

ANNUAL REPORT



**2022-
2023**

Vision, Mission and Objectives

VISION

To achieve health, social inclusion and a high quality of life for our ageing population.

MISSION

- To provide an environment that enables multidisciplinary research and education on ageing
- To inform policy and practice on ageing in Singapore

OBJECTIVES

- To undertake multidisciplinary ageing research, with a focus on social and psychological dimensions, for a holistic understanding of the potentials and challenges of ageing at the individual and population level
- To undertake research which facilitates the development and implementation of evidence-based policies, programmes, and services for older adults and their caregivers
- To contribute to and develop research capacity for high-quality ageing research
- To organise education activities for stakeholders in the academic, policy and practice sectors

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Message from the Executive Director



The Centre for Ageing Research and Education (CARE) was created so that policy making for Singapore's ageing population can be based on high quality multidisciplinary research. The research conducted should have both translational and policy impacts focused on helping older Singaporeans achieve a high quality of life and health longevity. In 2015, a small group of researchers and the Ageing Planning Office (APO) at Singapore's Ministry of Health agreed to take on this task.

Eight years later in 2022, we have grown to a staff strength of 22 based on a mix of funding from APO, competitive research grants, and philanthropic donations. Our success is based on a commitment to produce high quality, thoughtful research on ageing and continuous communication with other research communities in Singapore, practitioners, and policy makers. Indeed, without our partners, none of this work would have been possible. The impact of ageing on individuals, families, and societies cannot be studied in disciplinary silos. Neither can we achieve translation or policy without engaging with invested parties and sharing data. CARE is proud to be the founding convener of the Singapore Ageing Research Network (ARN) that brings together the 8 ageing centres in Singapore to share knowledge and foster collaborations. At CARE we promote data sharing in order to develop better science. In 2019, CARE was the first ageing centre to make its longitudinal survey data from the Panel on Health and Ageing of Elderly Singaporeans publicly available. These data have been used by local and international students and researchers.

CARE is invested in educating the next generation of researchers interested in ageing. Every year we hold a series of expert seminars, research methods workshops, and roundtables. We mentor PhD students admitted to the Programme in Health Services & Systems Research at Duke-NUS Medical School. We also take interns from the various polytechnics and local universities. The internship programme has become increasingly competitive as the number of applicants grows each year. We have also hosted fellows from the Robert Wood Johnson Foundation and the Fulbright programme. We continue to receive international requests to collaborate. Most recently, I chaired the Population Aging Program of the Association of Pacific Rim Universities, a network of over 60 universities. I currently chair the International Alliance of Research Universities Ageing, Longevity and Health Initiative which brings faculty and students across 12-member universities to study ageing and health. Singapore is recognized as a thought leader in population ageing research; the research we do here can be applied to other Asian contexts.

As population ageing becomes an increasingly worldwide phenomenon, there is no doubt that this is an area which requires research to improve solutions to the health and social care needs of older persons. A societal mindset shift is required in which individuals see becoming older as the beginning of new opportunities rather than an inevitable decline. The only way this shift can occur is if our health and social institutions make changes to adapt to new cohorts of aged populations. As Margaret Riley said in the 1968, "structural lag", or the inability of our institutions to change along with cultural needs, (in this case new generations of older persons with changing characteristics) needs to be addressed in order for any country to age successfully.

Angelique Chan

Advisory Board



Professor Brenda Yeoh (Chairperson)

Raffles Professor of Social Sciences, Faculty of Arts and Social Sciences, and Research Leader, Asian Migration Cluster, Asia Research Institute, National University of Singapore



Professor Pang Weng Sun

Senior Advisor, Geriatric Education and Research Institute



Professor Aline Wong

Former Senior Minister of State for Education, and Advisor to S.R. Nathan School of Human Development, Singapore University of Social Sciences



Mr Richard Sim Hwee Cher

Retired Vice Chairman (Operations) and Assurance Leader, PricewaterhouseCoopers LLP



Ms Chan Su Yee

Chief Executive Officer, NTUC Health Co-operative Limited



**Associate Professor
Tan Boon Yeow**

Chief Executive Officer, St Luke's Hospital



Ms Charlene Chang

Group Director, Ageing Planning Office, Ministry of Health



**Professor Thomas Coffman
(Ex-Officio Member)**

Dean, Duke-NUS Medical School

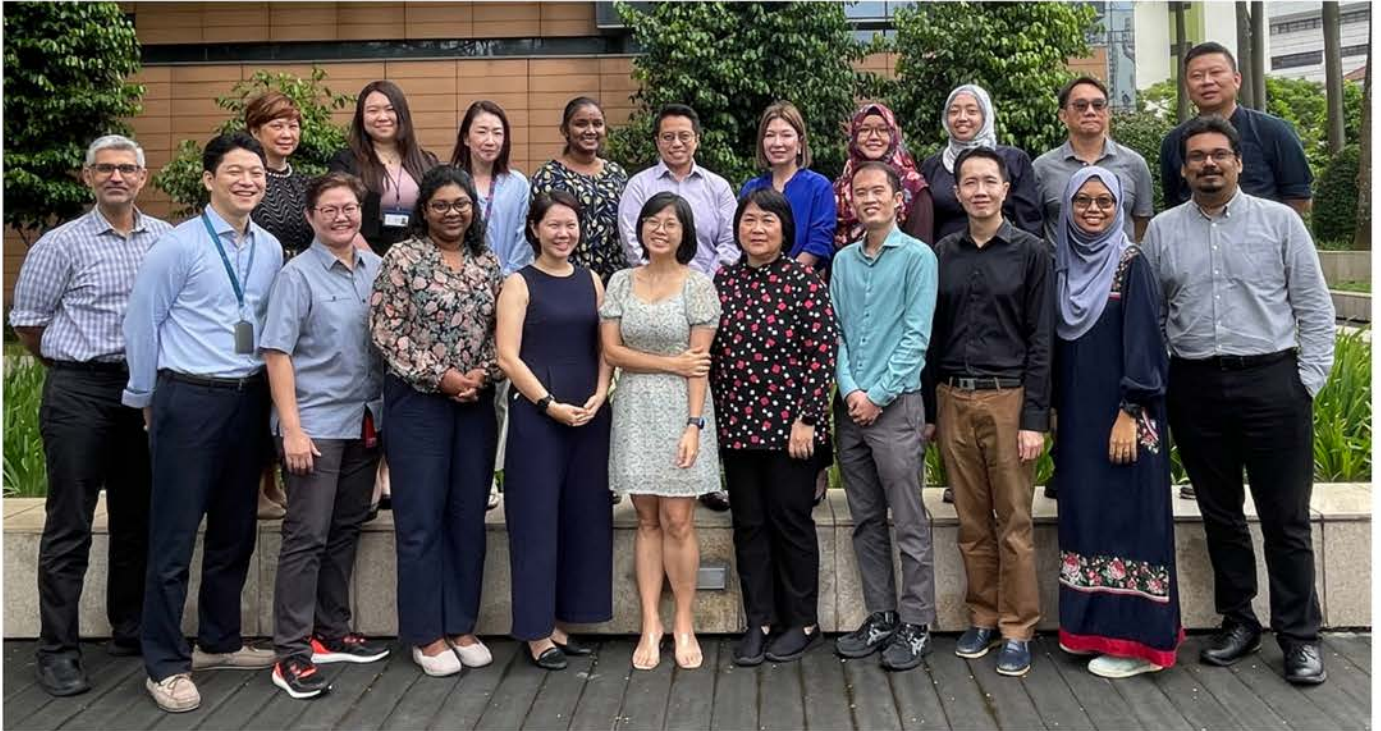


Professor Marcus Ong

Director, Health Services & Systems Research Programme, Duke-NUS Medical School

Staff

as on 1 February 2023



(Top row, left to right)

Ms Daphne Lee, Management Assistant Officer
Ms Christina Chai, Research Assistant
Dr Mayo Ono, CARE Associate
Ms Thulase Thamootharam Pillai,
Research Assistant
Dr Ad Maulod, Senior Research Fellow
Dr Angelique Chan, Executive Director
Ms Atiqah Lee, Senior Research Assistant
Ms Nur Diyana Binte Azman,
Senior Research Assistant
Dr Arthur Chia, Senior Research Fellow
Mr Tan Kok Yang, Research Associate

(Bottom row, left to right)

Dr Rahul Malhotra, Deputy Director,
Head of Research
Dr Pildoo Sung, Research Fellow
Ms Darrell Ling, Senior Executive
Ms Sumithra Devi Suppiah,
Senior Research Associate
Ms June Lee, Senior Research Associate
Ms Ha-Linh Quach, Senior Research Assistant
Ms Cindy Chew, Associate Director,
Head of Education
Dr Jeremy Lim, Research Fellow
Mr Wong Yunjie, Research Assistant
Ms Siti Syazwani, Executive
Dr Abhijit Visaria, Senior Research Fellow

In absentia: **Mr Malcolm Ravindran**, Research Assistant & **Ms Sasha Rouse**, Research Associate

Research Themes

Our multidisciplinary research helps identify demographic, social, psychological, physical, and economic factors that impact life transitions, morbidity, and mortality at older ages.

CARE collects quantitative population-level data through both cross-sectional and longitudinal community-based surveys, several of which are nationally representative. These data allow us to assess the prevalence, correlates, mediators, and moderators of various health and wellbeing outcomes, and inform policy and practice.

CARE's qualitative research aims to provide a rich understanding of the complexity and diversity of older adulthood by focusing on the contexts and conditions in which people live, work and age, and the ways in which these factors interact and influence later life experiences. We use a variety of methods such as in-depth interviews, focus group discussions, ethnographic observations and photo-voice to capture the social worlds of older persons and their care environments. Our findings foreground the voices of older persons and/or their caregivers and have direct relevance to policy and practice.

Our research addresses eight core themes:

- Ageing and the Environment
- Community-Based Health and Social Care Services
- Falls Prevention
- Family Caregiving
- Health Communication
- Population Health
- Productive Ageing
- Social and Psychological Aspects of Ageing

1 Ageing and the Environment



The environment plays an important role in determining the physical, social, and mental capacities of individuals as they enter and progress through old age as well as in moderating the impact of decline in intrinsic capacity.

At CARE, we examine the diverse ways in which older individuals interact with their environment and how life space affects healthy ageing. Taking a broader view, the environment includes consideration of those factors that shape public understanding about what it means to age, such as discourses of ageing, cultural references, frameworks of ageing, and forces that mediate the processes and perspectives of ageing.

2 Community-Based Health & Social Care Services



As Singapore ages, community-based health and social care services are being re-imagined and expanded to reflect the unmet needs and aspirations of current and future older adults in Singapore. Using quantitative and qualitative methods, we examine the barriers and facilitators of the use of long-term care services in Singapore. We also evaluate models of care for older adults and their caregivers, to provide evidence for policy makers and community partners developing long-term care services in Singapore. Our work provides a deeper understanding of the models of health and social care services (e.g., dementia day care, use of community nurses, and eldercare centers) being delivered in Singapore.

3 Falls Prevention



The risk of falls and fall-related problems increases with age, and accounts for serious disability issues among older adults. Falls prevention is an important part of geriatric care and ageing research. Falls can have a wide range of contributing factors such as the health of older adults, the care provided by household members, home environment hazards, sleep quality, and others.

CARE conducts research on the determinants of falls at the population level using national longitudinal survey data. CARE also assesses the fidelity and the efficacy of different modes of fall prevention interventions such as peer-led community-based groups, gamification, and health technology.

4 Family Caregiving



Family caregiving for older adults is a complex, multifaceted experience, shaped by cultural, social, and family dynamics as well as government policies and programmes. Family caregivers provide significant long-term care and assistance to their loved ones, and often engage in several aspects of care, including direct physical and emotional care, decision-making, and coordination with or supervision of other caregivers including migrant domestic workers. The caregiving trajectory is seldom straightforward and is often filled with transitions and challenges. The impact of family caregiving is wide-ranging and varied, and caregivers experience both challenges and rewards throughout their caregiving journey.

At CARE, our research examines both the positive and negative experiences of caregiving as well as family dynamics in caregiving. We also study how health and social care services, and policies for family caregivers can be improved to recognize and validate the important role of family caregivers. We collect data on working caregivers and 'sandwiched' caregivers who must balance multiple responsibilities in the home and at the workplace and aim to inform supportive employment policies such as Eldercare Leave and Flexi-Time work.

5 Health Communication



Health communication is an essential component of healthcare services, as good communication between healthcare providers and patients can contribute to successful treatment and patient satisfaction. Health communication also encompasses advocating for the health needs of care recipients across diverse care settings. Effective health communication needs to be delivered flexibly to provide quality care and services, especially within an ageing community. CARE's research includes projects and studies to improve the process of health communication for older adults, in order to maintain and improve the quality of care services and health outcomes.

6 Population Health



Population health encompasses the health outcomes of the whole population and the distribution of health outcomes across different population sub-groups. Measures of population health at older ages include health expectancy, i.e., the number of years of remaining life that older adults on average can expect to live in different states of health, prevalence estimates for various morbidities, limitations in activities of daily living, indicators for mental health such as cognition and depressive symptoms, and social health indicators such as social networks and loneliness.

Longitudinal data from our national studies of older adults allows us to track wellbeing indicators over time and identify the determinants of change in these indicators. The data also allows us to identify specific sub-groups of older adults defined by age, sex, ethnicity, socioeconomic status, or health status, who are at greater risk of adverse health and wellbeing outcomes. CARE has linked survey data from some of its national studies with administrative data held by the Ministry of Health, Singapore to further assess population-level segmentation, enable projections of health status and unmet health and social care needs, and examine patterns of healthcare utilization.

7 Productive Ageing



The concept of productive ageing emphasizes the contribution of older adults to their own lives, to their families and communities, and ultimately to society. Productive ageing covers a wide range of activities that older adults can participate in and technologies that they can use to improve their quality of life. Understanding how older adults aspire to be productive and generative and their diverse forms of engagement will inform the development of age-inclusive social policies.

At CARE, our research on productive ageing covers digital technology use, social engagement, generativity, volunteering, and life-long learning for older adults. Our work ties in with older-adult specific initiatives being undertaken in Singapore under the Action Plan for Successful Ageing.

8 Social & Psychological Aspects of Ageing



Social factors (for example, social engagement, social relationships, and loneliness) as well as psychological factors (such as mental well-being, resilience and stress) play a critical role in informing how adults cope with and adapt to transitions in their later lives. A comprehensive understanding of the social and psychological aspects of ageing is needed to influence better health and well-being outcomes of older adults.

At CARE, we analyze the complex interactions and relationships between these aspects of ageing. Research conducted by CARE helps identify positive factors that benefit physical, cognitive, and mental health of older adults as well as risk factors for morbidity, mortality, and other age-related challenges.

Research Projects: Ongoing



Falls Prevention

Assessment of Fall and Fracture Risk: Targeted Assessment and Recruitment of Geriatrics for Effective Fall Prevention Treatments (TARGET)


The study is a population cohort study led by CARE in collaboration with ETH Zurich, Singapore ETH Centre, Singapore Eye Research Institute, and Bond University, as part of the 'Future Health Technologies' research programme. It aims to identify gait signature parameters, during a 5-minute walk within older adults' own home or corridors and common areas outside, with the ZurichMove set of wireless wearable sensors, as well as analyse the psychosocial, cognitive and sociodemographic factors associated with the risk of falls and fractures among community-dwelling older adults in Singapore.



Family Caregiving

Caregiving Transitions Among Family Caregivers of Elderly Singaporeans (TraCE)


This project is a longitudinal study of dyads of older adults and their family caregivers in Singapore. It aims to describe the longitudinal patterns of health, work and caregiving-related outcomes among family members, and identify factors that predict/affect these patterns. Other aims include the estimation of cost of caregiving time and the assessment of the impact of transitions into caregiving.



Ageing and the Environment

Care Needs of Middle-and Upper-Income Seniors (CAMUS)


This project is to better understand the care needs of higher-income seniors in the context of ageing-in-place. It aims to investigate and describe their met and unmet needs; understand how those needs are managed, and what are the areas for improvement to address and/or better manage those needs to support ageing-in-place.



Ageing and the Environment

The Elderly Life Activity-Space (EASE) Project: The Environmental, Health and Social Factors Determining Seniors' Life Spaces in the Community


Life space analysis represents the interface between the environment and health/social factors, whereby diminishing life spaces predict poor health outcomes and quality of life. The aim of this collaborative project is to investigate and understand the role of social determinants and the urban built environment to optimize older persons' mobility to age-in-place.



Family Caregiving, Community-Based Health and Social Care Services

The Qualitative Insights into Caregiving Transitions (Quali-T) Study


This study aims to provide a more nuanced picture of family caregiving through a qualitative exploration of caregivers' subjective life experiences and an examination of the positive and negative aspects of caregiving. It also aims to develop an intervention to enhance the positive aspects of caregiving.



Social & Psychological Aspects of Ageing, Population Health, Productive Ageing

THE SIGNS Study III & IV (Transitions in Health, Employment, Social Engagement and Intergenerational Transfers in Singapore Study)

In 2022-23, CARE started preparing for the third and fourth waves of THE SIGNS Study, a nationally representative longitudinal study on the physical, mental, and social health and wellbeing of older Singapore citizens and permanent residents aged 60 years and older. THE SIGNS Study – III and – IV, to be conducted in 2023 and 2025, will also contribute data to assessing developments following the 2023 Action Plan for Successful Ageing, which has a focus on Care, Contribution, and Connectedness. The first two waves of THE SIGNS Study were conducted in 2016-2017 and 2019.




Social and Psychological Aspects of Ageing

Towards Personalization: Identifying Life-History Patterns of Loneliness as the Basis for Effective Early Interventions

Drawing on participant life histories, photo elicitation and in-depth interviews, the study unpacks the complexities of loneliness in later life by understanding how differences in life trajectories between participants have contributed to and affect their subjective experience of loneliness. Understanding the different patterns contributing to loneliness provides a toolkit for targeted and personalised interventions, piloted in a later phase of the Healthy Longevity project, that take into consideration how loneliness manifests in our local contexts.


Research Projects: Completed



Community-Based
Health and Social
Care Services

An Evaluation of a Community Functional Screening Programme for Older Singaporeans (Project Silver Screen)

CARE conducted a mixed-methods evaluation study of Project Silver Screen (PSS), a nationwide community-based programme for screening the oral health, vision and hearing of older Singapore citizens and permanent residents, aged 60 years and above, with a view to improve their quality of life and support ageing-in-place. The quantitative study involved analysis of PSS administrative data of over 84000 participants during 2018-2021. Using multi-method techniques that included in-depth interviews and focus group discussions, the qualitative study examined older persons' experiences of PSS and its impacts and implications on managing common declines in physical capacity in older age, specifically vision, hearing, and oral health.



Community-Based
Health and Social
Care Services

Assessing the Impact of Enhanced Primary Care (EPC) Services for People with Chronic Conditions in Singapore


Overall, the project aimed to develop a health systems model that suggests various ways in which primary healthcare services can be organised in Singapore for an ageing population with an increasing prevalence of chronic conditions. CARE contributed to the conceptualization and development of a survey version of the existing Simple Segmentation Tool, which has been designed at Duke-NUS to assess a core set of individual patient health and social service needs. The project also involved analysis of THE SIGNS Study to estimate the age-specific annual probabilities of transition between different health states defined in terms of chronic conditions and associated healthcare utilization.



Ageing and the Environment, Community-Based Health and Social Care Service

A Study to Establish an Integrated Geriatric Care Model (IGCM) within Thye Hwa Kuan Moral Charity's (THKMC) Services

CARE was commissioned by THKMC to understand and identify the diverse contexts and mechanisms of THKMC service provision that are crucial for service integration. CARE's role was to understand the needs of older clients and capture their overall experiences as multiple service users, including the development of archetypes based on clients' needs. CARE contributed to the co-development and refinement of the pilot IGCM. Through their research, CARE provided insights into the service evaluation findings from interviews conducted with service users and summarized key issues and challenges that senior management and frontline staff experience in the conceptualization and implementation of care integration.



Community-Based Health and Social Care Services

Enhancing Integrated Care for Older Adults Living in Urban Areas – Assessing Health and Social Care Needs

The project involved collaborating with Berlin University Alliance (BUA) researchers on applying the survey-based health and social service needs segmentation methodology developed using CARE's THE SIGNS Study data to the Berlin Ageing Study data, and subsequently developing a grant proposal for the BUA-NUS Global Health Exploration Project.



Health Communication, Community-Based Health and Social Care Services

Evaluating an Enhanced Community of Care (ECoC) model for high-risk older adults in public rental housing in Singapore: What Works, Why and for Whom? (ECoC-WoW)

This study responded to an invitation by the World Health Organisation to conduct research to accelerate Universal Health Coverage in light of population ageing in ASEAN countries. This project sought to evaluate the effectiveness of ECoC in terms of enhancing patient activation levels and health utilization among poor comorbid older adults. However, the project could not be completed due to the Covid-19 pandemic.



Prescription Medication Label Improvement for Singaporean Elderly (PROMISE)

The research project aimed to enable the implementation of prescription medication labels that are appropriate for elderly Singaporeans. The study provided the necessary evidence to introduce and support innovations in current medication labelling practices and related implementation research. PROMISE largely involved gathering the perspectives of several stakeholders in the public primary healthcare setting (i.e., elderly patients, family caregivers, pharmacists / pharmacy technicians, and healthcare administrators) using various research methods.



**Steps to Avoid Falls in the Elderly:
Translating Research into Practice (SAFE-TRIP)**

The project aimed to identify and evaluate innovative strategies for implementing the evidence-based SAFE-TRIP programme in the community. There were three target implementation sites for the project: (i) community / community-based centres; (ii) day cares and (iii) home-based.

Publications

CARE published 24 peer-reviewed papers in scientific journals.

1. Ang S, Malhotra R. The filial piety paradox: Receiving social support from children can be negatively associated with quality of life. *Social Science & Medicine*. 2022; 303: 114996. <https://doi.org/10.1016/j.socscimed.2022.114996>
2. Ping Y, Visaria A, Suppiah SD, Tan YW, Malhotra R. Prevalence and correlates of medication reminder app 'use and use intention' among older adults. *Exploratory Research in Clinical and Social Pharmacy*. 2022: 100150. <https://doi.org/10.1016/j.rcsop.2022.100150>
3. Ng TKS, Wee HN, Ching JH, Kovalik J-P, Chan A, Matchar DB. Plasma acylcarnitines as metabolic signatures of declining health-related quality of life measure in community-dwelling older adults: A combined cross-sectional and longitudinal pilot study. *Journals of Gerontology: Series A*, 2022. <https://doi.org/10.1093/gerona/glac114>
4. Tang XR, Zarisfi F, Pek PP, Siddiqui FJ, Malhotra R, Kwan YH, Tiah L, Ho AFW, Ong MEH. Emergency department utilisation among older adults – protocol for a systematic review of determinants and conceptual frameworks. *Plos One*. 2022; 17(6): e0265423. <https://doi.org/10.1371/journal.pone.0265423>
5. Sung P, Chan A. Care needs profiles and their association with caregiver burden among community-dwelling older adults with cognitive impairment. *Dementia and Geriatric Cognitive Disorders*. 2022; 51:340–347. <https://doi.org/10.1159/000525999>
6. Oh YB, Suppiah SD, Tan YW, Chia MH, Malhotra R. Conformity of prescription medication labels in Singapore with label format and content recommendations. *Journal of Pharmacy Practice and Research*. 2022; 52: 427–437. <https://doi.org/10.1002/jppr.1824>
7. Tan LT, Ostbye T, Visaria A, Malhotra R. Derivation and establishment of the validity and reliability of the CASP-11-SG quality of life scale among community-dwelling older adults. *Quality of Life Research*. 2023; 32, 295–306. <https://doi.org/10.1007/s11136-022-03238-4>
8. Balasubramanian I, Finkelstein E, Malhotra R, Ozdemir S, Malhotra C. Healthcare cost trajectories in the last two years of life among patients with a solid metastatic cancer: A prospective cohort study. *JNCCN – Journal of the National Comprehensive Cancer Network*. 2022; 20, 997–1004. <https://doi.org/10.6004/jnccn.2022.7038>
9. Afable SB, Cruz G, Saito Y, Malhotra R. Normative values of hand grip strength of older Filipinos aged 60 to 85 years. *Aging and Health Research*. 2022; 2(4), 100108. <https://doi.org/10.1016/j.ahr.2022.100108>

10. Sung P, Hashim N, Malhotra R, Chan A. Met and unmet needs of older adults with cognitive impairment, and burden and benefits of their family caregivers. *Alzheimer Diseases & Associated Disorders*. 2022; 36(4): 300–306. <https://doi.org/10.1097/WAD.0000000000000529>
11. Wong T-H, Tan TXZ, Loo LM, Chua WC, lau PTC, Ang ASH, Goo JTT, Chan KC, Nguyen HV, Nadkarni NV, Matchar DB, Seow DCC, Ng YS, Chan A, Fook-Chong S, Tang TY, Ong MEH, Malhotra R. Negative and positive experiences of caregiving among family caregivers of older blunt trauma patients. *Plos One*. 2022; 17(10): e0275169. <https://doi.org/10.1371/journal.pone.0275169>
12. Lee J, Shafiq M, Malhotra R, Ozdemir S, Teo I, Malhotra C. Trajectories of health-related quality of life patients with advanced cancer during the last year of life: Findings from the COMPASS study. *BMC Palliative Care*. 2022; 21, 183. <https://doi.org/10.1186/s12904-022-01075-3>
13. Ozdemir S, Chaudhry I, Tan SNG, Teo I, Malhotra C, Malhotra R, Finkelstein EA, COMPASS writing group. Variation in patient-reported decision-making roles in the last year of life among metastatic cancer patients: A longitudinal study. *Medical Decision Making*. 2023;43(2):203–213. <https://doi.org/10.1177/0272989X221131305>
14. Sung P, Lee MJ, Chan A. Lonely in a crowd: Social isolation profiles and caregiver burden among family caregivers of community-dwelling older adults with cognitive impairment. *Journal of Aging and Health*. 2022. <https://doi.org/10.1177/08982643221137939>
15. Maulod A, Rouse S, Lee A, Ravindran M, Hazirah, M., Goh V, Diyana A, Low LL, Malhotra R, Chan A. Ethics of participation and social inclusion of older persons in research: Lessons learnt from the Covid-19 pandemic in Singapore. *BMC Supplement in Health Research Policy and Systems*. 2022; 20(Supplement 1):126. <https://dx.doi.org/10.1186/s12961-022-00930-2>
16. Malhotra R, Tan YW, Suppiah SD, Tay SS, Tan NC, Liu J, Koh GC, Chan A, Vaillancourt R, PROMISE Study Group. Pharmaceutical pictograms: User-centred redesign, selection and validation. *PEC Innovation*. 2023; 100116. <https://doi.org/10.1016/j.pecinn.2022.100116>
17. Sung P, Chia A, Chan A, Malhotra R. Reciprocal relationship between lifelong learning and volunteering among older adults. *Journals of Gerontology: Series B*. 2023; gbad003, <https://doi.org/10.1093/geronb/gbad003>
18. Visaria A, Aithal S, Malhotra R. Digital technology use, in general and for health purposes, by older adults in Singapore. *Aging and Health Research*. 2023; 3(1): 100117. <https://doi.org/10.1016/j.ahr.2023.100117>
19. Lim SH, Malhotra R, Ostbye T, Ang SY, Ng XP, Agus N, Aloweni F. Sensitivity and specificity of three screening tools for frailty in hospitalized older adults. *International Journal of Nursing Studies*. 2023; 139: 104435. <https://doi.org/10.1016/j.ijnurstu.2022.104435>

20. Jung JH, Ang S, Malhotra R. Volunteering, religiosity, and quality of life in later life: Evidence from Singapore. *Aging & Mental Health*. 2023. <https://doi.org/10.1080/13607863.2023.2169247>
21. Suppiah SD, Tan YW, Tay SSC, Tan VSY, Tan NC, Tang WE, Chan A, Koh GCH, Malhotra R, PROMISE 6 Study Group. Challenges encountered by pharmacy staff in using prescription medication labels during medication counselling with older adults and solutions employed: A mixed-methods study. *Exploratory Research in Clinical and Social Pharmacy*. 2023; 9: 100226. <https://doi.org/10.1016/j.rcsop.2023.100226>
22. Malhotra C, Chaudhry I, Shafiq M, Malhotra R. Three distinct symptom profiles among older adults with severe dementia: A latent class analysis. *Palliative & Supportive Care*. 2023; 1-8. <https://doi.org/10.1017/S1478951523000068>
23. Suppiah SD, Malhotra R, Tan YW, Jessup RL, Lita SJC, Tang WE, Beauchamp, A. Prevalence of health literacy and its correlates from a national survey of older adults: Implications for pharmacy practice. *Research in Social and Administrative Pharmacy*. 2023. Volume 19, Issue 6, June 2023, Pages 906-912. <https://doi.org/10.1016/j.sapharm.2023.02.013>
24. Kiuchi S, Aida J, Cooray U, Osaka K, Chan A, Malhotra R, Peres MA. Education-related inequalities in oral health among older adults: Comparing Singapore and Japan. *Community Dentistry and Oral Epidemiology*. 2023. <https://doi.org/10.1111/cdoe.12846>

Research Briefs

Research briefs at CARE present policy or practice-oriented summaries of research undertaken by CARE.

Research Brief Series 14:

Oral Health, Vision and Hearing
Status of Older Adults
participating in a Nationwide
Community-Based Screening
Programme in Singapore

*Seema Aithal, Abhijit Visaria,
Rahul Malhotra*

Research Brief Series 15:

A Qualitative Evaluation of
Nationwide Community-Based
Screening Programme for Older
Adults: Oral Health, Vision and
Hearing

Arthur Chia, Atiqah Lee

Research Brief Series 16:


A Profile of Family Caregivers of
Older Adults in Singapore

*Jeremy Lim-Soh, Nur Diyana
Binte Azman, Ha-Linh Quach,
Veronica Shi Min Goh,
Rahul Malhotra*

Conference Presentations

S/N	Name of Conference	Date and venue	Participants from CARE
1.	<p>IARU Aging, Longevity and Health</p> 	<p>19-21 Oct 2022, Copenhagen</p>	<p>Dr Angelique Chan, Ms Vanessa Koh, Dr Pildoo Sung</p>
2.	<p>The Gerontological Society of America 2022 Annual Scientific Meeting</p> 	<p>2-6 Nov 2022, Indianapolis</p>	<p>Dr Jeremy Lim-Soh, Dr Rahul Malhotra, Dr Pildoo Sung</p>
3.	<p>The 95th Annual Meeting of the Japan Sociological Society</p> 	<p>12-13 Nov 2022, Osaka</p>	<p>Dr Pildoo Sung</p>

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S/N	Name of Conference	Date and venue	Participants from CARE
4.	<p>33rd REVES Meeting</p> 	21-23 Nov 2022, Halifax	Dr Rahul Malhotra, Dr Abhijit Visaria

In the News



S/N	Title	Media Outlet	Date
1.	<u>Better work, care options needed as S'pore set to be 'super-aged' society</u>	The Straits Times	9 May 2022
2.	<u>No secrets to ageing well</u>	MEDICUS, The Duke-NUS online magazine	24 May 2022
3.	<u>Critical for S'pore to unlock 'longevity dividend' as people live longer: DPM Heng</u>	The Straits Times	25 Aug 2022
4.	<u>Study finds 'filial piety paradox': Help from more children may not be helpful for elderly parents</u>	The Straits Times	4 Sept 2022
5.	<u>Study finds 'filial piety paradox': Help from more children may not be helpful for elderly parents</u>	Shin Min Daily	4 Sept 2022

S/N	Title	Media Outlet	Date
6.	<u>Seeing the Silver Lining</u>	[TheAlumNUS], NUS Alumni online magazine	10 Oct 2022
7.	<u>Conference co-hosted by CARE addresses demographic transitions facing an ageing Asia</u>	Duke-NUS Medical School News Highlights	11 Nov 2022
8.	<u>Duke-NUS scientists feature prominently in prestigious rankings of top global researchers</u>	Duke-NUS Medical School News Highlights	15 Nov 2022
9.	<u>What can the world learn from China's "zero-Covid" lockdown?</u>	Vox	31 Jan 2023
10.	<u>Sarawak keen to learn from S'pore on managing ageing society, says minister</u>	The Star	28 Feb 2023
11.	<u>Here are 3 new 'Cs' for an ageing Singapore</u>	Channel News Asia <i>Commentary</i>	4 Mar 2023
12.	<u>Daily Cuts – S1E157: The 3 new 'Cs' Singapore needs to age well</u>	Channel News Asia 93.8FM, Asia First	6 Mar 2023
13.	Discussion on the Commentary: Here are 3 new 'Cs' for an ageing Singapore	Channel News Asia 93.8FM, Singapore Today	10 Mar 2023
14.	<u>Insights into Care and Ageing</u>	NUS Office of Alumni Relations, "WoW: Ignite – Care in a Rapidly Ageing Society" Programme	27 Mar 2023

Education Programmes

CARE organised one conference, six research methods workshops, six expert programmes, one industry outreach session and one roundtable.

Conference

Ageing at the time of crisis: "Understanding needs, navigating new challenges",
Conference with Association of Pacific Rim Universities (APRU) – Online, 10–11 November 2022

The conference was co-organised by CARE and the School of Public Affairs at Zhejiang University. It brought together more than 120 international experts and scholars to discuss global ageing issues. Together, 48 abstract and 5 poster presentations were held. 668 participants attended the conference.



Research Methods Workshops

S/N	Title	Date	Trainer
1.	Causal Inference in Social Research	20-21 April 2022 Online via Zoom	Dr Abhijit Visaria
2.	Latent Class Analysis	19 August 2022 Online via Zoom	Dr Pildoo Sung
3.	Designing and Conducting Focus Group Discussions (FGD) in Qualitative Research: Theory and Practice	11-12 January 2023 Duke-NUS Medical School	Dr Arthur Chia and Ms Atiqah Lee
4.	Designing and Conducting Qualitative Interviews for Health-Related Research Methods	15-16 February 2023 Online via Zoom	Dr Ad Maulod, assisted by Ms Sasha Rouse
5.	Group-Based Trajectory Modelling (GBTM): A Novel Approach to Longitudinal Analysis	9 March 2023 Duke-NUS Medical School	Dr Jeremy Lim-Soh and Dr Rahul Malhotra
6.	Conducting Thematic Analysis for Qualitative Research	29-30 March 2023 Online via Zoom	Dr Ad Maulod, assisted by Ms Sasha Rouse

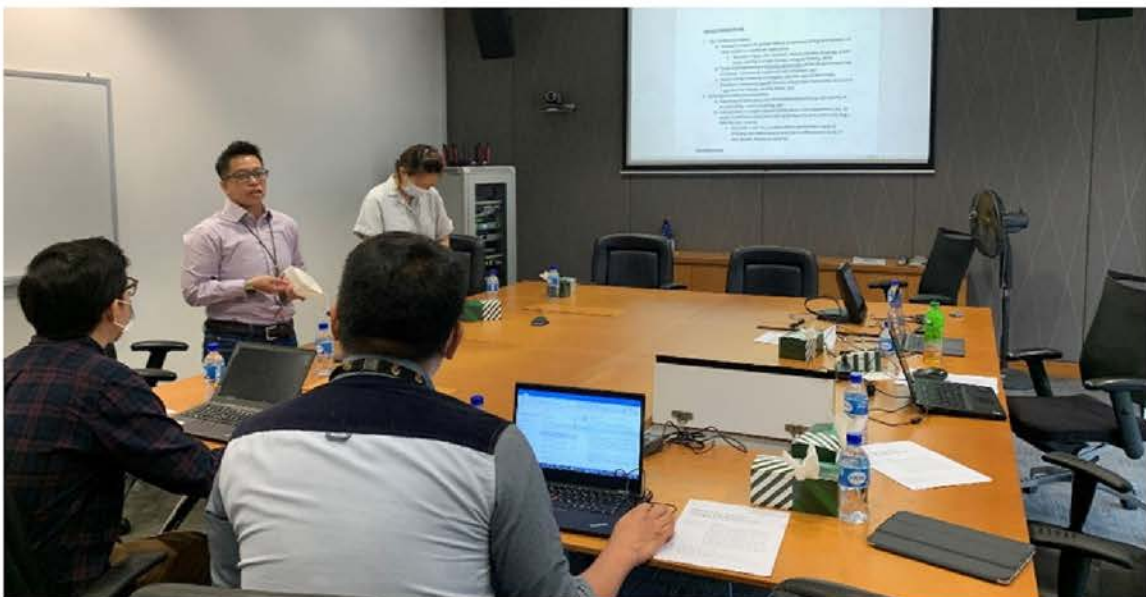
Expert Programmes

S/N	Title	Date*	Presenter
1.	Ageing and Health in the Philippines	13 May 2022	Dr Grace T. Cruz
2.	Disability of Older Adults in China: Theoretical Reflection and Policy Implications	27 May 2022	Dr Feng Qiushi
3.	Caring for the Caregivers- A Singapore Perspective	7 July 2022	Dr Mythily Subramaniam
4.	Oral Health, General Health, and Quality of Life of Older People	5 August 2022	Prof Marco A Peres
5.	Enriching and Mobilizing Participation of Whampoa's Elder Residents (EMPOWER): A Mixed-Methods Theory-Based Evaluation	23 February 2023	Dr Aw Su
6.	Composition and Dynamics of Social Networks Among Older Singaporeans	31 March 2023	Dr Pildoo Sung

*All the Expert Programmes were held online

Industry Outreach

An industry outreach session was organised with the Agency for Integrated Care on 30 May 2022 whereby the participants learnt from facilitators Dr Ad Maulod and Ms Hazirah Mohamed (Senior Research Associate at CARE at the time) on how to develop cultural competencies in the design and implementation of eldercare programmes. Participants had a robust discussion on the importance of cultural engagement and sensitivities in design principles.



Roundtable

"Understanding the Challenges of Fall Prevention in Older Adults", 24 November 2022.

The roundtable engaged stakeholders with expertise in fall prevention in Singapore, to examine the factors influencing successful implementation of community-based fall prevention programmes. Invited stakeholders consisted of clinicians, allied health professionals and researchers who were experienced in delivering and/or managing fall prevention programmes. The roundtable used a participatory problem-solving approach - Group Model Building. Insights generated through discussions were used to develop a conceptual model of the facilitators and barriers influencing implementation of community-based fall prevention programmes. The model details various hypotheses on clinicians' barriers in referring older adults into programmes and factors influencing older adults' engagement and adherence in such programmes. It also explores potential policy options to enhance the facilitators and reduce the barriers identified.

The roundtable was led by Vanessa Koh (PhD Student in the Programme in Health Services & Systems Research (HSSR)) and co-led by Assoc Prof Angelique Chan and Prof David Matchar (Inaugural Director of the Programme in HSSR). Lai Wei Xuan (PhD Student in HSSR), June Lee (Senior Research Associate at the time) and Dulcie Rosario (Intern) facilitated in documenting the insights.



Networks

National

Ageing Research Network (ARN)

ARN was formed in February 2016 to nurture collaborations between the different ageing research centres in Singapore. Other than CARE at Duke-NUS, members include the Ageing Research Institute for Society and Education, Nanyang Technological University (ARISE), Centre for Healthy Longevity, National University Health System (CHL), Centre for Productive Longevity, National University of Singapore (CPL), Centre for Research on Ageing and the Environment, National University of Singapore (CARE, NUS), Centre for Research on Successful Ageing, Singapore Management University (ROSA), Geriatric Education and Research Institute (GERI), Gerontology Research Programme, National University of Singapore (GRP), Institute of Geriatrics and Active Ageing, Tan Tock Seng Hospital (IGA), Next Age Institute, National University of Singapore (NAI) and Research Centre for Excellence in Active Living for the Elderly, Nanyang Technological University (LILY).

International

Association of Pacific Rim Universities (APRU) Ageing Hub

CARE is a member of the APRU Research Hub on Population Ageing, formed to deepen the collaboration among junior and senior researchers on ageing in the Asia-Pacific region. Launched in 2015, the objective of the hub is to share best practices and showcase research, engage with governments and industry, and to stimulate new and relevant research collaborations. CARE is the centre hub for hosting the APRU Ageing Programme from 2021 to 2023. Assoc Prof Chan is the Population Aging Program Director and Chair of the Population Aging Scientific Committee. APRU's 12th Population Ageing Virtual Conference was co-organised by CARE and Zhejiang University on 10–11 November 2022.

International Alliance of Research Universities (IARU)

Ageing, Longevity and Health Initiative

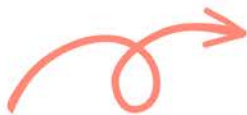
CARE was invited to join the IARU Ageing, Longevity and Health Initiative in 2018. The group examines issues of ageing, longevity and health with a multidisciplinary approach. The initiative encompasses biological, psycho-social, cultural and public health policy issues arising from changing human population age demographics and the global human longevity transition. NUS is represented by Assoc Prof Chan, Chair of the Steering Committee of IARU-Ageing, Longevity, and Health Initiative.

Internships

CARE hosted 6 interns from local institutions such as National University of Singapore, Nanyang Technological University and Temasek Polytechnic. Their role involved assisting with data management and analysis, transcribing and qualitative coding, as well as education and communication.



From left to right:
Sri Sanjana, Yang Xilei,
Saiyara Makhnoon



From left to right:
Annabelle Chan,
Keenan Leong,
Dulcie Rosario



Staff Retreats



Retreat held on 9 March 2022, where colleagues learnt about pottery making.



Retreat held on 24 February 2023, where colleagues first learnt how to drum and coordinate with other musical instruments.

Later, teams competed with each other in a cook-off.



The winning team comprised of (from left to right): Malcolm Ravindran, Ha-Linh Quach, Jeremy Lim-Soh, Angelique Chan and Sumithra Suppiah.





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