國家科學及技術委員會補助專題研究計畫報告

發展並探討混和面對面團體治療和網路行動應用程式之支持性照護於追蹤期之乳癌和肺癌病人的成效（第二和第三年計畫）

報 告 類 別 ： 精簡報告
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執 行 期 間 ： 111年08月01日至112年07月31日
執 行 單 位 ： 國立臺灣大學醫學院護理學系暨研究所

計 畫 主 持 人： 蕭妃秀
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本研究具有政策應用參考價值：■否 □是，建議提供機關
（勾選「是」者，請列舉建議可提供施政參考之業務主管機關）
本研究具影響公共利益之重大發現：□否 □是

中 華 民 國 112 年 10 月 23 日

中 文 摘 要 ： 目的： 發展行動應用程式輔助正念練習，並探討合併混和線上暨面對面支持團體與單一線上支持團體之介入，於乳癌病人追蹤期的生活品質、焦慮及憂鬱症狀、生命意義、正念覺察和自我疼惜之改善效果，以及相關的介入機轉(中介變項)。
研究方法：採隨機控制實驗法，從門診邀請診斷為乳癌、年齡介於20至65歲的患者，經由1:1比例將病患隨機分配至實驗和控制組。本研究主要是比較兩種支持性照護模式: 混和(線上合併面對面支持團體)以及單一的線上支持團體,因此兩組的課程內容是相同包含8次包含心理衛教和正念疼惜主題的心理治療。結果測量BDI-II憂鬱量表、STAI焦慮量表、EORTC QLQ-C30、QLQ-LC29 and QLQ-BR45, Mindful attention awareness (MAT), Self-compassion (SC), Meaning in Life (MLQ).追蹤前測(T0)、第二個月(完成介入後)(T1),第五 (T2),第八 以及(T3)。以GEE models以及PROCESS macro分析量性結果。
結果：共有 39 名參與者（控制組 19 名以及實驗組 20 名）完成了前測評估。 長期追蹤結果顯示，相較於混合性介入模式，單一線上團體治療能較有效地減輕焦慮症狀。兩種介入方式均能有效改善憂鬱症狀、生命意義以及生活品質之功能面向。Moderator analysis發現混合性介入模式對前測憂鬱症狀較高和乳癌相關症狀困擾較高的患者有著較好的介入效果，包括改善憂鬱症狀與焦慮。此外，mediator analysis發現正念覺察的提升可以透過改善生活品質之功能面向，進而減少憂鬱症狀。
結論：採用混合性模式施行正念疼惜為主的心理治療，可以維持介入的有效性，特別有利於具有較高憂鬱症狀和乳癌相關症狀困擾的患者。正念覺察的提升與生活品質之功能面向的改善有關，從而減少憂鬱症狀。

中 文 關 鍵 詞 ： 乳癌、支持照護、手機線上行動應用程式、線上團體治療、正念暨疼惜治療、衛教心理、憂鬱症狀、焦慮、生命意義

英 文 摘 要 ： Aims and objectives: This 8-month study aims to develop and examine the long-term effects of a blended support care program on quality of life (symptoms & functions) and anxiety and depressive symptoms; holistic well-being (meaning in life); and the causal mechanisms (mediators) of change in mindfulness and self-compassion.
Methods: This study adopted the randomized controlled trial (RCT) design. Patients who had been diagnosed with breast cancer, were aged between 20 and 65 years old, and were capable of using a mobile APP were recruited from both the outpatient department and breast center. A simple randomization method was used to assign participants randomly to either the experimental or control group, maintaining a 1:1 ratio. This study aimed to compare two types of supportive care programs: a blended format that combines face-to-face group sessions with an internet-based online support group, utilizing a mobile app and Line communication, and an online supportive group exclusively.

To compare the different format, the contents for both the experimental and control groups were the same, consisting of 8-session topics of psychoeducation with mindfulness-based compassion therapy. The outcome measures included Beck Depression Inventory-II, BDI-II, State-Trait Anxiety Inventory, STAI, EORTC Quality of Life, QLQ-C30) and QLQ-BR45, Mindful attention awareness (MAT), Self-compassion (SC), Meaning in Life (MLQ). Data was collected at various time points: baseline (T0), the 2nd month (the end of intervention) (T1), the 5th month (T2), and the 8th month (T3). The intervention effects on the outcome variables were assessed using Generalized estimating equations (GEE) analyses with an autoregressive correlation structure (AR1). Additionally, moderator and mediator analyses of the intervention effect were performed with using the PROCESS macro (model 1).
Results: A total of 39 participants (19 in the Online only group and 20 in the blended group) completed baseline assessments. Participants in the online-only group showed more anxiety reduction compared to those in the blended program. However, the blended program was equally effective in improving depressive symptoms, MLQ presence, and both general and breast cancer specific QOL functioning. The blended program had a stronger impact on patients with higher initial depressive symptoms and greater breast cancer-specific distress. Moreover, it was observed that improved mindful awareness led to better QOL and reduced depressive symptoms.
Conclusion: A blended compassion-focused mindfulness therapy approach is equally effective as online-only methods. It particularly benefits patients with higher initial depressive symptoms and more severe breast cancer-specific distress. Enhanced mindful awareness may reduce depressive symptoms by improving quality of life.

英文關鍵詞：Breast cancer, supportive care, internet-based mobile App, online group therapy, mindfulness-based compassion focus therapy, psychoeducation, depressive symptoms, anxiety, meaning in life

The Purposes of This study

Examining the long-term effects from baseline to the time points at months of 2, 5, and 8, and 14 between the experimental (a blended supportive care program) and control (online program) groups

Examining the moderator effects of disease condition, and baseline depression in the relationship between intervention group and the desired outcomes.

Exploring the causal mechanisms (mediators) of change in mindfulness and self-compassion between intervention group and the desired outcomes

Results

The study flowchart is illustrated in Figure 1. A total of 39 participants (n = 19 in the Online only group and n = 20 in the blended group) completed the baseline assessments (T0). At the T1 assessment, 30 participants remained, while 28 participants completed both T2 and T3 assessments. Attrition occurred primarily because some patients cited a lack of time to participate in the group or complete follow-ups (n = 11). There are no differences in dropout rates between the groups ($p > 0.05$).

Figure 1. Flowchart of participants' progress

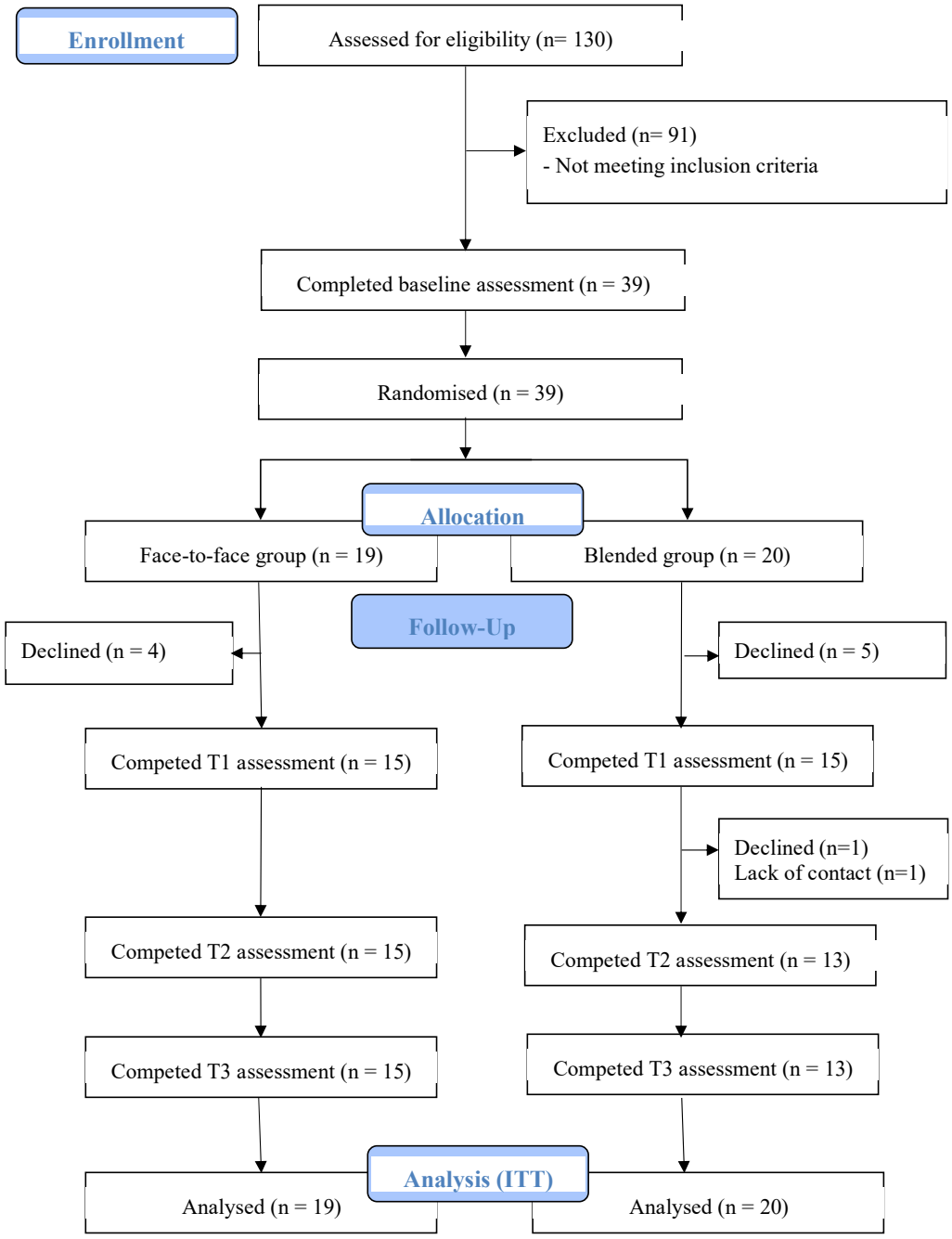


Table 1 presents baseline characteristics separately for the blended and online-only groups. While patients in the blended and online-only groups did not exhibit statistically significant differences in most baseline characteristics ($p > 0.05$), it is worth noting that in the blended group, patients were more likely to use sleep pills compared to those in the online-only group ($p = 0.04$).

Table 1. Demographic and clinical characteristics at baseline between groups

Characteristic	Baseline		
	Blended program (n = 20)	Online-only program (n = 19)	*Sig.*
Mean age (SD)	47.25 (7.75)	49.42 (7.24)	*ns*
Gender (%, female)	20 (100)	18 (94.74)	*ns*
Education (%)			*ns*
High school and below	2 (10)	1 (5.26)	
Undergraduate or above	18 (90)	18 (94.74)	
Working status (%, employed)	14 (70)	13 (68.42)	*ns*
Religion (%, yes)	15 (75)	15 (78.95)	*ns*
Marital status (%)			*ns*
Single/ divorce/ widowhood	8 (40)	7 (36.84)	
Married/ cohabitation	12 (60)	12 (63.16)	
History of depression (%, yes)	1 (5)	1 (5.26)	*ns*
Use of sleep pill (%, yes)	4 (20)	0 (0)	*
Family history of cancer (%, yes)	11 (55)	15 (78.95)	*ns*
Cancer stage (%)			*ns*
Early (0-II)	15 (75)	18 (94.74)	
Advanced (III-IV)	4 (20)	1 (5.26)	
Unclear	1 (5)	0 (0)	
Undergoing active cancer treatment (%, yes)			*ns*
Radiotherapy	1 (6.25)	0 (0)	
Target therapy	0 (0)	3 (17.65)	
Hormone therapy	14 (87.50)	13 (76.47)	
Others	1 (6.25)	1 (5.88)	
Mean time since diagnosis (SD), months [range = 0-155]	38.20 (24.36)	29.47 (26.07)	*ns*
Cases of study dropout (%)	7 (35)	4 (21.05)	*ns*

Table 2 presents both the within-group and between-group effects on the outcome measures. There was significant difference between groups in the effects of anxiety [*Wald Chi-square* (3) = 8.745, p = 0.033]. In comparison to baseline, the lower levels of anxiety (B = 4,548, SE = 2.539, p = 0.073 at T3) were more likely to occur in the online-only group as compared to blended group. There were no

significant differences between groups in the effects of depressive symptoms, meaning in life, mindfulness, self-compassion, and quality of life (all $p > 0.05$). For the within-group effects, participants in both groups exhibited significant changes overtime in the scores of depressive symptoms, MLQ presence, QOL functioning, and breast cancer-specific functioning (all $p < 0.05$). Additionally, participants in the online-only group also demonstrated significant changes over time in the scores of anxiety ($p < 0.001$), mindfulness ($p = 0.016$), self-compassion ($p = 0.001$), global health ($p = 0.021$), QOL symptom distress ($p = 0.015$), as well as breast cancer-specific symptom distress ($p = 0.016$).

Table 2. Mean, standard error (SE), and effect for assessments by groups

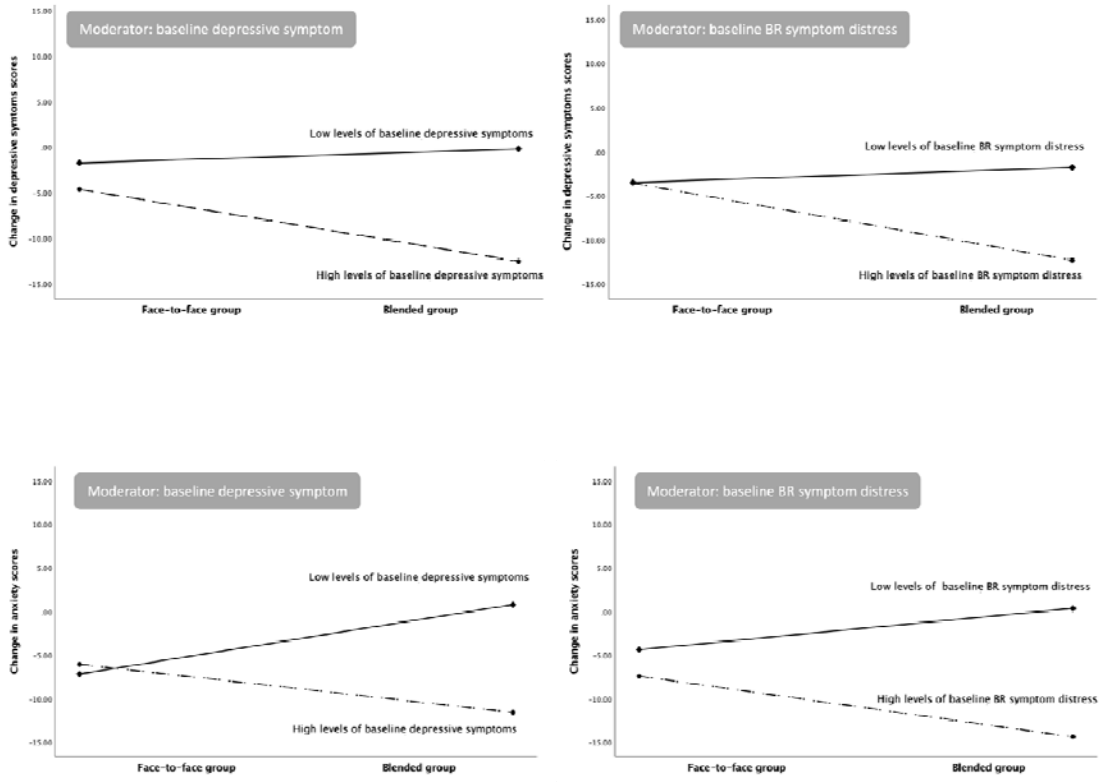
	T0	T1	T2	T3	Time effect	Group x Time effect
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)		
Depression						
Blended	11.35 (1.49)	7.47 (1.49)	6.95 (1.34)	7.35 (1.70)	*	*ns*
Online-only	12.58 (2.14)	11.52 (1.94)	8.61 (2.45)	9.63 (2.13)	**	
Anxiety						
Blended	43.40 (2.43)	40.20 (2.29)	39.76 (2.21)	41.56 (2.58)	*ns*	*
Online-only	44.95 (3.02)	43.77 (2.36)	38.59 (2.17)	38.56 (3.10)	***	
MLQ presence						
Blended	22.95 (1.31)	21.09 (1.39)	22.68 (1.39)	24.28 (1.35)	**	*ns*
Online-only	23.42 (1.47)	22.91 (1.57)	23.79 (1.55)	25.09 (1.43)	*	
MLQ search						
Blended	24.45 (1.23)	23.44 (1.82)	23.92 (1.30)	25.74 (1.06)	*ns*	*ns*
Online-only	23.74 (1.29)	22.83 (1.39)	23.48 (1.45)	22.70 (1.17)	*ns*	
MAAS						
Blended	4.20 (0.17)	4.12 (0.18)	4.13 (0.20)	4.20 (0.15)	*ns*	*ns*
Online-only	4.07 (0.23)	3.94 (0.20)	4.17 (0.20)	4.32 (0.25)	*	

Self-compassion						
Blended	71.20	72.77	71.52	72.11	*ns*	*ns*
	(2.01)	(3.29)	(2.46)	(2.43)		
Online-only	72.42	67.29	69.78	65.51	**	
	(2.54)	(1.96)	(2.20)	(3.26)		
Global health						
Blended	62.50	65.68	62.78	60.67	*ns*	*ns*
	(3.66)	(5.29)	(4.36)	(6.08)		
Online-only	53.95	63.99	61.99	66.25	*	
	(3.94)	(3.11)	(4.44)	(4.42)		
QOL function						
Blended	82.76	86.38	87.11	86.17	*	*ns*
	(2.73)	(2.42)	(2.04)	(2.69)		
Online-only	75.75	81.21	83.10	82.07	*	
	(3.46)	(3.26)	(2.57)	(3.39)		
QOL symptoms						
Blended	16.57	13.06	13.19	14.38	*ns*	*ns*
	(2.51)	(2.50)	(1.54)	(2.87)		
Online-only	23.01	20.45	17.55	19.16	*	
	(3.10)	(2.58)	(2.35)	(3.01)		
BR function						
Blended	36.09	72.73	71.36	73.88	***	*ns*
	(2.72)	(2.28)	(2.72)	(2.67)		
Online-only	39.35	66.92	68.71	66.17	***	
	(4.28)	(3.86)	(3.75)	(3.68)		
BR symptoms						
Blended	18.25	16.66	16.01	14.65	*ns*	*ns*
	(1.93)	(2.57)	(2.13)	(2.11)		
Online-only	24.60	20.01	18.98	22.10	*	
	(3.19)	(2.89)	(2.99)	(4.39)		

As shown in Figure 2, moderator analyses were further performed to explore which subgroups of participants benefit most (or least) from the blended or online-only program. The association between treatment groups and change in depressive symptoms was found to be moderated by baseline depressive symptom (B = -0.501, t = -2.309, SE = 0.217, p = 0.032) as well as baseline breast cancer-specific symptom distress (B = -0.374, t = -2.149, SE = 0.174, p = 0.045). Similarly, the

association between treatment groups and change in anxiety was also moderated by baseline depressive symptom (B = -0.727, t = -2.336, SE = 0.311, p = 0.030) as well as baseline breast cancer-specific symptom distress (B = -0.427, t = -2.119, SE = 0.201, p = 0.047). As depicted in Figure 2, simple slope analysis revealed that the effect of the blended program on patients' depressive symptoms and anxiety was more favorable for those individuals who had higher baseline depressive symptoms and greater baseline breast cancer-specific symptom distress. Notably, patients' demographic factors did not play moderating role in this context.

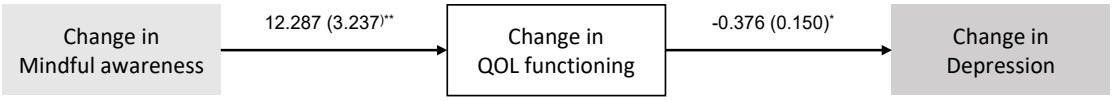
Figure 2. Baseline depressive symptoms and BR symptom distress as moderators in the relationship between (1) groups and change in depressive symptoms, (2) groups and change in anxiety.



Possible mechanisms for effectiveness of compassion-focused mindfulness therapy with BMS program were further assessed. As shown in Figure 3, change in the patients' QOL functioning significantly mediated the effect of the patients' mindful awareness on their depressive symptom (*effect* = -4.622, *BootSE* = 2.383, *95% BootCI* = -9.747 to -0.571). The mediation pathway revealed that changes in

patients' mindful awareness were associated with improved QOL functioning, subsequently leading to a decrease in their depressive symptoms.

Figure 3. Mediation pathway



Discussion

In this study, we observed that internet-based online-only group program resulted in more significant reductions in anxiety when compared to the blended program. Nevertheless, it's important to notice that the blended program proved just as effective as online-only therapy in changing depressive symptoms, MLQ presence, and both general and breast cancer specific QOL functioning. Moderation analysis revealed that the impact of the blended program on patients' depressive symptoms and anxiety was particularly beneficial for individuals with higher baseline depressive symptoms and breast cancer-specific symptom distress. Additionally, the mediation pathway indicated that changes in patients' mindfulness were linked to improved QOL functioning, subsequently resulting in a decrease in their depressive symptoms.

In our previous studies (Hsiao et al., 2016; Hsiao et al., 2021), we applied mindfulness integrated with body-mind-spirit therapy in face-to-face group settings, demonstrating its efficacy as a treatment approach for breast and lung cancer patients. In this current study, we expanded our approach by incorporating compassion training into mindfulness integrated with body-mind-spirit therapy. The findings indicated a positive impact on the reduction of depressive symptoms, anxiety, and improvement in the quality of life for breast cancer patients. We also compared the effectiveness of two different delivery formats: the blended format, which combined face-to-face group sessions with an internet-based online support group, and the online-group-only format. The results indicated that both formats can yield comparable outcomes in terms of improving depressive symptoms, fostering a sense of meaning in life, and enhancing both general and breast cancer-specific quality of life functioning. This study demonstrated that incorporating an online-based format into a face-to-face compassion-focused mindfulness therapy program may not compromise program effectiveness.

The blended program demonstrated a more favorable impact on reducing patients' depressive symptoms and anxiety, particularly among those who initially presented higher levels of depressive symptoms and more significant breast cancer-specific symptom distress. In our blended supportive care program, we initiate

treatment with face-to-face group therapy to establish trust between therapists and patients. Subsequently, patients can seamlessly transition to online group support meetings and practice through an internet-based mobile app. Moreover, the mobile application provided in this study offers guided self-help strategies, along with consistent communication with therapists and fellow group members through Line messaging. As previously noted, internet-based interventions can benefit from human support and regular reminders (Cowpertwait & Clarke, 2013). This, in turn, contributes to increased engagement and the sustained support of professional consultations and peer interactions. Patients with more severe symptoms may require additional professional through face-to-face interactions and more regular online reminders. A blended program can enhance engagement and result in more significant improvements in their depressive symptoms and anxiety.

Furthermore, we also observed that the improvements in patients' mindful awareness were correlated with better QOL functioning, which, in turn, contributed to a decrease in their depressive symptoms. Mindful awareness skills, focused on the practice of being fully present in the moment without judgment, have the potential to empower individuals to respond more effectively to cancer-related stressors. This, in turn, can lead to an improvement in their quality of life, ultimately may resulting in a positive impact on emotional well-being (Hsiao et al., 2021; Wu et al., 2022).

Conclusion

A blended compassion-focused mindfulness therapy approach is equally effective as online-only methods. It particularly benefits patients with higher initial depressive symptoms and more severe breast cancer-specific distress. Enhanced mindful awareness may reduce depressive symptoms by improving quality of life.

111年度專題研究計畫成果彙整表

計畫主持人：蕭妃秀	**計畫編號：**111-2629-B-002-001-
計畫名稱：發展並探討混和面對面團體治療和網路行動應用程式之支持性照護於追蹤期之乳癌和肺癌病人的成效（第二和第三年計畫）	

成果項目			量化	單位	質化 （說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等）
國內	學術性論文	期刊論文	0	篇	
		研討會論文	0		
		專書	0	本	
		專書論文	0	章	
		技術報告	0	篇	
		其他	0	篇	
國外	學術性論文	期刊論文	0	篇	準備投稿中。
		研討會論文	0		本研究未補助出國研討會之差旅費。
		專書	0	本	
		專書論文	0	章	
		技術報告	0	篇	
		其他	0	篇	
參與計畫人力	本國籍	大專生	0	人次	
		碩士生	0		
		博士生	1		協助收案和整理資料。
		博士級研究人員	0		
		專任人員	0		
	非本國籍	大專生	0		
		碩士生	0		
		博士生	0		
		博士級研究人員	0		
		專任人員	0		
其他成果 （無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。）			本研究提供如何整併線上為主再加上3次面對面團體，提供可近性高且又能達成支持改善情緒生活品質的效果，作為提供乳癌病友服務模式的參考。		

十六、科技部補助研究計畫涉及臨床試驗之性別分析檢核表：

研究人員姓名	蕭妃秀		
任職機關系所	國立臺灣大學醫學院護理系暨研究所	職稱	教授
計畫名稱	發展並探討混和面對面團體治療和網路行動應用程式之支持性照護於追蹤期之乳癌和肺癌病人的成效 (第二和第三年計畫)		

說明：

本年度專題研究計畫若涉及臨床試驗，應填寫「性別分析檢核表」，填寫後請以附件上傳申請系統。

項次	項目	說明	備註
1	本計畫涉及臨床試驗之研究對象。	確立診斷六個月後的乳癌，年齡介於20-65歲，具有流利的中文讀寫能力。	
2	本計畫預計之收案件數及其性別比例。	本計畫39位乳癌患者，僅一位男性。	
3	本計畫如未進行性別分析(進行性別統計分析及差異評估)，請說明理由。若已有文獻證明無性別差異，請提供相關資料。	因只有一位男性無法分析。	