

RGC Ref. No.:
UGC/FDS17/M01/16
(please insert ref. above)

**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><b><u>Submission Deadlines:</u></b></p> <ol style="list-style-type: none"> <li>1. Auditor's report with unspent balance, if any: within <b>six</b> months of the approved project completion date.</li> <li>2. Completion report: within <b>12</b> months of the approved project completion date.</li> </ol>
--

**Part A: The Project and Investigator(s)**

**1. Project Title**

Effects of combined cognitive and exercise training for older adult with mild cognitive impairment

認知與運動結合治療對輕度認知功能障礙長者的成效

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

Research Team	Name / Post	Unit / Department / Institution
Principal Investigator	LAW Lan-fong/ Associate Professor	Occupational Therapy/Medical & Health Sciences/ Tung Wah College
Co-Investigator(s)	MOK Vincent Chung- tong/ Professor, Chief of Neurology, Assistant Dean	Division of Neurology/ Department of Medicine and Therapeutics / Chinese University of Hong Kong
Co-Investigator(s)	YAU Matthew Kwai-sang/ Professor, Dean	Occupational Therapy/ School of Medical & Health Sciences/ Tung Wah College

**3. Project Duration**

	Original	Revised	Date of RGC / Institution Approval <i>(must be quoted)</i>
Project Start Date	1 January 2017	NA	NA
Project Completion Date	31 December 2019	NA	NA

Duration ( <i>in month</i> )	36 months	NA	NA
Deadline for Submission of Completion Report	31 December 2020	NA	NA

## **Part B: The Final Report**

### **5. Project Objectives**

#### 5.1 Objectives as per original application

1. *To investigate the effects of a combined cognitive and exercise programme on memory and executive function in elderly individuals with mild cognitive impairment.*
2. *To investigate whether a combined cognitive and exercise programme can improve the motor performance in elderly individuals with mild cognitive impairment.*
3. *To examine whether a combined cognitive and exercise programme can reduce functional decline in elderly individuals with mild cognitive impairment*
4. *To investigate whether a combined cognitive and exercise programme can promote a sense of satisfaction in elderly individuals with mild cognitive impairment.*
5. *To examine whether a combined cognitive and exercise programme can reduce the sense of burden in the carers of elderly individuals with mild cognitive impairment.*

#### 5.2 Revised objectives

Date of approval from the RGC: N/A

---

Reasons for the change: N/A

---



---

1. /A
- 2.
3. ..

#### 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)*

A total of 145 participants were recruited and completed the funded study in the participating NGO and Hospital Authority (HA) research sites. The actual recruited sample size is smaller than the planned sample size of 160 due to the clash of other similar researches or government pilot programmes targeting similar population, such as the 'Dementia Community Support Scheme (2017-2019)' and the 'Post Diagnostic Support in Dementia Care Programme (Jockey Club)', during the period of this funded project. Data were analyzed to examine the effects of the combined cognitive and exercise programme in elderly individuals with mild cognitive impairment as stated in the project

objectives. Results of an initial pilot have found positive benefits of the combined cognitive and exercise programme on cognitive functions, functional status and carer's burden. The initial results have been published and disseminated, thus far, in a peer-reviewed journal and 2 international conferences. Analysis from the full-scale study have been completed to investigate the effects of the programme as stated in all the project objectives. Further findings will be disseminated via publications and conferences.

#### 5.4 Summary of objectives addressed to date

<b>Objectives</b> <i>(as per 5.1/5.2 above)</i>	<b>Addressed</b> <i>(please tick)</i>	<b>Percentage Achieved</b> <i>(please estimate)</i>
1. Investigate effect on memory and executive function	✓	100%
2. Investigate effect on motor performance	✓	100%
3. Investigate effect on reducing functional decline	✓	100%
4. Investigate effect on sense of satisfaction	✓	100%
5. Investigate effect on reducing sense of burden in the carers	✓	100%

## 6. Research Outcome

### 6.1 Major findings and research outcome

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

Major findings:

1. A functional task exercise programme using functional task as a media of combined cognitive and exercise intervention is feasible and beneficial to older adults with mild cognitive impairment.
2. A functional task exercise programme using functional task as a media of combined cognitive and exercise intervention is more effective compared to single exercise and single cognitive trainings in improving cognitive functions and functional status in older adult with mild cognitive impairment.
3. Functional task exercise could improve general cognitive function, memory, and executive function in older adults with mild cognitive impairment.
4. Functional task exercise could improve functional status of older adult with mild cognitive impairment and reduce carer's burden.

Research outcome:

1. The functional task exercise programme are used in the participating 1NGO and 2 HA research sites as treatment for clients with mild cognitive impairment.
2. Findings have been presented in 2 international conferences as reported in part C.
3. Findings have been published and will further be reported in peer-reviewed journals as listed in part C.

### 6.2 Potential for further development of the research and the proposed course of action *(Maximum half a page)*

1. Promoting the use of the functional task exercise programme as a treatment for clients with cognitive impairment by delivering training courses in collaboration with the Hong Kong Occupational Therapist Association.
2. Investigating the feasibility of delivering the functional task exercise programme in client's home to enhance early access of intervention via telecommunication networks through application of further research funding.

## 7. Layman's Summary

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

Dementia is an extremely disabling condition impacting on older adults, their families and health care system worldwide. There would be one new case in every 3 seconds as estimated in 2015.

In Hong Kong, the prevalence of dementia doubles every five years after the age of 60. About one in ten of those aged  $\geq 70$  and about one in three aged  $\geq 85$  have dementia. The number of people with dementia will be more than double in 2036.

The aim of this project is to investigate the effects of a combined cognitive and exercise programme, using functional tasks as a means of intervention, for improving cognitive functions and functional status older adults with mild cognitive impairment.

The results of this study will provide evidence to validate the potential benefits of the combined cognitive and exercise intervention on cognition and functional status in people with mild cognitive impairment. The positive findings from this research project

further provide practitioners and care providers in the field of elderly care with more knowledge about the potential synergistic effects of combining cognitive and exercise training for those with cognitive impairment. The success of this research project will provide evidence that further research can be based on.

**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)						
2019				Lawla Law*, Vicent Mok, Matthew Yau	Effect of Combined cognitive and exercise training on cognitive function and functional status in older adults with mild cognitive impairment: A randomized controlled pilot trial. Alzheimer's research & therapy, 11(98)	No	Yes	Yes	Yes
		2020		Lawla Law*, Vicent Mok, Matthew Yau, Kenneth Fong	Functional task exercise versus single cognitive/exercise training in older adults with mild cognitive impairment - A four-arm randomized control trial/ JAMA Internal Medicine	No	No	Yes	Pending
		2020		Lawla Law*, Vicent Mok, Matthew Yau, Kenneth Fong	Effects of functional task exercise on everyday problem-solving abilities and functional status in older adults with mild cognitive impairment - A	No	No	Yes	Pending

					randomized control trial / JAMA Internal Medicine				
			2020	Lawla Law*, Vicent Mok, Matthew Yau, Kenneth Fong	Cognitive correlates of functional status and physical performance in older adults with mild cognitive impairment /The Journals of Gerontology, Series A	No	No	Yes	Pending

### 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 <i>(indicate the year ending of the relevant progress report)</i>	Attached to this Report <i>(Yes or No)</i>	Acknowledged the Support of RGC <i>(Yes or No)</i>	Accessible from the Institutional Repository <i>(Yes or No)</i>
8/2019 Singapore	Functional task exercise – A beneficial challenge for older adult with mild cognitive impairment	13th International Congress of the Asian Society Against Dementia & 6th Singapore International Neurocognitive Symposium	No	Yes	Yes	No
10/2019/ Taiwan	Potential effects of functional task exercise on older persons with mild cognitive impairment – a feasibility study	11th Asia/Oceania Congress of Gerontology and Geriatrics 2019	No	Yes	Yes	No

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

*(Please elaborate)*

1. Students from the Bachelor of Science in Occupational Therapy programme were recruited as student helpers to assist conduction of interventions in the research.
2. The new knowledge of combining or using single component exercise and cognitive training in cognitive rehabilitation for people with cognitive impairment has contributed to

the content of teaching in related courses.

---



---

### 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			

### 12. Other Impact

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

N/A

---



---



---

### 13. Statistics on Research Outputs

No. of outputs arising directly from this research project	Peer-reviewed Journal Publications	Conference Papers	Scholarly Books, Monographs and Chapters	Patents Awarded	Other Research Outputs (please specify)	
					Type	No.
	1 published 2 under review 1 preparing	2	0	0	N/A	



**14. Public Access Of Completion Report**

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

<b>Information that Cannot Be Provided for Public Access</b>	<b>Reasons</b>
Nil	