

110年度高等教育深耕計畫

主軸計畫成果報告書

主軸一 「長材茂學，教學創新計畫」

分項計畫1-2：推動學生及教師學習能力認證

執行策略：1-2-A 「教師發展，多元成就」

社群名稱：讓數據說話-疾病型態與風險因子之大數據

指導單位：教育部技職司

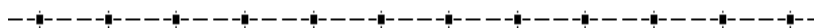
主辦單位：長庚科技大學

承辦單位：長庚科技大學護理系

活動日期：中華民國 110年 5 月 1 日~110年 11 月 30 日

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壹、活動檢核

1-2-A 跨校跨領域教師增能社群成果檢核表			
社群名稱	讓數據說話-疾病型態與風險因子之大數據		
社群執行起迄日期	110年 5月 1日 至 110年 11月 30日	社群人數	5 人 (本社群之成員)
核定經費	30,000 元	實際執行經費	30,001 元
社群活動執行內容重點概述	<ol style="list-style-type: none"> 1. 透過社群師生互動，透過活動萌想及創意設計，舉辦 ICOPE 相關活動，以利後續可實際運用在社區實務中。 2. 落實跨領域合作模式，延請慈濟醫院副研究員曾奕翔博士，與校內不同屬性的教師進行合作及討論，利用 Meta 方式進行研究的產出。 3. 邀請國防醫學院公衛所教師進行合作討論，利用健保資料庫分析家暴婦女與異常生產事件風險，後續持續進行投稿事項。 4. 透過校內社群老師討論與合作，針對有興趣的議題，提出想法與溝通，達到跨組合作，增加研究多元性。 		
是否依據核定之質量化指標執行？			
<input checked="" type="checkbox"/> 是 <input type="checkbox"/> 否，原因_____			
質化指標	<ol style="list-style-type: none"> 1. 教學課程較少提及國內資料庫應用及內涵。 2. 教師群有認識及應用次級資料庫的需求及必要。 	執行成效	<ol style="list-style-type: none"> 1. 透過跨院、跨校，提升校內社群教師群合作的意願與興趣。 2. 透過 Meta 工作坊，提升教師群關注 Meta 進行研究之動機與興趣。
量化指標	<ol style="list-style-type: none"> 1. 目前教師群較少發表資料庫串聯的學術性文章。 	執行成效	<ol style="list-style-type: none"> 1. 利用 Meta 工作坊已著手進行 Tai Chi 介入對社區老人之肌力、跌倒成效-SR and Meta，後續完成再進行投稿。 2. 將 Meta 及資料分析過程實際應用應在 1-2 門教學中(流行病學方法論、次級資料分析)

是否與其他主軸活動進行成效倍增？ <input type="checkbox"/> 是，主軸__執行策略____ <input checked="" type="checkbox"/> 否	
辦理此活動較著重之面向？ <input checked="" type="checkbox"/> 教學面 <input type="checkbox"/> 公共面 <input type="checkbox"/> 社會面 <input type="checkbox"/> 特色面	
檢討 與 建議	1. 透過社群提供四技學生進行 ICOPE 活動設計經費，學生回饋皆持正面肯定。 2. Meta 工作坊一次無法將所有課程及實作部分完成，建議未來可有一系列的工作坊，有利於產能輸出。 3. 有助於校內教師群跨校、跨領域合作，提升學術發表能力。

承辦人(簽章)： 

承辦主軸主管(簽章)：簡淑慧

教學發展與資源中心查核日期： 年 月 日 單位簽章：
 查核人簽章：

貳、活動經費預算與實際支出明細表

單位：新台幣元

編序	預算項目	預算支出			實際支出	差異說明
		單價	數量	總額		
1	膳食費	/個		1,600 元	1,849 元	
2	印刷費	/份		2,000 元	2,485 元	
3	講座鐘點費	1,000/小時		2,000 元	2,000 元	
		2,000/小時		12,000 元	18,000 元	增加諮詢與討論次數
4	交通費	/趟		0 元	0 元	
5	材料費	/份		500 元	942 元	
6	教學業務費	/份		10,500 元	3,498 元	
7	雜支	/份		1,400 元	1,227 元	
總計					30,001 元	

承辦人：

林嘉玲

承辦單位主管：

主軸計畫主持人：簡淑慧

說明：

1. 預算項目請就原修正申請書之支出預算明細資料填寫。
2. 實際支出欄位，請就實際執行的支出金額填寫，並說明差異原因。
3. 如有學校配合款支付之項目，務必填寫清楚。
4. 申請人應於計畫結束後一個月內繳交成果報告書(電子檔及紙本各一份)、滿意度問卷調查表及活動歷程檔案(含紀錄紙本、照片、影音檔、活動滿意度調查結果分析等)。
5. 為展現社群成果、擴大教師交流，成果報告書將進行紙本實體或線上展示。
6. 社群成員須參加教學發展與資源中心期末辦理之成果發表會。
7. 如本表不敷使用，請自行增列。

參、活動時程

肆、活動議程 (不足請自行增列)

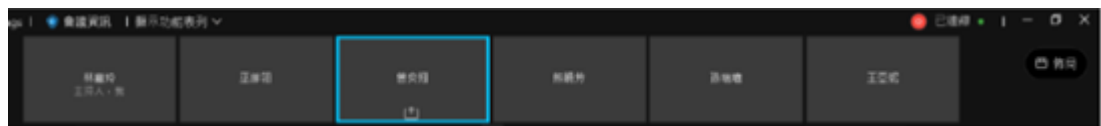
時間	地點	主題	主講者
8/24 1-4 pm	B1廣場	1. ICOPE活動設計與執行	林嘉玲助理教授 四技護理系學生
9/2 17-18 pm	N208	1. 討論社群10月舉辦工作坊主題及方向	王亞妮講師
9/30 10-12 pm	N208	1. 討論 10/12 Meta 統合分析工作坊內容 2. 討論 10/12 Meta 統合分析工作坊之流程 3. 社群人員工作分配	林嘉玲助理教授/ 慈濟醫院副研究員 曾奕翔 助理教授
9/30 17-18 pm	N208	1. 討論 10/12 Meta 統合分析 paper搜尋方向及主題	林嘉玲助理教授
10/9 10-12 pm	電話討論	1. 討論10/12舉辦工作坊實際案例討論(Tai Chi介入對社區老人肌力、跌倒成效-RCT)	林嘉玲助理教授/ 慈濟醫院副研究員 曾奕翔 助理教授
10/12 9-12 pm	線上課程(使用webex進行)	1. Meta統合分析內涵與趨勢 2. 運用實際案例進行示範 3. 結果分析與討論	林嘉玲助理教授/ 慈濟醫院副研究員 曾奕翔 助理教授
11/19 9-12 pm	國防醫學院 704研究室	1. 研究議題討論 2. 以健保資料庫進行婦女家暴事件與異常生產事件相關性 3. 身體組成與血糖相關性資料分析 4. 議題分析與討論	林嘉玲助理教授/ 國防醫學院公衛所 簡戊艦副教授 鍾其祥助理教授

11/23 12-14 pm	NB105 長照情 境教室	1. 亞健康獨居長者情境討論 2. 情境教案拍攝與剪輯	林嘉玲助理教授 王亞妮講師 洪瑋鴻 剪輯
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伍、活動簽到表

IcOPE 活動設計與執行		出席簽到表			
時間	110年8月24日(星期二)	12時0分	4時0分	地點	13, 72, 70, 75, 78
出席人員	廖昌鳳				
	陳佳君				
	林嘉玲				
	趙國欽				
	吳雪菁				
	高鈞玉				
	侯佳儀				
缺席	姓名	原因	姓名	原因	
列席					
紀錄			主席		

10/12 線上課程簽到:曾奕翔、林嘉玲、王亞妮、巫菲翎、吳雪菁、孫瑞瓊、熊曉芳



陸、活動海報(若無，空白即可)

柒、活動照片



社群小組討論情形



社群小組討論情形



社群小組討論情形



社群討論



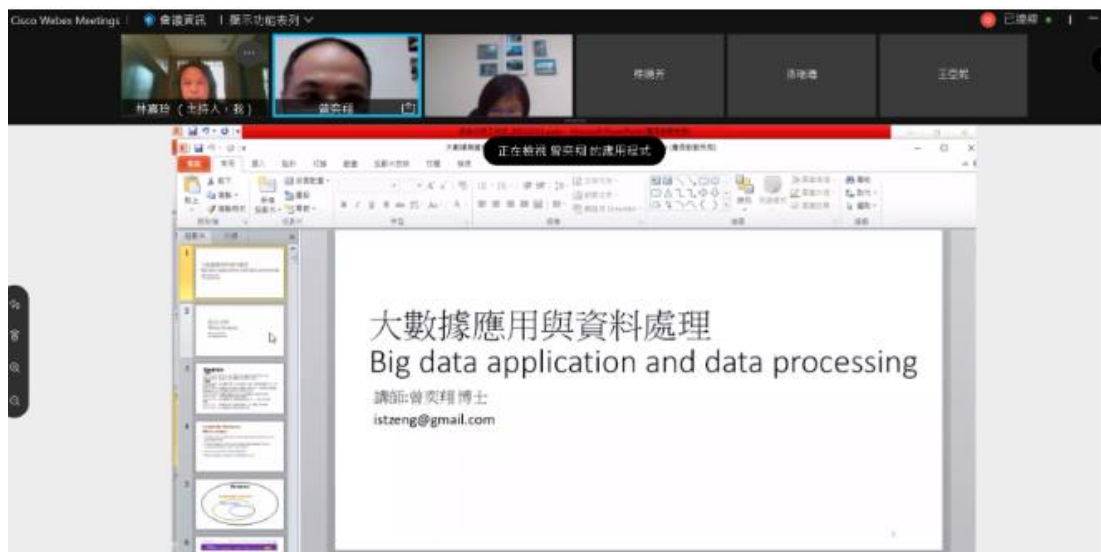
社群討論



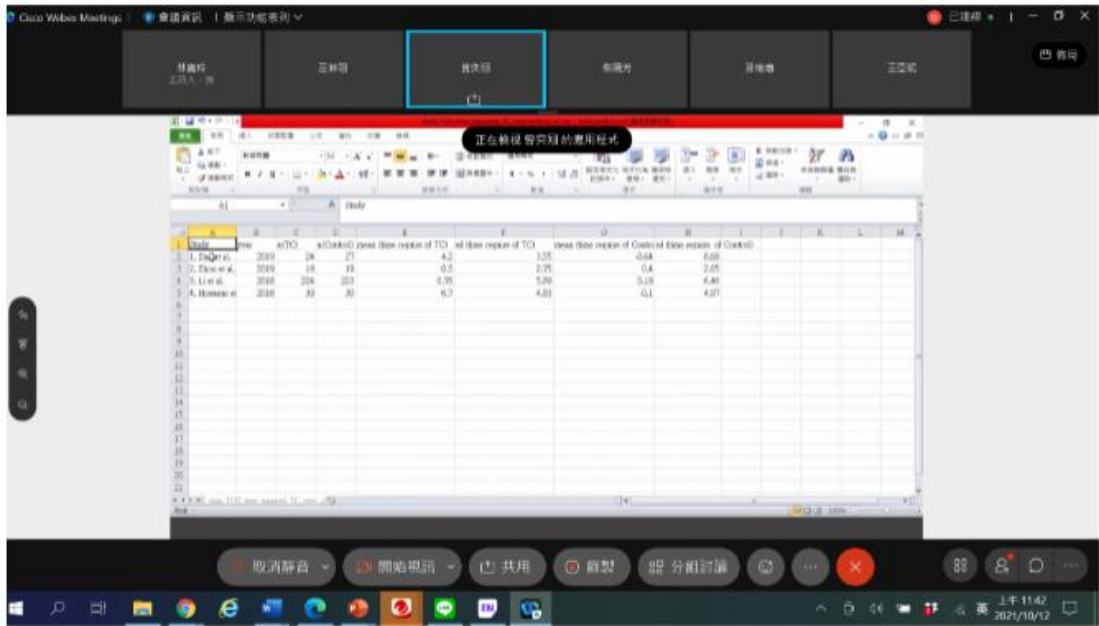
老人肌力活動設計與執行



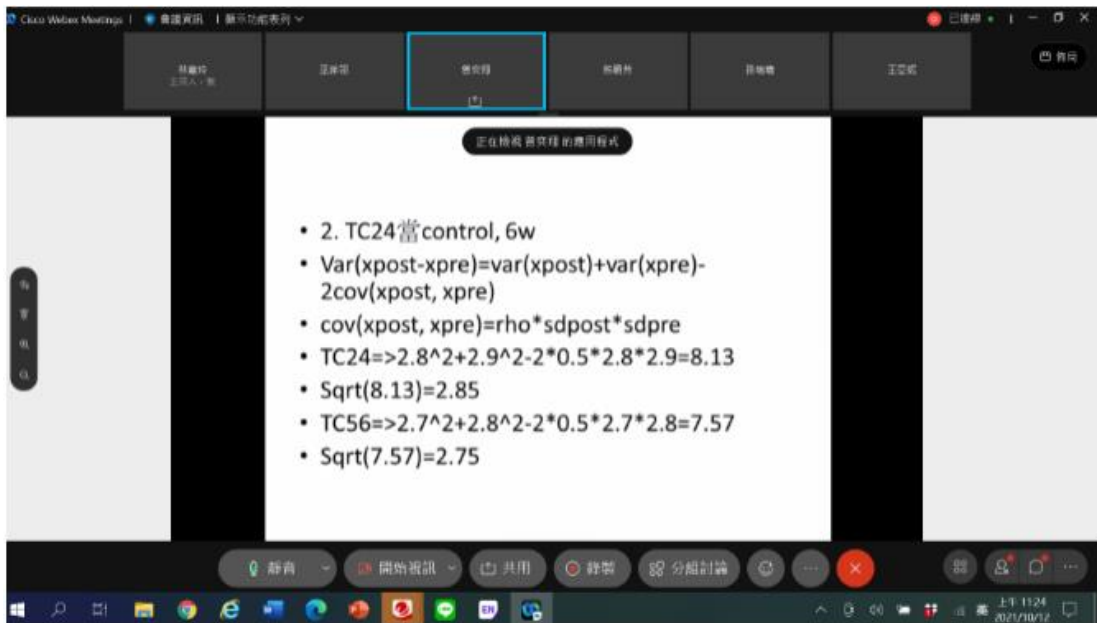
Meta 社群工作坊



Meta 社群工作坊



Meta 社群工作坊



Meta 社群工作坊

捌、講座/授課內容(含諮詢內容等)

統合分析工作坊

曾奕翔
2021.10.12

Effects of Tai Chi on muscle strength, physical function, cognitive and fall with frailty or sarcopenia in community older adults: a systematic review and meta-analysis

- 方法
- 2021年10月在以下5個電子資料庫中進行了系統的文獻檢索：PubMed、CINAHL、Embase、PEDro和Cochrane Central Register of Controlled Trials，不限語言或出版年份。本系統評價納入了隨機對照試驗，這些研究檢視Tai Chi對患有衰弱或肌少症(sarcopenia)的社區老人的肌力、身體功能、認知及跌倒的效果。

Meta-analysis (1)

- Definitions and word origins
- Glass, 1976
- "the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings"
- **Meta-analysis combines statistical result**
- 統計的統計

Meta-analysis (2)

- Literature review
- Extraction data
- Pooled model
- Fixed effects and random effects

Meta-analysis (3)

- Count data
- Continuous data
- Hozo's converting formulas

1. Tai Chi and whole-body vibrating therapy in sarcopenic men in advanced old age: a clinical randomized controlled trial

Table 3 Baseline characteristics of study subjects

	TC	WBV	Con	$F_{(2)}$	P
<i>N</i>	24	28	27	-	-
Age (year)	88.8±3.7	89.5±4.4	87.5±3.0	1.15	0.35
Height (cm)	168.4±6.7	165.8±6.25	163.8±6.08	0.12	0.89
Weight (kg)	63.1±6.6	64.2±6.7	66.2±10.8	0.61	0.55
BMI (kg/m ²)	22.4±3.1	22.8±2.2	23.8±3.9	0.91	0.41
Medications, category	4.6±1.4	5.4±2.7	5.8±3.3	1.92	0.59

Medications include: 1) neurological drugs; 2) analgesics; 3) hypertension, anxiety, antidepressants; 4) cardiovascular drugs; 5) hypertensive drugs; 6) statins; 7) anticoagulants; 8) analgesics; 9) hypoglycemic agents; 10) antibiotics; and 11) others.

TC: the Tai Chi group; WBV: the whole-body vibration group; CON: the control group; BMI: body mass index (kg/m²).

Table 1. Descriptive statistics of all outcome variables across groups at baseline (Week 0) and post (Week 12).

	Tai Chi Group N=28		Control Group N=25		Tai Chi Group N=28		F-Value*	p	Group x Time
	Week 0	Week 12	Week 0	Week 12	Week 0	Week 12			
Age	75.40	75.40	75.40	75.40	75.40	75.40	0.20	0.65	0.00
Height	170.00	170.00	170.00	170.00	170.00	170.00	0.20	0.65	0.00
Weight	75.00	75.00	75.00	75.00	75.00	75.00	0.20	0.65	0.00
MMSE	24.00	24.00	24.00	24.00	24.00	24.00	0.20	0.65	0.00
Chang's Balance	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00
Chang's Mobility	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00
Chang's Balance	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00
Chang's Mobility	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00

*F for gender, #p for age, weight, height, and the score of MMSE by gender, #p for gender, #p for age, weight, height, and the score of MMSE by gender, #p for gender, #p for age, weight, height, and the score of MMSE by gender.

3. Effectiveness of a Therapeutic Tai Ji Quan Intervention vs a Multimodal Exercise Intervention to Prevent Falls Among Older Adults at High Risk of Falling: A Randomized Clinical Trial

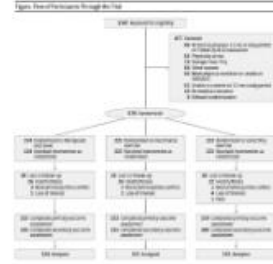


Table 2. Descriptive statistics of all outcome variables across groups at baseline (Week 0) and post (Week 12).

	Tai Chi Group N=28		Control Group N=25		Tai Chi Group N=28		F-Value*	p	Group x Time
	Week 0	Week 12	Week 0	Week 12	Week 0	Week 12			
Age	75.40	75.40	75.40	75.40	75.40	75.40	0.20	0.65	0.00
Height	170.00	170.00	170.00	170.00	170.00	170.00	0.20	0.65	0.00
Weight	75.00	75.00	75.00	75.00	75.00	75.00	0.20	0.65	0.00
MMSE	24.00	24.00	24.00	24.00	24.00	24.00	0.20	0.65	0.00
Chang's Balance	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00
Chang's Mobility	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00

	TCQ (n=28)	Multimodal (n=25)	Overall (n=53)
Baseline	10.00	10.00	10.00
Week 12	10.00	10.00	10.00

*F for gender, #p for age, weight, height, and the score of MMSE by gender, #p for gender, #p for age, weight, height, and the score of MMSE by gender.

	Tai Chi Group N=28		Control Group N=25		Tai Chi Group N=28		F-Value*	p	Group x Time
	Week 0	Week 12	Week 0	Week 12	Week 0	Week 12			
Age	75.40	75.40	75.40	75.40	75.40	75.40	0.20	0.65	0.00
Height	170.00	170.00	170.00	170.00	170.00	170.00	0.20	0.65	0.00
Weight	75.00	75.00	75.00	75.00	75.00	75.00	0.20	0.65	0.00
MMSE	24.00	24.00	24.00	24.00	24.00	24.00	0.20	0.65	0.00
Chang's Balance	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00
Chang's Mobility	10.00	10.00	10.00	10.00	10.00	10.00	0.20	0.65	0.00

4. Tai Chi Chuan can improve balance and reduce fear of falling in community dwelling older adults: a randomized control trial

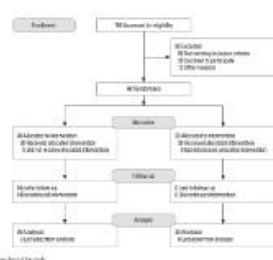


Table 1. Demographic characteristics of participants

Variable	Control n=30	Intervention n=30	P-value
Age	70.5 (5.2)	70.8 (5.1)	0.92
Sex			
Male	15 (50%)	15 (50%)	
Female	15 (50%)	15 (50%)	
Marital status			
Married	20 (66.7%)	20 (66.7%)	
Widow	10 (33.3%)	10 (33.3%)	
Education			
Illiterate	10 (33.3%)	10 (33.3%)	
High school	10 (33.3%)	10 (33.3%)	
University	10 (33.3%)	10 (33.3%)	
Residence			
Urban	15 (50%)	15 (50%)	
Rural	15 (50%)	15 (50%)	
Income			
Low	10 (33.3%)	10 (33.3%)	
Middle	10 (33.3%)	10 (33.3%)	
High	10 (33.3%)	10 (33.3%)	
Number of children			
0	10 (33.3%)	10 (33.3%)	
1	10 (33.3%)	10 (33.3%)	
2	10 (33.3%)	10 (33.3%)	
3	10 (33.3%)	10 (33.3%)	

Values are presented as number (%).

Table 2. Balance and fear of falling between two groups before and after intervention

Variable	Pre-test			Post-test		
	Control n=30	Intervention n=30	P-value	Control n=30	Intervention n=30	P-value
Broad Gait and Co-test score	10.0 (5.0)	10.2 (5.1)	0.94	13.0 (4.0)	12.5 (4.1)	0.51
Timed Up and Go	7.0 (2.0)	7.0 (2.0)	0.98	6.0 (2.0)	6.0 (2.0)	0.98
Timed Walk	6.2 (1.2)	6.2 (1.2)	0.98	5.5 (1.2)	5.5 (1.2)	0.98
Timed Stand	12.0 (2.0)	12.0 (2.0)	0.98	11.0 (2.0)	11.0 (2.0)	0.98
Timed Sit to Stand	20.0 (2.0)	20.0 (2.0)	0.98	19.0 (2.0)	19.0 (2.0)	0.98

Values are presented as mean (standard deviation).

Table 3. Balance and fear of falling in two groups before and after intervention

Variable	Control group		Pre-test		Intervention group		P-value
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	
Broad Gait and Co-test score	10.0 (5.0)	10.2 (5.1)	10.2 (5.1)	10.2 (5.1)	13.0 (4.0)	12.5 (4.1)	0.001
Timed Up and Go	7.0 (2.0)	6.8 (2.0)	7.0 (2.0)	6.8 (2.0)	6.0 (2.0)	6.0 (2.0)	0.001
Timed Walk	6.2 (1.2)	6.2 (1.2)	6.2 (1.2)	6.2 (1.2)	5.5 (1.2)	5.5 (1.2)	0.001
Timed Stand	12.0 (2.0)	12.0 (2.0)	12.0 (2.0)	12.0 (2.0)	11.0 (2.0)	11.0 (2.0)	0.001
Timed Sit to Stand	20.0 (2.0)	20.0 (2.0)	20.0 (2.0)	20.0 (2.0)	19.0 (2.0)	19.0 (2.0)	0.001

Values are presented as mean (standard deviation).

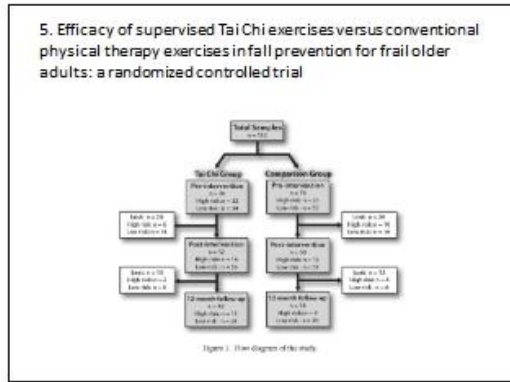


Table 4. Characteristics of the groups at the beginning of the study (n=100)

Characteristic	Tai Chi (n=50)	Comparison (n=50)	P-value
Gender			
Male	25	25	0.997
Female	25	25	0.997
Marital status			
Married	35	35	0.997
Widow	15	15	0.997
Age	Mean = 70.5 SD = 5.2	Mean = 70.8 SD = 5.1	0.927
Education			
Illiterate	10	10	0.997
High school	10	10	0.997
University	10	10	0.997
Residence			
Urban	15	15	0.997
Rural	15	15	0.997
Income			
Low	10	10	0.997
Middle	10	10	0.997
High	10	10	0.997
Number of children			
0	10	10	0.997
1	10	10	0.997
2	10	10	0.997
3	10	10	0.997

Values are presented as number (%).

Table 5. Mean number of falls per participant in each group

Risk Group	Mean (SD)		P-value
	Tai Chi group	Comparison group	
All (n=100)	3.7 (0.8)	3.8 (0.8)	0.659
Low risk (n=25)	1 (0)	1 (0)	0.997
High risk (n=25)	5.2 (0.8)	6.0 (0.7)	0.004
Lowest risk (n=27)	0 (0)	1 (0)	0.277
Highest risk (n=20)	5.0 (0.8)	6.0 (0.7)	0.004

SD, Standard deviation; P, P-value.

6. Effects of Tai Chi training on arterial compliance and muscle strength in female seniors: a randomized clinical trial

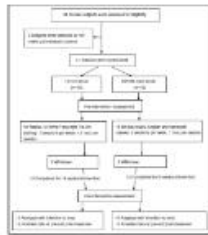


Figure 1. Study design (before being started on study).

Table 1. Demographic characteristics of the participants.

	Control group (n=16)	Tai Chi group (n=16)	p-value
Age (year)	68.7 ± 2.8	69.0 ± 2.6	0.92*
Weight (kg)	60.0 ± 9.1	59.0 ± 8.8	0.84*
Weight (kg)	58.8 ± 8.8	57.1 ± 8.4	0.92*
Body mass index (kg/m ²)	24.0 ± 1.5	24.4 ± 1.1	0.88*
PHQ-9 score	8.2 ± 1.9	8.0 ± 2.2	0.88*
No. with hypertension	3/16	1/16	0.89*
Physical activity level before intervention			
Light (<30 METs)	0	4	0.44
Moderate (30-59 METs)	4	4	
Heavy (>60 METs)	8	8	

*Values significant at p < 0.05. PHQ-9, PHQ-9 score; PHQ-9, PHQ-9 score of the New Health Status questionnaire.

Table 3. Arterial compliance before and after intervention.

Compliance index	Control group		Tai Chi group	
	Pre	Post	Pre	Post
Large artery (CI) (ml/beat/100)	10.1 ± 2.7	9.4 ± 3.8	10.3 ± 2.7	11.0 ± 3.0*
Small artery (CI) (ml/beat/100)	7.6 ± 1.3	7.3 ± 1.1	7.8 ± 1.3	7.5 ± 1.1*

*Pre to post difference significant at p < 0.05.

Table 2. Knee strength before and after intervention.

Peak force as a % of body weight (kg/kg)		Control group		% of subjects	Tai Chi group		% change
		Pre	Post		Pre	Post	
Concentric	Extensors	8.8 ± 0.51	8.7 ± 0.33	11	8.7 ± 0.51	9.1 ± 0.42	4.6
	Flexors	8.3 ± 0.11	8.2 ± 0.16	14	8.3 ± 0.22	8.37 ± 0.20	0.8
Eccentric	Extensors	1.04 ± 0.06	1.20 ± 0.01	10	1.21 ± 0.44	1.40 ± 0.26	14.3*
	Flexors	1.61 ± 0.24	1.60 ± 0.24	8	0.71 ± 0.32	0.79 ± 0.29	11.2

*Pre to post difference significant at p < 0.05.

7. A randomised controlled trial of Tai Chi and resistance exercise on bone health, muscle strength and balance in community-living elderly people

Table 1. Characteristics of participants in the study.

Characteristic	Tai Chi group (n=16)		Resistance group (n=16)		p-value
	Control (n=16)	Intervention (n=16)	Control (n=16)	Intervention (n=16)	
Age (years)	68.7 ± 2.8	69.0 ± 2.6	68.7 ± 2.8	69.0 ± 2.6	0.92
Weight (kg)	60.0 ± 9.1	59.0 ± 8.8	60.0 ± 9.1	59.0 ± 8.8	0.84
Weight (kg)	58.8 ± 8.8	57.1 ± 8.4	58.8 ± 8.8	57.1 ± 8.4	0.92
Body mass index (kg/m ²)	24.0 ± 1.5	24.4 ± 1.1	24.0 ± 1.5	24.4 ± 1.1	0.88
PHQ-9 score	8.2 ± 1.9	8.0 ± 2.2	8.2 ± 1.9	8.0 ± 2.2	0.88
No. with hypertension	3/16	1/16	3/16	1/16	0.89
Physical activity level before intervention					
Light (<30 METs)	0	4	0	4	0.44
Moderate (30-59 METs)	4	4	4	4	
Heavy (>60 METs)	8	8	8	8	

*Values significant at p < 0.05. PHQ-9, PHQ-9 score; PHQ-9, PHQ-9 score of the New Health Status questionnaire.

Table 2. Percentage change of bone mineral density at the hip and spine during the three intervention groups at 12 months

	TC group (n=10)	RTD group (n=10)	Control group (n=10)	P-value
Mean (s.d.)	(1.1 ± 0.76)	(1.1 ± 0.76)	(1.1 ± 0.76)	
Mean (s.d.)	-0.08 ± 0.37	-0.20 ± 0.38	-0.13 ± 0.38	0.80*
Mean (s.d.)	1.31 ± 0.40	1.27 ± 0.42	0.54 ± 0.42	0.21*
Mean (s.d.)	0.20 ± 0.26	0.20 ± 0.31	0.16 ± 0.30	
Mean (s.d.)	0.05 ± 0.04*	0.04 ± 0.02*	-0.25 ± 0.03	0.01*
Mean (s.d.)	0.38 ± 0.13	0.36 ± 0.14	0.38 ± 0.17	0.92*

*P-value of ANCOVA adjusted for age, gender, weight and height at baseline.
 *P-value of ANCOVA adjusted for age, gender, weight, and height at baseline.
 *P-value of ANCOVA comparing TC or RTD group with control group.

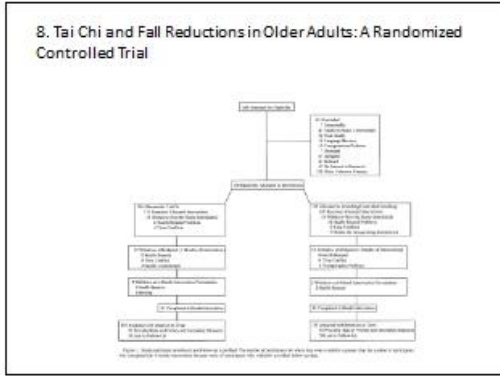


Table 1. Baseline Characteristics of Study Participants by Randomized Group*

	Tai Chi (n=10)	Control (n=10)	P-value
Age, mean (s.d.)	77.0 (6.0)	76.0 (6.0)	0.8
Weight, mean (s.d.)	68.0 (10.0)	67.0 (10.0)	0.8
Height, mean (s.d.)	157.0 (6.0)	156.0 (6.0)	0.8
Body mass index, mean (s.d.)	27.0 (3.0)	27.0 (3.0)	0.8
Gender, n (%)	5 (50)	5 (50)	1.0
Living alone, n (%)	4 (40)	4 (40)	1.0
Medication use, n (%)	10 (100)	10 (100)	1.0
Mean of falls in 12 months, mean (s.d.)	1.0 (1.0)	1.0 (1.0)	1.0
Mean of falls in 6 months, mean (s.d.)	0.5 (0.5)	0.5 (0.5)	1.0
Mean of falls in 3 months, mean (s.d.)	0.2 (0.2)	0.2 (0.2)	1.0
Mean of falls in 1 month, mean (s.d.)	0.1 (0.1)	0.1 (0.1)	1.0
Mean of falls in 1 week, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 day, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 hour, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 minute, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 second, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 millisecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 microsecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 nanosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 picosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 femtosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 attosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 zeptosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0
Mean of falls in 1 yoctosecond, mean (s.d.)	0.0 (0.0)	0.0 (0.0)	1.0

Table 2. Fall Information During 6-Month Intervention, According to Treatment Group*

	Tai Chi (N=9)	Control (N=9)
Falls		
Any falls, n (%)	37 (58)	43 (46)
Participants reporting one fall, n (%)	30 (21)	32 (34)
Participants reporting two falls, n (%)	3 (5)	15 (16)
Participants reporting three or more falls, n (%)	2 (2)	6 (6)
Total falls reported	34	73
Patients with injurious falls, n (%)	7 (7)	17 (18)
Falls resulting in medical care, n (%)	5 (5)	14 (15)

Note: * Based on all available participants who provided fall data during the 6-month intervention period.

Table 1. Summary of Baseline, Baseline, Weighted Baseline and Falls by Group in Intervention Condition*

	Baseline		Weighted Baseline		Falls by Group		Intervention Effect (s.d.)	
	Mean (s.d.)	SE	Mean (s.d.)	SE	Mean (s.d.)	SE	Mean (s.d.)	SE
Age, mean (s.d.)	77.0 (6.0)	0.6	77.0 (6.0)	0.6	77.0 (6.0)	0.6	77.0 (6.0)	0.6
Weight, mean (s.d.)	68.0 (10.0)	1.0	68.0 (10.0)	1.0	68.0 (10.0)	1.0	68.0 (10.0)	1.0
Height, mean (s.d.)	157.0 (6.0)	0.6	157.0 (6.0)	0.6	157.0 (6.0)	0.6	157.0 (6.0)	0.6
Body mass index, mean (s.d.)	27.0 (3.0)	0.3	27.0 (3.0)	0.3	27.0 (3.0)	0.3	27.0 (3.0)	0.3
Gender, n (%)	5 (50)	0.0	5 (50)	0.0	5 (50)	0.0	5 (50)	0.0
Living alone, n (%)	4 (40)	0.0	4 (40)	0.0	4 (40)	0.0	4 (40)	0.0
Medication use, n (%)	10 (100)	0.0	10 (100)	0.0	10 (100)	0.0	10 (100)	0.0
Mean of falls in 12 months, mean (s.d.)	1.0 (1.0)	0.1	1.0 (1.0)	0.1	1.0 (1.0)	0.1	1.0 (1.0)	0.1
Mean of falls in 6 months, mean (s.d.)	0.5 (0.5)	0.05	0.5 (0.5)	0.05	0.5 (0.5)	0.05	0.5 (0.5)	0.05
Mean of falls in 3 months, mean (s.d.)	0.2 (0.2)	0.02	0.2 (0.2)	0.02	0.2 (0.2)	0.02	0.2 (0.2)	0.02
Mean of falls in 1 month, mean (s.d.)	0.1 (0.1)	0.01	0.1 (0.1)	0.01	0.1 (0.1)	0.01	0.1 (0.1)	0.01
Mean of falls in 1 week, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 day, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 hour, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 minute, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 second, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 millisecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 microsecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 nanosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 picosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 femtosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 attosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 zeptosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00
Mean of falls in 1 yoctosecond, mean (s.d.)	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00	0.0 (0.0)	0.00

9. Intense Tai Chi Exercise Training and Fall Occurrences in Older, Transitionally Frail Adults: A Randomized, Controlled Trial

找個範例來看一下-TUG

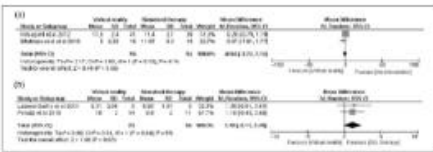


Figure 4. Forest plot of the meta-analysis of TUG Test. (a) Virtual reality versus no intervention. (b) Virtual reality versus standard therapy.

找個範例來看一下-Berg Balance Scale

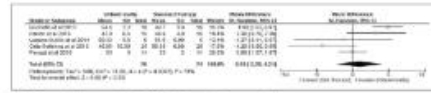
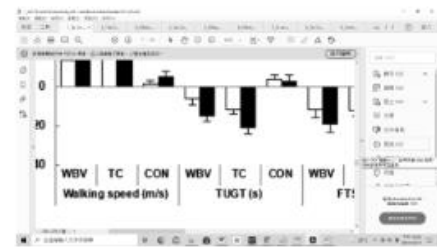


Figure 5. Forest plot of the meta-analysis of Berg Balance Scale virtual reality versus standard therapy.

TUGI

- 1. 8w



	n(TC)	n(Control)	mean (time require of TC)	sd (time require of TC)	mean (time require of Control)	sd (time require of Control)
1. Zhu et al. (2019)	24	27	20.7	4.5	-3.2	3.4

	n(TC)	n(Control)	mean (time require of TC)	sd (time require of TC)	mean (time require of Control)	sd (time require of Control)
1. Zhu et al. (2019)	24	27	4.2	3.55	-0.64	0.68

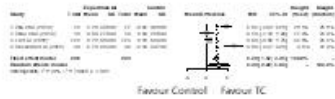
- 2. TC24 當 control, 6w
- $\text{Var}(x_{\text{post}} - x_{\text{pre}}) = \text{var}(x_{\text{post}}) + \text{var}(x_{\text{pre}}) - 2\text{cov}(x_{\text{post}}, x_{\text{pre}})$
- $\text{cov}(x_{\text{post}}, x_{\text{pre}}) = \rho \cdot \text{sd}_{\text{post}} \cdot \text{sd}_{\text{pre}}$
- $\text{TC24} \Rightarrow 2.8^2 + 2.9^2 - 2 \cdot 0.5 \cdot 2.8 \cdot 2.9 = 8.13$
- $\text{Sqrt}(8.13) = 2.85$
- $\text{TC56} \Rightarrow 2.7^2 + 2.8^2 - 2 \cdot 0.5 \cdot 2.7 \cdot 2.8 = 7.57$
- $\text{Sqrt}(7.57) = 2.75$

- 3. Stretching exercise 當 control, 4m
- Stretching exercise $\Rightarrow 6.83^2 + 6^2 - 2 \cdot 0.5 \cdot 6.83 \cdot 6 = 41.6689$
- $\text{Sqrt}(41.6689) = 6.46$
- TJQMBB $\Rightarrow 5.83^2 + 5.94^2 - 2 \cdot 0.5 \cdot 5.83 \cdot 5.94 = 36.6423$
- $\text{Sqrt}(36.6423) = 5.89$

- 4. pure control
- Control=> $4.85^2+5.08^2-2*0.5*4.85*5.08=24.6909$
- Sqrt(24.6909)=4.97
- Intervention=> $4.13^2+5.31^2-2*0.5*4.13*5.31=23.3227$
- Sqrt(23.3227)=4.83

程式

- meta1012 <- read.csv("F:/data_TUG_time_required_TC_intervention_v2.csv",header=TRUE,sep=",")
- m1012 <- metabin(meta1012\$n.TC,meta1012\$mean_time.required.of.TC,meta1012\$sd_time.required.of.TC,meta1012\$n.Control,meta1012\$mean_time.required.of.Control,meta1012\$sd_time.required.of.Control,data = meta1012\$studlab = paste(meta1012\$study,"(",meta1012\$year,")",sep = ""),sm="MD")
- forest(m1012)



```

# m1012
# A forest plot with 2 studies
# The m1012 (MD) 4.8303 ( 4.8303) 4.8303 19.1 24.69
# 2. TC vs All (MD) 4.8303 ( 4.8303) 4.8303 23.3 23.32
# 95% CI for MD: 0.0000 9.6606 ( 9.6606) 9.6606
# Heterogeneity: I-squared = 0.0000, tau-squared = 0.0000, I-squared = 0.0000
# Test for heterogeneity: chi-squared = 0.0000, df = 1, p = 0.9999
# Test for overall effect: z = 0.0000, p = 0.9999
# Test for subgroup effect: I-squared = 0.0000, tau-squared = 0.0000, I-squared = 0.0000
# Details on meta-analytical method:
# - Continuity correction method:
# - Derivatives-based method for tau^2:
# - Continuity method for null-value interval of tau^2 and tau:

```

程式

- meta1012 <- read.csv("F:/data_fall.csv",header=TRUE,sep=",")
- m1012 <- metabin(meta1012\$Event.TC,meta1012\$Total.TC,meta1012\$Event.Control,meta1012\$Total.Control,data = meta1012\$studlab = paste(meta1012\$study,"(",meta1012\$year,")",sep = ""),sm="OR")
- forest(m1012)




```

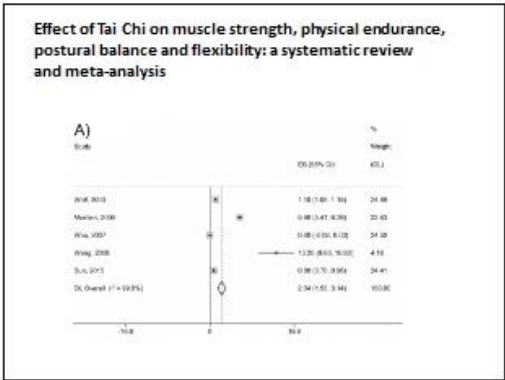
> model2
              (SE)              (SE)
Fixed effects model:  5.2517 (0.0051)  6.0221 (-0.11 + 0.002)
Random effects model:  5.2517 (0.0051)  6.0221 (-0.11 + 0.002)

CLASSIFYING DEPENDENCIES:
var2 = G: var1 = G: F2 = 6.34 (1.0k; 10.3k) | R = 1.00 (1.6k; 1.3k)

Test of heterogeneity:
  D S.F.  P-Value
  6.76   2  0.0329

DETAILS ON META-ANALYTICAL METHOD:
- Model: DerSimonian-Laird
- Inverse-variance-covariance method: REI, tau2
- Model/Var-cov: constant used in calculation of D and var2 (Like RevMan 5)

```



Study	ES	SE	95% CI	P	Weight
Tai Chi	0.75 ± 0.02	0.17 ± 0.01	-0.3 ± 0.8	0.001	8.09
Control	0.77 ± 0.03	0.11 ± 0.01	0.4 ± 0.7	0.001	8.09
Randomized					
Tai Chi	0.25 ± 0.03	0.22 ± 0.03	-0.2 ± 0.7	0.001	4.00
Control	0.75 ± 0.02	0.17 ± 0.01	-0.3 ± 0.8	0.001	8.09
Non-randomized					
Tai Chi	0.7 ± 0.04	0.3 ± 0.04	-0.2 ± 1.6	0.001	0.06
Control	0.7 ± 0.04	0.3 ± 0.04	-0.2 ± 1.6	0.001	0.06
Physical fitness					
Tai Chi	0.8 ± 0.04	0.4 ± 0.04	-0.5 ± 1.0	0.001	0.09
Control	0.8 ± 0.04	0.4 ± 0.04	-0.5 ± 1.0	0.001	0.09
Balance					
Tai Chi	1.8 ± 0.08	0.8 ± 0.07	-0.9 ± 2.0	0.01	0.23
Control	0.8 ± 0.05	0.9 ± 0.05	-0.2 ± 1.0	0.001	0.07
Endurance					
Tai Chi	1.2 ± 0.12	1.2 ± 0.12	-1.0 ± 3.7	0.001	0.12
Control	1.4 ± 0.12	0.5 ± 0.14	0.4 ± 2.4	0.001	0.09
Flexibility					
Tai Chi	1.8 ± 0.25	1.0 ± 0.24	-0.9 ± 4.6	0.01	0.14
Control	1.0 ± 0.10	1.1 ± 0.10	-0.9 ± 2.9	0.001	0.10
Strength					
Tai Chi	0.8 ± 0.08	0.1 ± 0.08	-0.2 ± 1.8	0.001	0.10
Control	0.7 ± 0.08	0.1 ± 0.08	-0.2 ± 1.8	0.001	0.10
Postural balance					
Tai Chi	0.7 ± 0.10	0.7 ± 0.10	-0.7 ± 2.4	0.01	0.10
Control	0.7 ± 0.10	0.7 ± 0.10	-0.7 ± 2.4	0.01	0.10
Flexibility					
Tai Chi	0.8 ± 0.17	0.6 ± 0.17	-0.5 ± 3.0	0.01	0.17
Control	0.8 ± 0.17	0.6 ± 0.17	-0.5 ± 3.0	0.01	0.17
Endurance					
Tai Chi	0.8 ± 0.10	0.4 ± 0.11	-0.6 ± 2.0	0.001	0.10
Control	0.7 ± 0.10	0.4 ± 0.11	-0.6 ± 2.0	0.001	0.10

Note: var given as mean ± SE. *p < 0.05, statistically significant difference in favour of Tai Chi. The overall pooled estimate (randomized-controlled trials) is shown in red. The non-randomized trials are shown in blue. The overall pooled estimate (all trials) is shown in green. The overall pooled estimate (all trials) is shown in green. The overall pooled estimate (all trials) is shown in green.

玖、回饋單統計

長庚科技大學 110 年度 讓數據說話-疾病型態與風險因子之大數據 回饋
 評值表

1、基本資料

1-1. 您是來自	本校林口校區	本校嘉義校區	他校	其他單位
	5 人	人	人	人

1-3. 您一個月大約 參加幾次高教活動	1 次	2 次	3 次	4 次	4 次以上
	人	5 人	人	人	人

2、知能提升

	非常同意	同意	普通	不同意	非常不同意
2-1 本活動提升您 <u>熟練的專業知識與 技能</u>	5 人	人	人	人	人
	100%	%	%	%	%
2-2 本活動提升您 <u>良好的溝通與表達 知能</u>	5 人	人	人	人	人
	100%	%	%	%	%
2-3 本活動提升您 <u>關懷社會的服務精 神</u>	人	3 人	2 人	人	人
	%	60%	40%	%	%
2-4 本活動提升您 <u>實踐道德的思辨力</u>	人	3 人	2 人	人	人
	%	60%	40%	%	%
2-5 本活動提升您 <u>應用自然科學與數 位能力</u>	人	3 人	2 人	人	人
	%	60%	40%	%	%
2-6 本活動提升您 <u>高效能的團隊合作 知能</u>	1 人	4 人	人	人	人
	20%	80%	%	%	%
2-7. 本活動提升您 <u>宏觀的視野與世界</u>	人	3 人	2 人	人	人

<u>互動知能</u>	%	60%	40%	%	%
2-8.本活動提升您多元化的生活能力	人	人	5 人	人	人
	%	%	100%	%	%

3、活動辦理

	非常同意	同意	普通	不同意	非常不同意
4-1.對本活動內容感到滿意(如講題、講員、互動等)	5 人	人	人	人	人
	100%	%	%	%	%
4-2.對本活動的安排感到滿意(如場地、時程、餐點等)	5 人	人	人	人	人
	100%	%	%	%	%
4-3.期望後續再辦理類似主題(如講題)的活動	5 人	人	人	人	人
	100%	%	%	%	%
4-4.期望後續再採用類似的活動形式(如討論互動)	5 人	人	人	人	人
	100%	%	%	%	%

4、建議以後辦理哪些活動

- (1) 可持續辦理一系列 Meta 訓練課程
- (2) 增加與外校教師溝通及交流機會
- (3) 可以定期 meeting 討論，增加研究想法交流
- (4)

5.其他指導與回饋

- (1) 提升老師多元研究能力與產能
- (2)
- (3)
- (4)

拾、成果產出

1. Tai Chi介入對社區老人之肌力、跌倒成效-SR and Meta，持續進行中。

Effects of Tai Chi on muscle strength, balance and fall with frailty or sarcopenia in community older adults: a systematic review and meta-analysis

目的:本研究統合分析 Tai Chi 對罹患衰弱或肌少症的社區老人，對於肌力、身體功能、認知及跌倒的效果。

方法

2021 年 10 月在以下 5 個電子資料庫中進行了系統的文獻檢索：PubMed、CINAHL、Embase、PEDro 和 Cochrane Central Register of Controlled Trials，不限語言或出版年份。本系統評價納入了隨機對照試驗，這些研究檢視 Tai Chi 對患有衰弱或肌少症(sarcopenia)的社區老人的肌力、身體功能、認知及跌倒的效果。

1. Tai Chi and whole-body vibrating therapy in sarcopenic men in advanced old age: a clinical randomized controlled trial (2019)
2. The Effects of Tai Chi on Markers of Atherosclerosis, Lower-limb Physical Function, and Cognitive Ability in Adults Aged Over 60: A Randomized Controlled Trial (2019)
3. Effectiveness of a therapeutic Tai Ji Quan intervention vs a multimodal exercise intervention to prevent falls among older adults at high risk of falling: a randomized clinical trial (2018).
4. Tai Chi Chuan can improve balance and reduce fear of falling in community dwelling older adults: a randomized control trial (2018).
5. Efficacy of supervised Tai Chi exercises versus conventional physical therapy exercises in fall prevention for frail older adults: a randomized controlled trial (2013).
6. Effects of Tai Chi training on arterial compliance and muscle strength in female seniors: a randomized clinical trial (2012)
7. A randomised controlled trial of Tai Chi and resistance exercise on bone health, muscle strength and balance in community-living elderly people (2007)
8. Tai chi and fall reductions in older adults: a randomized controlled trial (2005)
9. Intense Tai Chi exercise training and fall occurrences in older, transitionally frail adults: A randomized, controlled trial (2003).

2. Risk of poor delivery event of woman with domestic violence: A population-based retrospective cohort study，持續進行中。