

RGC Ref. No.: UGC/FDS15/M01/19 <p>(please insert ref. above)</p>
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**RESEARCH GRANTS COUNCIL
COMPETITIVE RESEARCH FUNDING SCHEMES FOR
THE LOCAL SELF-FINANCING DEGREE SECTOR**

FACULTY DEVELOPMENT SCHEME (FDS)

Completion Report
(for completed projects only)

<p><u>Submission Deadlines:</u></p> <ol style="list-style-type: none"> 1. Auditor's report with unspent balance, if any: within <u>six</u> months of the approved project completion date. 2. Completion report: within <u>12</u> months of the approved project completion date.
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Part A: The Project and Investigator(s)

1. Project Title

Adapting to the challenges of the tenth decade of life: A mixed method study with
Hong Kong near-centenarians and centenarians

2. Investigator(s) and Academic Department(s) / Unit(s) Involved

Research Team	Name / Post	Unit / Department / Institution
Principal Investigator	LAU Hi-po / Associate Professor	Department of Counselling and Psychology, Hong Kong Shue Yan University
Co-Investigator(s)	CHEUNG Karen Siu-Lan / Director	Mindlink Research Centre
Co-Investigator(s)	CHAN Cecilia Lai-Wan / Emeritus Professor	Department of Social Work and Social Administration, University of Hong Kong
Co-Investigator(s)	MARTIN Peter / University Professor	Human Development and Family Studies, Iowa State University
Co-Investigator(s)	SIU Joey Chung-yue / Assistant Professor	Felizberta Lo Padilla Tong School of Social Sciences Saint Francis University
Co-Investigator(s)	LUK James Ka-Hay / Chief of Service	Department of Medicine and Geriatrics, Fung Yiu King Hospital
Co-Investigator(s)	CHAN Grace Man-yee / Business Director	The Hong Kong Council of Social Service

3. Project Duration

	Original	Revised	Date of RGC / Institution Approval (must be quoted)
Project Start Date	01/01/2020	N/A	N/A
Project Completion Date	31/12/2022	30/06/2023	28/09/2020
Duration (in month)	36	42	28/09/2020
Deadline for Submission of Completion Report	31/12/2023	30/6/2024	28/09/2020

4.4 Please attach photo(s) of acknowledgement of RGC-funded facilities / equipment.

N/A

Part B: The Final Report

5. Project Objectives

5.1 Objectives as per original application

- 1. To identify the multidimensional challenges, coping resources and coping strategies of Hong Kong Chinese NCCs.*
- 2. To test a resource model of adaptation by examining the associations among coping resources, coping strategies and well-being outcomes of local NCCs*
- 3. To investigate the impacts of family caregiver well-being, use of gerontechnology and indigenous wisdom on the quality of life and adaptation of local NCCs.*
- 4. To inform care practices and policies catering to the needs of local families with NCCs.*

5.2 Revised objectives

Date of approval from the RGC: 06 July 2021

Reasons for the change:

The unprecedented COVID-19 pandemic has broken out since Jan 2020. The project has been stopped due to the severe infection risk of elderly persons and the closure of most elderly services. An additional objective (RO5) has been added to illuminate the experience of these families with elderly of advanced age under such an enormous challenge.

- 1. To identify the multidimensional challenges, coping resources and coping strategies of Hong Kong Chinese NCCs.*
- 2. To test a resource model of adaptation by examining the associations among coping resources, coping strategies and well-being outcomes of local NCCs.*
- 3. To investigate the impacts of family caregiver well-being, use of gerontechnology and indigenous wisdom on the quality of life and adaptation of local NCCs.*
- 4. To inform care practices and policies catering to the needs of local families with NCCs*
- 5. To explore the caregiving journey of caregivers and lived experience of NCCs under the COVID-19 pandemic*

5.3 Realisation of the objectives

(Maximum 1 page; please state how and to what extent the project objectives have been achieved; give reasons for under-achievements and outline attempts to overcome problems, if any)

All the project objectives have been achieved fully considering the context of data collection.

1. To identify the multidimensional challenges, coping resources and coping strategies of Hong Kong Chinese NCCs.
2. To test a resource model of adaptation by examining the associations among coping resources, coping strategies and well-being outcomes of local NCCs.

Objectives 1 and 2 have been achieved by (i) comparing the rates of frailty, functional independence, psychological distress, social activities, and financial sufficiency of NCCs between the current cohort and the previous cohort in 2011 as disseminated through the press conference in March 2023, and (ii) attaining a typology of multidimensional successful aging by latent class analysis in NCCs published on Shum et al (2024).

3. To investigate the impacts of family caregiver well-being, use of gerontechnology and indigenous wisdom on the quality of life and adaptation of local NCCs.

Objectives 3 has been achieved by (i) elaborating the use of gerontechnology and indigenous wisdom among caregivers as disseminated through the press conference in March 2023, and (ii) examining the positive aspects of caregiving and its factors as discussed in Lau et al (under review).

4. To inform care practices and policies catering to the needs of local families with NCCs.

Objective 4 has been achieved by the numerous knowledge exchange activities and the social impact footprints of this project (e.g., the 40+ media mentions).

5. To explore the caregiving journey of caregivers and lived experience of NCCs under the COVID-19 pandemic

Objective 5 has been achieved by our published findings on the well-being of NCCs and their caregivers under the COVID-19 pandemic through such as Shum et al (2024), Lau et al (under review) and the contents of the press conference.

5.4 Summary of objectives addressed to date

Objectives <i>(as per 5.1/5.2 above)</i>	Addressed <i>(please tick)</i>	Percentage Achieved <i>(please estimate)</i>
1. To identify the multidimensional challenges, coping resources and coping strategies of Hong Kong Chinese NCCs.	✓	100%
2. To test a resource model of adaptation by examining the associations among coping	✓	100%

resources, coping strategies and well-being outcomes of local NCCs.		
3. To investigate the impacts of family caregiver well-being, use of gerontechnology and indigenous wisdom on the quality of life and adaptation of local NCCs.	✓	100%
4. To inform care practices and policies catering to the needs of local families with NCCs.	✓	100%
5. To explore the caregiving journey of caregivers and lived experience of NCCs under the COVID-19 pandemic	✓	100%

6. Research Outcome

6.1 Major findings and research outcome

(Maximum 1 page; please make reference to Part C where necessary)

The data of this project was collected during the heights of the COVID-19 pandemic in 2021 and 2022. Through telephone interviews with 151 family caregivers of community-dwelling older adults aged 95 or above referred from 31 social service units, we collected information about the demographics, physical health, mental health, social well-being, functional health, and daily lives of near-centenarians and centenarians (NCCs, i.e., adults aged 95 or above), as well as the demographics, physical and mental health, caregiving stress and gains, and the use of technology in caregiving among their caregivers. Employing a mixed methods approach, we collected quantitative information through structured questionnaires as well as conducted qualitative interviews with the caregivers.

Compared with the findings from the first Hong Kong Centenarian Study conducted in 2011, we found significant declines in the physical, functional, and social well-being of NCCs from the current study. Although both rounds of centenarian study documented a comparable level of comorbidity and polypharmacy rates, more NCCs were regarded as frail in the current study (55.3%) compared to the previous in 2011 (23.4%). Also, the current study found a higher percentage of NCCs with a dementia diagnosis (37.7% in 2021 vs 6.5% in 2011), a lower percentage of ADL independence (46.0%-65.3% in 2021 vs 75.3%-94.8% in 2011), and fewer personal outdoor activities (45.3% in 2021 vs 75.3% in 2011) and visits to community centers (20.9% in 2021 vs 44.2% in 2011). About one-third of NCCs and almost half of their caregivers experienced social isolation, and 70.5% caregivers had an average household income less than the average of a four-person household, indicating inadequate social and financial support to these families.

Despite the decline in the multidimensional well-being of NCCs and the stresses experienced by their caregivers, we found a diversity of adjustment levels indicating resilience in these families. Using latent class analysis with indicators of successful aging (e.g., sensory impairment, ambulation, dementia diagnosis, perceived happiness, perceived economic status, etc.), we found three latent classes among the NCCs– Class 1 (46.6%) who are overall frail with poor mobility, cognition and functioning; Class 2 (37.0%) who are non-ambulatory but with fair cognition and functioning; and Class 3 (16.4%) who are generally in good health. The class membership was unrelated to gender, living arrangement, education, hospitalization, and age; but are predictive of the number of chronic illnesses, presence of recent weight loss and participation in household chores. These findings are elaborated in Shum et al (2023) on International Journal of Aging and Human Development.

We also found a diversity of adjustment among the family caregivers. About 18.2% indicated experiencing a high level of caregiving burden, whereas 41.1% reported significant gratification from their caregiving. Using multiple regression, we found higher age, higher IADL independence, lower ADL independence and the absence of hearing impairment in NCCs, as well as better self-rated health and absence of domestic helper in the caregivers predicted greater caregiving gains. Qualitative interviews with the caregivers revealed three themes in relation to the gratification they experienced in their caregiving for their NCCs, including mastering skills that render high quality care, fulfilling family love and obligation, and preparing for their own graceful aging. It appears that there are various routes to attainment satisfaction in providing care to their oldest-old relatives, and from such a challenging role caregivers attained a sense of mastery, companionship and a glimpse of what longevity is like for them. These findings are elaborated in Lau et al (2023) which is under second review with the Journal of Applied Gerontology.

6.2 Potential for further development of the research and the proposed course of action

(Maximum half a page)

Centenarian studies serve both the scientific value to understand the impetus and the condition of longevity as well as the practical value to provide an empirical basis for developing policies in relation to aging. Thus, with global longevity on the rise and ‘golden-agers-caring-for-advanced-agers’ being increasing common, centenarian studies are blossoming in different countries and cities. Hong Kong Centenarian Studies 1 and 2 has been featured on the International Centenarian Consortium. The findings of this study will be shared with international scholars and made available for comparison studies where appropriate, even though the project has ended. There are at least two lines of further development of this research. First, we plan to conduct the third Hong Kong Centenarian Study in 2030 as a continuation of this longitudinal endeavor. Second, the findings of the current study have been shared with the Sau Po Centre on Aging of The University of Hong Kong. Based on their recent caregiver support project funded by the Jockey Club Charities Trust, there is already plan for providing augmented services and collecting data from caregivers of centenarians from 2025 onwards, as these caregivers are identified as one that requires additional support.

7. Layman’s Summary

(Describe in layman’s language the nature, significance and value of the research project, in no more than 200 words)

Globally, rising longevity has become a double-edged sword for societies. This study is the second centenarian study in Hong Kong. The objective was to evaluate the multidimensional well-being of adults of advanced age as well as those of their family caregivers in the territory. The data was collected during the heights of the COVID-19 pandemic. Through phone interviews with 151 caregivers referred from 31 social service units in 2021-2022, we were able to collect unique information about the livelihood of community-dwelling older adults aged 95 or above and their families under such unprecedented challenges. We captured the decline of physical health and social well-being among the oldest-old population compared to their counterparts interviewed in 2011. Yet, through latent class analysis, we found that the oldest-old population remains a diverse one when it comes to the fulfillment of various indicators of successful aging. In addition, this study elaborated on the difficulties and gratification experienced by caregivers in providing care to this vulnerable population during the pandemic. Our findings provide a crucial empirical basis for the development of relevant policies to address the drastic increase in the oldest-old population, support aging-in-place for frail older adults, and the development of family-oriented elderly care.

Part C: Research Output**8. Peer-Reviewed Journal Publication(s) Arising Directly From This Research Project**

(Please attach a copy of the publication and/or the letter of acceptance if not yet submitted in the previous progress report(s). All listed publications must acknowledge RGC's funding support by quoting the specific grant reference.)

The Latest Status of Publications				Author(s) (denote the corresponding author with an asterisk*)	Title and Journal / Book (with the volume, pages and other necessary publishing details specified)	Submitted to RGC (indicate the year ending of the relevant progress report)	Attached to this Report (Yes or No)	Acknowledged the Support of RGC (Yes or No)	Accessible from the Institutional Repository (Yes or No)
Year of Publication	Year of Acceptance (For paper accepted but not yet published)	Under Review	Under Preparation (optional)						
2023	2023	N/A	N/A	Shum, E. N., Lau, B. H., Cheung, K. S., Chan, C. L., Siu, J. C., Luk, J. K., Kwan, J. S., Chan, G. M., Pat, L. Y., & Martin, P.	The International Journal of Aging and Human Development, 2023; 0(0)	Did not submit before	Yes (Attachment 1)	Yes	Yes
N/A	N/A	Yes	Yes	Lau, Bobo; Pat, Lian Ying Chun; Siu, Joey Chung-yue; Shum, Eric Ngai-yin	Journal of Applied Gerontology	Did not submit before	Yes (Attachment 2)	Yes	Yes

9. Recognized International Conference(s) In Which Paper(s) Related To This Research Project Was / Were Delivered

(Please attach a copy of each conference abstract)

Month / Year / Place	Title	Conference Name	Submitted to RGC (indicate the year ending of the relevant progress report)	Attached to this Report (Yes or No)	Acknowledged the Support of RGC (Yes or No)	Accessible from the Institutional Repository (Yes or No)
11/2022 Indianapolis US	Feeling vs Being Connected: Differentiating Loneliness and Isolation in Near- and Centenarians	Gerontological Society of America (GSA) Annual Meeting 2022	Did not submit before	Yes (Attachment 3)	Yes	Yes

11/2022 Indianapolis US	Survival of the Fittest or Frailtest? Comparing The Health of Centenarians Over a 10-Year Period	Gerontological Society of America (GSA) Annual Meeting 2022	Did not submit before	Yes (Attachment 4)	Yes	Yes
11/2022 Indianapolis US	Love or Obligation to “See Them Through:” Burdens and Gains in Caregiving for Centenarians	Gerontological Society of America (GSA) Annual Meeting 2022	Did not submit before	Yes (Attachment 5)	Yes	Yes
11/2022 Indianapolis US	Comparing Successful Aging of Near-Centenarians and Centenarians: Findings From 2011 and 2021/22	Gerontological Society of America (GSA) Annual Meeting 2022	Did not submit before	Yes (Attachment 6)	Yes	Yes
5/2023 Gothenburg, Sweden	Successful aging in Hong Kong near-centenarians and centenarians: A latent class approach.	International Centenarian Consortium	Did not submit before	Yes (Attachment 7)	Yes	Yes
11/2023 Tampa FL, US	Profiles of Two Cohorts of Near-Centenarians and Centenarians: Findings from Hong Kong Centenarian Study 1 And 2	Gerontological Society of America (GSA) Annual Meeting 2023	Did not submit before	Yes (Attachment 8)	Yes	Yes

10. Whether Research Experience And New Knowledge Has Been Transferred / Has Contributed To Teaching And Learning

(Please elaborate)

The PI was teaching two courses in gerontology in Hong Kong Shue Yan University during the project period – PSY216 Psychology of Aging and COUN390 Gerontological Counselling. The qualitative data from caregivers’ narratives of their caregiving experiences and their use of technology for caregiving, and the quantitative data on the diversity of successful aging fulfilment by the NCCs were featured in these two courses to illustrate the situation of golden-agers-caring-for-advanced-agers, gerontechnological adoption, and the condition of longevity in Hong Kong.

11. Student(s) Trained

(Please attach a copy of the title page of the thesis)

Name	Degree Registered for	Date of Registration	Date of Thesis Submission / Graduation
N/A	N/A	N/A	N/A

12. Other Impact

(e.g. award of patents or prizes, collaboration with other research institutions, technology transfer, teaching enhancement, etc.)

A press conference has been conducted in March 2023 with the support of Hong Kong Council of Social Service to elaborate the findings of this project and to promote the use of gerontechnology in community care. The project has attracted over 40 media coverages, in the form of off-/online news articles, TV programs and radio programs in Hong Kong, Singapore and the Mainland China. The findings of the project were elaborated with 70+ frontline professionals in a seminar organized by the Hong Kong Sheng Kung Hui Welfare Council in June 2023.

Even after the conclusion of the project period, the findings of this project were presented at a seminar, namely “Embracing Longevity: Wisdom, Challenges and Opportunities Series 1” conducted by the Sau Po Centre on Ageing, The University of Hong Kong in March 2024. The seminar was opened for HKU students and public.

The findings of this project, in particular how caregivers used gerontechnologies and information and communication technologies to foster their caregiving among the family and the formal care networks, have inspired and espoused the development of an IDS(CRG) project on intergenerational digital divide. The project has been awarded funding in 2022 and began in 2023 (Ref no.: UGC/IDS(C)15/H01/22)

13. Statistics on Research Outputs

	Peer-reviewed Journal Publications	Conference Papers	Scholarly Books, Monographs and Chapters	Patents Awarded	Other Research Outputs (please specify)	
No. of outputs arising directly from this research project	1	6	0	0	Type 0	No.

14. Public Access Of Completion Report

(Please specify the information, if any, that cannot be provided for public access and give the reasons.)

Information that Cannot Be Provided for Public Access	Reasons
N/A	N/A