareness and attitudes of elderly Southeast Asians towards telehealth</p>	<p>78 individuals from Singapore (51.3% female, mean age 73.0 ± 7.6 years)</p>	<p>Qualitative</p>	<p>Government</p>	<ol style="list-style-type: none"> 1) Digital divide 2) Socioeconomic disparities 	<ul style="list-style-type: none"> - High cost of devices needed for telehealth services major deterrents to its uptake - telehealth adopted into routine medical care after pandemic

<p>telehealth during the COVID-19 pandemic: a qualitative study. <i>Singapore medical journal</i>, 66(5), 256–264. https://doi.org/10.4103/singaporemedj.SMJ-2022-117</p>						
<p>Ng, I.Y.H., Lim, S.S. & Pang, N. Making universal digital access universal: lessons from COVID-19 in Singapore. <i>Univ Access Inf Soc</i> 22, 1073–1083 (2023). https://doi.org/10.1007/s10209-022-00877-9</p>	<p>Taking Singapore as a case study to discuss the notion of universal digital access.</p>	<p>community groups, volunteers and policy-makers</p>	<p>Qualitative</p>		<p>1) Digital divide 2) Socioeconomic Disparities</p>	<p>Before pandemic lower income individuals, - Cannot afford and jobs have limited exposure to updated technology, Living spaces lack infrastructure for internet access During pandemic: - No provision of digital devices to low income adult learners - National Digital Literacy Programme for vulnerable groups launched Post pandemic: - Community organisations installed Wi fi routers in living spaces of lower income communities, found device ownership, internet access critical for strengthening digital skills - Lower income persons lack digital access now imperative for essential</p>

						services, career advancement
Lee, E. P. X., Man, R. E. K., Gan, T. L. A., Fenwick, E. K., Aravindhan, A., Ho, K. C., Sung, S. C., Wong, T. Y., Ho, C. S. H., Gupta, P., & Lamoureux, E. L. (2022). The longitudinal psychological, physical activity, and financial impact of a COVID-19 lockdown on older adults in Singapore: The PIONEER-COVID population-based study. <i>International journal of geriatric psychiatry</i> , 37(1), 10.1002/gps.5645. https://doi.org/10.1002/gps.5645	To determine the impact of the Stay at Home order on the elderly's overall wellbeing and factors associated with adverse outcomes	496 Singaporean older adults	Quantitative	Target population	Necessity for community services Psychosocial factors Socioeconomic Disparities	<ul style="list-style-type: none"> - For 1/3 of older adults, decrease in physical activity during the Stay at Home order - Increase in loneliness during the stay at home order - Rate of depression lower in sample during stay at home compared to pandemic before order - financial problems were associated with depression
Mindy Eiko Tadai, Paulin Tay Straughan, Grace Cheong, Rachel Ngu Wen Yi, Tan Yan Er, The effects of SES, social support, and resilience on older adults' well-being during COVID-19: Evidence from Singapore, <i>Urban Governance</i> , Volume 3, Issue 1, 2023, Pages 14-21, ISSN 2664-3286, https://doi.org/10.1016/j.ugj.2023.02.002 .	To assess effects of socioeconomic status on wellbeing during covid 19 and how social support and resilience mediate its influence	6667 Singaporean older adults	Quantitative	Target population	Socioeconomic Disparities Digital Divide	<ul style="list-style-type: none"> - Lack of demand for services, inability to work remotely so highest rates of unemployment for blue collar workers - grocery vouchers for low-income individuals - subsidised healthcare from most clinics for seniors
Kok, T. W. K., Chong, S. J., Yau, W. K. J., Raj Kumar, P., & Chua, S. B. R. (2024). Nationwide implementation of a centralised telemedicine platform in Singapore to fight the COVID-19 pandemic. <i>Journal of telemedicine and telecare</i> , 30(7), 1123-	to share the experience of the Ministry of Health deploying a centrally managed Telemedicine service to manage COVID-19	Nil (assessing a system)	Quantitative	Policymakers, Health professionals		<ul style="list-style-type: none"> - in-person healthcare assessment and management provided to Vulnerable groups not suitable for telemedicine - healthcare personnel deployed to

1131. https://doi.org/10.1177/1357633X221122890	cases (TMARS)					physically establish contact with socially vulnerable patients more than 99% success rate
STRAUGHAN, Paulin T.; TOV, William; KIM, Seonghoon; CHENG, Terence; HOSKINS, Stephen; and TAN, Micah. Attitudes, behaviours, and the well-being of older Singaporeans in the time of COVID-19: Perspectives from the Singapore Life Panel. (2020). 1, 1-21. Available at: https://ink.library.smu.edu.sg/rosa_reports/1	Explore effect of COVID and government response to pandemic on behaviour and wellbeing of elderly across domains	Average of 7500 elderly each month across 6 months	Quantitative	Target population	Psychosocial factors Socioeconomic Disparities	- Increased social isolation faced by older adults during stay at home order - Drop in overall life satisfaction for older adults following implementation of Stay at Home order
Mathew M, Syafiq S, Hou M, Tan A, The COVID-19 Pandemic in Singapore, One Year On- Population Attitudes and Sentiments. Nus.edu.sg. https://lkyspp.nus.edu.sg/ips/research/ips-social-lab/the-covid-19-pandemic-in-singapore-one-year-on-population-attitudes-and-sentiments	Presenting attitudes and sentiments of Singaporeans on various social and economic issues among the pandemic	Over 500 respondents	Quantitative	Target population	Psychosocial factors	- Lower income older adults more likely to report stress and low psychological wellbeing - Higher income, younger, had higher confidence levels in still being employed in the next 6 months
NGU, Rachel; TAN, Micah; and LOW, Jia Ying. Life in an endemic COVID-19: Older adults' well-being, activity, and perceptions. (2022). 1-34. Available at: https://ink.library.smu.edu.sg/rosa_reports/10	Examine preliminary views of older adults on returning to their pre pandemic lifestyle in a COVID endemic	Average of 7078 participants each month for monthly survey	Quantitative	Target population	Psychosocial factors	- Early pandemic, older adults faced more distress - Lower SES older adults less confident in resuming activities pre pandemic

<p>Patrick Daly, Amin Shoari Nejad, Katarina Domijan, Jamie W. McCaughey, Caroline Brassard, Laavanya Kathiravelu, Mateus Marques, Danilo Sarti, Andrew C. Parnell, Benjamin Horton, The socio-economic impacts of the COVID-19 mitigation measures and vulnerabilities in Singapore, Progress in Disaster Science, Volume 24, 2024, 100377, ISSN 2590-0617, https://doi.org/10.1016/j.pdisas.2024.100377.</p>	<p>Assess whether the COVID mitigation measures had a socioeconomic impact on the public</p>	<p>2702 participants</p>	<p>Quantitative</p>	<p>Target population</p>	<p>Socioeconomic disparities</p>	<ul style="list-style-type: none"> - Lower income workers more likely to report financial hardships during stay at home order
<p>Daly et al, 2021</p>	<p>Present data and assess how the COVID mitigation measures affected the population differently based on certain factors</p>	<p>1000 participants each two weeks between May to June 2020</p>	<p>Quantitative</p>	<p>Target population</p>	<p>Socioeconomic disparities</p>	<ul style="list-style-type: none"> - lowest earners twice as likely to report finances worsened over highest earners - Lower income individuals more likely to have: challenges paying debt, living expenses and disrupted income - More from lowest household income bracket expect situation worsens - Lower income households receive most government support - Older adults least likely to report receiving government support
<p>Ngiam N, Yee W, Teo N, Yow K, Soundararajan A, Lim</p>	<p>Examine impact of digital</p>	<p>138 digitally</p>	<p>Quantitative</p>			<ul style="list-style-type: none"> - Programmes led to an increase in

<p>J, Lim H, Tey A, Tang K, Tham C, Tan J, Lu S, Yoon S, Ng K, Low L, Building Digital Literacy in Older Adults of Low Socioeconomic Status in Singapore (Project Wire Up): Nonrandomized Controlled Trial, <i>J Med Internet Res</i> 2022;24(12):e40341, URL: https://www.jmir.org/2022/12/e40341, DOI: 10.2196/40341</p>	<p>literacy programmes on digital literacy and health related outcomes for lower income elderly</p>	<p>excluded community-dwelling older adults aged ≥55 years and of lower SES (from July 2020 to November 2021)</p>				<p>mean digital literacy score</p> <ul style="list-style-type: none"> - But did not result in expected improvements in social connectedness/loneliness so increased digital literacy might not translate to sustained use of new technology in older adults' lives
<p>Lu, S. Y., Yoon, S., Yee, W. Q., Heng Wen Ngiam, N., Ng, K. Y. Y., & Low, L. L. (2024). Experiences of a Community-Based Digital Intervention Among Older People Living in a Low-Income Neighborhood: Qualitative Study. <i>JMIR aging</i>, 7, e52292. https://doi.org/10.2196/52292</p>	<p>Examine the experiences and perceptions toward community-based digital intervention among older adults residing in public rental flats</p>	<p>19 participants above 60 who completed the community based digital intervention</p>	<p>Qualitative</p>	<p>Target population</p>	<p>Digital divide</p>	<ul style="list-style-type: none"> - Using technology is difficult and discouraging for lower income elderly due to language barriers and illiteracy
<p>Goh, Z. Z. S., Chan, L. G., Lai, J. Y., Lee, J., Lee, E. S., Soon, W. S. W., Toh, A., & Griva, K. (2023). Impact of COVID-19 on mental health and social service provision in Singapore: Learnings from a descriptive mixed-methods study for future resource planning. <i>Annals of the Academy of Medicine, Singapore</i>, 52(5), 239–248. https://doi.org/10.47102/annals-acadmedsg.2022332</p>	<p>To document the qualitative and quantitative impact of the pandemic on mental health and social services</p>	<p>31 organisation representatives, 16 providers, 3 clients</p>	<p>Qualitative, Quantitative</p>	<p>Community partners, health professionals, target population</p>	<p>Psychosocial factors, Necessity for community services,</p>	<ul style="list-style-type: none"> - Mental health, social services under pressure to adhere to frequently changing guidelines, more resources needed for them to confront “mental health tsunami” of pandemic - According to providers, creation of National helpline helped vulnerable individuals cope with pandemic

Zhang, Y., Lee, E. W. J., & Teo, W. P. (2023). Health-Seeking Behavior and Its Associated Technology Use: Interview Study Among Community-Dwelling Older Adults. <i>JMIR aging</i> , 6, e43709. https://doi.org/10.2196/43709	To investigate health seeking behaviour and technology use among the older population	15 older adults	Qualitative	Target population	Digital divide, socioeconomic disparities	- Technology can encourage health seeking behaviour in elderly
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Table 2. Critical appraisal of studies

Author name/Citation	Strengths	Limitations
Yoon, S., Goh, H., Chan, A., Malhotra, R., Visaria, A., Matchar, D., Lum, E., Seng, B., Ramakrishnan, C., Quah, S., Koh, M. S., Tiew, P. Y., Bee, Y. M., Abdullah, H., Nadarajan, G. D., Graves, N., Jafar, T., & Ong, M. E. H. (2022). Spillover Effects of COVID-19 on Essential Chronic Care and Ways to Foster Health System Resilience to Support Vulnerable Non-COVID Patients: A Multistakeholder Study. <i>Journal of the American Medical Directors Association</i> , 23(1), 7–14. https://doi.org/10.1016/j.jamda.2021.11.004	<ul style="list-style-type: none"> - Analysis: Sorted spillover effects of COVID 19 into clear themes and subthemes with example quotes - Fills knowledge gap in: <ul style="list-style-type: none"> - Hu Limited step-down care options for elderly with complex care needs - Addressing challenges like spillover in new care models - Illuminates challenges and opportunities for health system resilience with emerging care modalities 	<ul style="list-style-type: none"> - Due to Covid 19, Limited inclusion and recruitment of participants by: <ul style="list-style-type: none"> - Type of stakeholder - Level of stakeholder - Patient experience (chronic conditions specifically)
Yoon, S., Mo, J., Lim, Z. Y., Lu, S. Y., Low, S. G., Xu, B., Loo, Y. X., Koh, C. W., Kong, L. Y., Towle, R. M., Lim, S. F., Tan, C. S., Kwan, Y. H., & Low, L. L. (2022). Impact of COVID-19 Measures on Discharge Planning and Continuity of Integrated Care in the Community for Older Patients in Singapore. <i>International journal of</i>	<ul style="list-style-type: none"> - first study that provides a nuanced understanding of the impacts of COVID-19 measures on discharge planning and continuity of care in the community for older adults with long-term chronic conditions - Purposive sampling technique used, resulting in diverse range of views - Experienced facilitator 	<ul style="list-style-type: none"> - Less responses from caregivers and patients - Remote interviewing via video conferencing might have excluded some caregivers and patients with low digital literacy - study only assessed the immediate impacts of the COVID-19 measures on discharge planning and care continuity. Longitudinal

<p>integrated care, 22(2), 13. https://doi.org/10.5334/ijic.6416</p>	<p>trained in qualitative research conducted the interviews</p>	<p>research is needed to explore the long-term effects of the measure</p>
<p>Yip, W., Ge, L., Ho, A. H. Y., Heng, B. H., & Tan, W. S. (2021). Building community resilience beyond COVID-19: The Singapore way. <i>The Lancet regional health. Western Pacific</i>, 7, 100091. https://doi.org/10.1016/j.lanwpc.2020.100091</p>	<ul style="list-style-type: none"> - highlight specific milestones related to the spread of COVID-19, and the enactment of safety measures in Singapore - identifies areas that can be strengthened to enhance the community's preparedness in responding to future infectious disease outbreaks - Enhanced community resilience framework by emphasising another element which was not sufficiently utilised in the framework 	<ul style="list-style-type: none"> - Did not include perspectives of healthcare workers - Did not mention any direct impact of schemes on community after implementation
<p>Yi, X. U., Jamil, N. A. B., Gaik, I. T. C., & Fee, L. S. (2020). Community nursing services during the COVID-19 pandemic: the Singapore experience. <i>British Journal of Community Nursing</i>, 25(8), 390-395. https://doi.org/10.12968/bjcn.2020.25.8.390</p>	<ul style="list-style-type: none"> - Detailed description of both successes and challenges in community nursing services during the pandemic - Experiences and assessment of community nursing services were clearly sorted into different types of services carried out by community nurses, allowing areas of improvement to be identified more clearly 	<ul style="list-style-type: none"> - No specific framework used to assess the community nursing services - Data and experiences in article are mostly self reported as article is written by community nurses/related officials
<p>Perdana, A., & Mokhtar, I. A. (2022). Seniors' adoption of digital devices and virtual event platforms in Singapore during Covid-19. <i>Technology in society</i>, 68, 101817. https://doi.org/10.1016/j.techsoc.2021.101817</p>	<ul style="list-style-type: none"> - explains the significant concerns and main reasons that discourage seniors from participating in online events. - Previous research on primarily focused on health-related purposes such as nutrition and exercise or managing old-age related diseases or ailments thus this article helps explore a new area of research 	<ul style="list-style-type: none"> - All data were collected exclusively from seniors who actively participated in a community club in Singapore, not representative of the entire population. - findings were limited to certain variables to make research model parsimonious

<p>Man, R. E. K., Ho, A. X. Y., Lee, E. P. X., Fenwick, E. K. D., Aravindhan, A., Ho, K. C., Tan, G. S. W., Ting, D. S. W., Wong, T. Y., Yeo, K. K., Goh, S. Y., Gupta, P., & Lamoureux, E. L. (2025). Awareness and attitudes of elderly Southeast Asian adults towards telehealth during the COVID-19 pandemic: a qualitative study. <i>Singapore medical journal</i>, 66(5), 256–264. https://doi.org/10.4103/singaporemedj.SMJ-2022-117</p>	<ul style="list-style-type: none"> - qualitative design, allowed comprehensive exploration of the reasons underpinning participants’ responses to questions on telehealth awareness, attitudes and acceptance. - A large, purposively recruited community-based sample enhanced the generalisability of results to the elderly population under investigation. - utilised the COREQ criteria to guide study design, and data synthesis was informed by a well-accepted theoretical framework (UTAUT). 	<ul style="list-style-type: none"> - Self-reported data - the limited number of Indian, Malay and Eurasian participants and the paucity of dialect and non-English/Mandarin speakers - did not conduct qualitative interviews with healthcare providers and caregivers to garner their feedback on telehealth use in the elderly, which would have complemented the patient-centric data. - study was done relatively early in the pandemic (May 2020–June 2020), and patient perceptions on telehealth services may have changed over time
<p>Ng, I.Y.H., Lim, S.S. & Pang, N. Making universal digital access universal: lessons from COVID-19 in Singapore. <i>Univ Access Inf Soc</i> 22, 1073–1083 (2023). https://doi.org/10.1007/s10209-022-00877-9</p>	<ul style="list-style-type: none"> - Clear and specific examples of government initiatives to - Canvassed a wide range community views of community views as possible to on the issue of digital access, enhancing the use of participatory action research method for research - Authors’ direct involvement in in raising digital access for vulnerable groups, having an in depth understanding of community of interest, made the methodology suitable 	<ul style="list-style-type: none"> - Lack of quotes to illustrate the examples - The participatory action research method has a focus on the personal experiences and opinions of those close to the issue, but the diverse perspective and values of participants may affect reliability of claims
<p>Mindy Eiko Tadai, Paulin Tay Straughan, Grace Cheong, Rachel Ngu Wen Yi, Tan Yan Er, The effects of SES, social support, and resilience on older adults’ well-being during COVID-19: Evidence from Singapore, <i>Urban Governance</i>, Volume 3,</p>	<ul style="list-style-type: none"> - Socioeconomic status is measured using total wealth over income, which is more accurate as it considers savings accumulated over a lifetime - Data precludes assumption of causality - path analysis employed 	<ul style="list-style-type: none"> - 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. - cross-sectional nature of the analysis, causal associations between the various factors cannot be inferred from our

<p>Issue 1,2023,Pages 14-21,ISSN 2664-3286,https://doi.org/10.1016/j.ugj.2023.02.002.</p>	<p>allows for simultaneous examination of direct and indirect effects of multiple variables in model</p> <ul style="list-style-type: none"> - Discussion incorporates existing literature to corroborate findings - Respondents were successfully recruited between May-July 2015 via a population-representative sampling frame from the Singapore Department of Statistics 	<p>study.</p> <ul style="list-style-type: none"> - Data is self reported
<p>Kok, T. W. K., Chong, S. J., Yau, W. K. J., Raj Kumar, P., & Chua, S. B. R. (2024). Nationwide implementation of a centralised telemedicine platform in Singapore to fight the COVID-19 pandemic. <i>Journal of telemedicine and telecare</i>, 30(7), 1123–1131. https://doi.org/10.1177/1357633X221122890</p>	<ul style="list-style-type: none"> - Explained the specific process of risk stratification and consultation allocation using the (TMARS) telehealth system, explaining each phase and all the criteria for the patient to pass through each phase - Use of diagrams to simplify the selection for teleconsultation process - Utilisation of data from the system which correlated with the explanation of how the system works provides compelling and credible implications 	<ul style="list-style-type: none"> - the data, escalation rate, used to track effectiveness of telemedicine may not be as accurate as the patient’s medical records which could reflect the patient’s journey before and after all teleconsultation - Lack of recommendations made in discussion - Limited background information in study about stakeholders’ views of healthcare system
<p>Lee, E. P. X., Man, R. E. K., Gan, T. L. A., Fenwick, E. K., Aravindhan, A., Ho, K. C., Sung, S. C., Wong, T. Y., Ho, C. S. H., Gupta, P., & Lamoureux, E. L. (2022). The longitudinal psychological, physical activity, and financial impact of a COVID-19 lockdown on older adults in Singapore: The PIONEER-COVID population-based study. <i>International journal of geriatric psychiatry</i>, 37(1), 10.1002/gps.5645. https://doi.org/10.1002/gps.5645</p>	<ul style="list-style-type: none"> - Study addressed certain research gaps in Singapore literature in aspects such as physical activity of elderly, level of financial problems and loss among elderly - Verbal consent was obtained from all participants - Suitable scales were used to examine each aspect addressed in the study for more accurate analysis, eg. Economic Hardship Questionnaire for examining financial impact, Patient Health Questionnaire for measuring depression 	<ul style="list-style-type: none"> - Shortage of Malay participants in sample - Study used self reported questionnaires to measure psychiatric symptoms and did not establish clinical diagnosis - Data collection undertaken towards tail end of Stay at Home order, could not capture impact during initial period of Stay at Home order

	<p>symptoms</p> <ul style="list-style-type: none"> - Detailed background information supporting analysis 	
<p>STRAUGHAN, Paulin T.; TOV, William; KIM, Seonghoon; CHENG, Terence; HOSKINS, Stephen; and TAN, Micah. Attitudes, behaviours, and the well-being of older Singaporeans in the time of COVID-19: Perspectives from the Singapore Life Panel. (2020). 1, 1-21.</p> <p>Available at: https://ink.library.smu.edu.sg/rosa_reports/1</p>	<ul style="list-style-type: none"> - Many figures included to illustrate the data collected over the months, clearly showing the reader the impact before and during the stay at home order - Analysed data collected over 6 months, covering the perspective shifts of older adults from the initial stage of the pandemic to the stay at home order, highlighting the impact of the stay at home order 	<ul style="list-style-type: none"> - Self reported data for feelings of social isolation and changes in life satisfaction - Overwhelming majority of Chinese participants compared to participants from other ethnicities
<p>Mathew M, Syafiq S, Hou M, Tan A, The COVID-19 Pandemic in Singapore, One Year On- Population Attitudes and Sentiments. Nus.edu.sg. https://lkyspp.nus.edu.sg/ips/research/ips-social-lab/the-covid-19-pandemic-in-singapore-one-year-on-population-attitudes-and-sentiments</p>	<ul style="list-style-type: none"> - Defined the scales used, the questions provided and the key outcome variables for data collected - Many figures included to illustrate data collected over the month, showing the increase/decline in certain aspects to show the impact of the pandemic in those areas 	<ul style="list-style-type: none"> - Could include a background section - Data was self reported
<p>NGU, Rachel; TAN, Micah; and LOW, Jia Ying. Life in an endemic COVID-19: Older adults' well-being, activity, and perceptions. (2022). 1-34.</p> <p>Available at: https://ink.library.smu.edu.sg/rosa_reports/10</p>	<ul style="list-style-type: none"> - Many figures included to illustrate data for each month, showing the increase/decline in certain aspects to show the impact of the stay at home order and pandemic in those areas - Detailed key topics explored in study and discussion formed conclusions for these areas of interest - Summary of data distribution is provided for each question, characteristics and risk 	<ul style="list-style-type: none"> - Data was self reported - Not all findings were supported by supporting background information - Very large sample of 7078 participants each month from January 2019 to April 2022 but might have a degree of inaccuracy in the comparison between stay at home and early pandemic as it is not guaranteed that the respondents are the same people and consistently responding

	factors are easier to identify	
Patrick Daly, Amin Shoari Nejad, Katarina Domijan, Jamie W. McCaughey, Caroline Brassard, Laavanya Kathiravelu, Mateus Marques, Danilo Sarti, Andrew C. Parnell, Benjamin Horton, The socio-economic impacts of the COVID-19 mitigation measures and vulnerabilities in Singapore, Progress in Disaster Science, Volume 24, 2024, 100377, ISSN 2590-0617, https://doi.org/10.1016/j.pdisas.2024.100377 .	<ul style="list-style-type: none"> - Bayesian approach used to avoid hyperplane separation problems, preventing overestimation of odds ratios - For each area of interest, a table included to compare data for that area from different population groups, allowing the reader to better understand the specific impact of the pandemic on a distinct population 	<ul style="list-style-type: none"> - Survey did not include foreign guest workers which make up a considerable part of Singapore’s population - The psychosocial impact of the pandemic was not touched upon in the study, which narrowed the scope of its analysis on the socioeconomic impact of the pandemic on various population groups
Daly, P., Brassard, C., McCaughey, J., Ng, R., Kathiravelu, L., & Horton, B. (2022). The social and economic impacts of COVID-19 mitigation measures on citizens and permanent residents during the circuit breaker period in Singapore. S. Rajaratnam School of International Studies.	<ul style="list-style-type: none"> - Insights from data were written in bullet points, resulting in a more concise study - For each aspect being assessed, the data is organised in: a summary of the differences in outcome, followed by the specific population groups that were affected in distinct ways, which clearly helped highlight the inequalities faced by certain populations 	<ul style="list-style-type: none"> - Tables are all located in a separate appendix away from the data - Specific numbers from the survey are not used when stating results and takeaways from the survey, only found in the tables, which can be misleading or lessen the accuracy of the data
Ngiam N, Yee W, Teo N, Yow K, Soundararajan A, Lim J, Lim H, Tey A, Tang K, Tham C, Tan J, Lu S, Yoon S, Ng K, Low L, Building Digital Literacy in Older Adults of Low Socioeconomic Status in Singapore (Project Wire Up): Nonrandomized Controlled Trial, J Med Internet Res 2022;24(12):e40341, URL:	<ul style="list-style-type: none"> - data collection was conducted in person or via telephone interviews, allowing the inclusion of participants who were digitally excluded and might not have been included in other web-based studies - Using appropriate scales used to measure outcomes and detailing them in the methodology (eg. Lubben Social Network Scale-6) for 	<ul style="list-style-type: none"> - Data such as outcomes were self reported by participants - nonrandom assignment of participants to groups was used due to the waitlist approach - Did not share findings and analysis from all the scales used in the research paper to assess outcomes for participants (only mentioned LSNS-6 score

<p>https://www.jmir.org/2022/12/e40341, DOI: 10.2196/40341</p>	<p>more credibility</p>	<p>and digital literacy)</p>
<p>Lu, S. Y., Yoon, S., Yee, W. Q., Heng Wen Ngiam, N., Ng, K. Y. Y., & Low, L. L. (2024). Experiences of a Community-Based Digital Intervention Among Older People Living in a Low-Income Neighborhood: Qualitative Study. <i>JMIR aging</i>, 7, e52292. https://doi.org/10.2196/52292</p>	<ul style="list-style-type: none"> - followed the COREQ (Consolidated Criteria for Reporting Qualitative Research) checklist to ensure comprehensive and transparent reporting of results - Used specific quotes from interviews with the lower income elderly to reinforce the themes or sub themes that describe thrift perspectives or experiences, increasing credibility 	<ul style="list-style-type: none"> - Unable to analyse data in terms of how the experiences and perceptions differed across different sociodemographic characteristics - 84% of the participants were Chinese despite the multicultural local society, limiting its applicability to all low income seniors
<p>Goh, Z. Z. S., Chan, L. G., Lai, J. Y., Lee, J., Lee, E. S., Soon, W. S. W., Toh, A., & Griva, K. (2023). Impact of COVID-19 on mental health and social service provision in Singapore: Learnings from a descriptive mixed-methods study for future resource planning. <i>Annals of the Academy of Medicine, Singapore</i>, 52(5), 239–248. https://doi.org/10.47102/annals-acadmedsg.2022332</p>	<ul style="list-style-type: none"> - Qualitative data from a variety of stakeholders involved in mental health support during the pandemic, exploring multiple perspectives, for more thorough review of the impact of pandemic on mental health/social services - Illustrative quotes provided for each subtheme under each main theme 	<ul style="list-style-type: none"> - Analysis of quantitative data is less detailed compared to the analysis of qualitative data - Data collection conducted primarily online, excluding possible participants who face barriers in access to the necessary technology
<p>Zhang, Y., Lee, E. W. J., & Teo, W. P. (2023). Health-Seeking Behavior and Its Associated Technology Use: Interview Study Among Community-Dwelling Older Adults. <i>JMIR aging</i>, 6, e43709. https://doi.org/10.2196/43709</p>	<ul style="list-style-type: none"> - Used the established Health Seeking Behaviour model by Poortaghi et al to guide analysis of health seeking behaviour of elderly - Sufficient qualitative data, many quotes to illustrate the author’s findings for each section - Use of quantitative data as well, providing statistics for number of participants who had the same sentiments, increasing credibility of findings 	<ul style="list-style-type: none"> - Most participants were Chinese, future studies should be extended to Malay, Tamil, Chinese dialect speakers - Main method of participant recruitment and contact was through online platforms, could result in bias towards more digitally literate individuals/individuals with more digital access

Figure 1. PRISMA Flow chart

