

# 科技部補助專題研究計畫成果報告 期末報告

## 探討癌症病患健康識能、復原力與生活品質相關性之系列性研究

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## 中文摘要：背景

癌症是一項嚴重且複雜的疾病，同時，癌症病患也面臨隨疾病而來的各種困境，包含疾病與治療所衍生的生理影響，以及心理層面感受到的生命威脅。雖然過去在醫療上已經有很多努力與成果，但多數卻都集中照護提供者的部分，社會心理層面並未被適當的討論。近年來，社會心理因素在癌症治療的角色已經有許多討論，其中健康識能與復原力是最常被討論的議題，且其與治療品質的關係已有許多文獻所確認。然而，健康識能、復原力與生活品質之間的關係仍不清楚。因此，本研究之目的為：探討健康識能、復原力與生活品質之關係，並驗證復原力是否中介健康識能與生活品質之關係。

## 方法

本研究採橫斷式調查，為使資料收集方便，本研究與台灣癌症病友協會合作，並以乳癌病患作為本研究之研究對象。乳癌識能評估工具(Breast Cancer Literacy Assessment Tool), EORTC 乳癌生活品質量表( EORTC QLQ - BR23)和復原力量表(Resilience Scale)作為本研究之研究工具，並透過台灣癌症病友協會臉書專頁每月活動發放問卷。

## 結果

這項研究共招募了114名患者。平均復原力得分為134.55 (24.83)，平均健康識能得分為23.94 (2.36)，平均生活品質得分為69.36 (10.36)。結果顯示工作狀態，癌症分期，治療狀態，罹患乳癌前的健康狀況以及對健康的關注程度與復原力相關。工作狀態和對他們健康的關注程度與癌症健康識能相關；受教育程度，是否有宗教信仰以及工作狀態是影響生活品質的重要因素。我們還發現，更好的癌症健康識能和復原力可以帶來更好的生活品質，我們還發現，透過增強復原力，可以將癌症健康識能與生活品質之間的關係提高10%

## 結論

癌症治療有其自身的壓力源，包括治療挑戰，不良事件和生活變化。在癌症治療期間提高健康識能和復原力可能會促進在治療期間和之後更好地適應和取得其他積極的社會心理成果。這項研究的發現發現，癌症健康識能和復原力與生活品質呈正相關，而通過增強復原力可以稍微改善癌症健康素養與生活品質之間的關聯。

中文關鍵詞：乳癌、癌症健康識能、復原力、生活品質

## 英文摘要：Background

Cancer is a critical and complex illness as well, and cancer patients face multiple adversities within their illness, including both the physical impact of the disease (i.e., pain and discomfort) and treatment, as well as the psychological aspects of the knowledge of having a potentially life-threatening illness. Although much effort has been expended, this has mostly concentrated on the healthcare provider and does not adequately address the psychosocial aspects. In recent years, the role of psychosocial aspects in cancer treatment has been given increased attention, where health literacy and resilience

are the most commonly discussed issues, and these factors associated with better quality of treatment have been validated. However, the association among health literacy, resilience and quality of life is unclear. Therefore, the purpose of this study is to explore the relationships among cancer literacy and resilience, and quality of life, and discussing whether resilience mediates the relationship between cancer literacy and health-related quality of life.

#### Methods

A cross-sectional questionnaire survey was conducted. For the convenience of data collection, we collaborated with Taiwan Association of Cancer Patients, and selected breast cancer as our study population. Breast Cancer Literacy Assessment Tool, EORTC QLQ - BR23 and Resilience Scale were used as measurement tools. The online questionnaire was distributed via Taiwan Association of Cancer Patients facebook page and monthly activities.

#### Results

A total of 114 patients were recruited in this study. The average score of resilience was 134.55(24.83), average health literacy score was 23.94(2.36), and the average of quality of life score was 69.36(10.36). the results revealed working status, cancer stage, treatment status, health status before having breast cancer, and the level of paying attention on their health were associated with resilience; working status and the level of paying attention on their health were associated with cancer health literacy; education level, whether having a religion, and working status were the significant affecting factors toward quality of life. And we also found better cancer health literacy and resilience could bring better quality of life, we also found QoL can be improved 10% through enhancing resilience.

#### Conclusions

Cancer treatment has its own stressors, including treatment challenges, adverse events, and life changes. Promoting the level of health literacy and resilience during cancer treatment may encourage better adaptation and other positive psychosocial outcomes during and after treatment. The findings of this study revealed cancer health literacy and resilience were positively associated with quality of life, and the association between cancer health literacy and quality of life can be improved slightly by enhancing resilience.

英文關鍵詞： breast cancer, cancer health literacy, resilience, quality of life

## Introduction

Since the publication of “Crossing the Quality Chasm,” the landmark report by the Institute of Medicine (IOM), patient-centered care has become a focus for healthcare systems. The IOM defines patient-centered care as “care that is respectful of and responsive to individual patient preferences, needs, and values and ensures that patient values guide all clinical decisions” [1]. Many policies, programs, and activities have been implemented to improve patient engagement, such as shared decision-making, accountable care organization, patient-centered medical homes, and others. Patient-centered care is perhaps one of the most important goals for healthcare system reform in this century. To achieve this goal, the entire healthcare system must be redesigned.

Cancer is a critical and complex illness as well, and cancer patients face multiple adversities within their illness, including both the physical impact of the disease (i.e., pain and discomfort) and treatment, as well as the psychological aspects of the knowledge of having a potentially life-threatening illness. Some studies have indicated cancer patients would benefit from a holistic care model, and quality of life [2], survivorship [2], self-management [3], and outcome of care [4] would be improved. Therefore, developing a holistic care model for cancer care is necessary. Cancer has been the leading cause of death in Taiwan since the 1980s. According to the 2013 cancer registry annual report published by the Health Promotion Administration, there were nearly 100,000 newly diagnosed cancer patients, 1.5-fold compared to 10 years ago (2007). To reduce incidence, morbidity and mortality rates of cancer, prevention strategies and early detection programs have recently been widely implemented since the Cancer Prevention Act was launched in 2003.

In recent years, the role of psychosocial aspects in cancer treatment has been given increased attention, where health literacy and resilience are the most commonly discussed issues. Health literacy has previously been characterized as the ability to read and understand health information in clinical practice, but over the years, its meaning has expanded to involve a much wider scope of abilities related to taking control of and making decisions regarding health.[5, 6] It reflects the ability to read and understand health information, engage with the health care process, and remove unnecessary complexity and barriers to understanding health events and involvements.[7] More recently, the concept has been further developed to entail the

knowledge, motivation, and competences to access, understand, appraise, and apply information in everyday life to make judgments and decisions in terms of health care, disease prevention, and health promotion as well as to maintain and promote quality of life throughout the life course.[8]

Health literacy is recognized as an important determinant of health, in the sense that better health literacy has been shown to enable better self-care with fewer health risks, better health care outcomes, and lower health costs.[9-11] Studies indicate that when health literacy is lacking, individuals have less knowledge of their diseases and treatments, fewer self-management skills, poor compliance, and more medical or medication treatment errors. [12] There are many existing tools for measuring level of health literacy [13-17], and a few scales for measuring cancer literacy have also been developed in the past decade [18-23]; however, most of them are designed for healthy people, not for cancer patients. Domestic researchers have developed a cancer knowledge scale [24]; likewise, it was not designed for patients with cancer. Therefore, some fundamental questions are still unsolved, such as “What is the level of cancer literacy among cancer patients?” “What kind of cancer knowledge do cancer patients need to know?” Understanding the level of literacy among cancer patients might be an important step for improving the quality and outcome of care.[25]

Resilience is another crucial concept for cancer care [26]. The study of resilience on cancer care began in the mid- to late-1980s and was primarily limited to children and adolescents, so resilience in adult cancer care is an under-researched area [27]. Existing studies have found that patients with good resilience can treat their disease correctly and maintain a relatively good psychological state, thereby resulting in a better quality of life.[28, 29] Existing literature points to a number of elements contributing to resilience [30, 31], where some elements are inherent, and some might be acquired. Research also indicated that understanding the future of illness was positively associated with resilience. Thus, health literacy might have the opportunity to influence the individual’s ability of resilience. However, to our best knowledge, the association between health literacy and the ability of resilience is under-discussed. If the association between health literacy and the ability of resilience exists, clinical practitioners and health authority could improve the cancer patients’ ability of resilience through enhancing the level of health literacy, to allow cancer patients to achieve better

quality of life. Therefore, the purpose of this study was to examine the association among cancer health literacy, resilience and quality of life.

## **Methods**

### Study design & research framework

A cross-sectional survey research design was used to investigate our study purpose. The conceptual framework of the model is displayed in Figure 1.

### Definition of variables:

#### *Independent variable: Cancer health literacy*

Breast Cancer Literacy Assessment Tool [22] was used for measuring cancer health literacy. It was developed by Williams et al in 2013, and 34 items were comprised. The total score of cancer health literacy is ranging from 0 to 34; higher scores reflect higher cancer health literacy.

#### *Dependent variable: quality of life*

EORTC QLQ - BR23 (Traditional Chinese version) was used in this study for measuring quality of life. The European Organization for Research and Treatment of Cancer (EORTC) developed the QLQ-C30 as a tool for measuring cancer-specific HRQOL. [32] It consists of 30 items to assess physical, role, emotional, cognitive and social functioning, global health status or QOL scales, fatigue, pain, nausea and vomiting, dyspnea, insomnia, appetite loss, constipation, diarrhea and financial difficulties. The EORTC QLQ-BR23 is a breast-specific module that comprises of 23 questions to assess body image, sexual functioning, sexual enjoyment, future perspective, systemic therapy side effects, breast symptoms, arm symptoms and upset by hair loss. It uses a 4-point Likert scale, and each individual item is scored from 1 to 4 (1 = not at all to 4 =very much). The total score of quality of life is ranging from 23 to 112; higher scores reflect worse quality of life.

### *Mediator variable: Cancer resilience*

The Resilience Scale (RS) is developed by Wagnild & Young in 1993 [33]. It uses a 7-point Likert scale responses on 5 domains (equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness) and each domain has 5 items. Each individual item of the RS is scored from 1 to 7 on a response scale (1 = disagree to 7 = agree). The total score of RS is ranging from 25 to 175; higher scores reflect higher resilience.

### *Covariates*

Except for cancer literacy, ability of resilience and QOL, we will also collect patient's demographic information (e.g. age, gender, marital status, years of education, income level, employment status, spiritual status), cancer-related information (e.g. cancer type, cancer stage, years of having cancer, comorbidities, recurrence status, multi-cancer), and *etc.* as covariates.

### Hypotheses

Four hypotheses were tested in this section, including:

- H1 Cancer patient's cancer literacy is positively associated with resilience, after adjusting by covariates
- H2 Quality of life among cancer patients is positively associated with cancer literacy, after adjusting by covariates
- H3 Quality of life among cancer patients is positively associated with resilience, after adjusting by covariates.
- H4 Cancer patient's resilience mediates the association between cancer literacy and quality of life, after adjusting by covariates.

### Participants

For the convenience of data collection, we collaborated with Taiwan Association of Cancer Patients, and selected breast cancer as our study population. The online questionnaire was distributed via Taiwan Association of Cancer Patients facebook page and monthly activities.

### Statistical analysis

All statistical analyses were performed using SAS 9.3. In statistical testing, a two-sided p value  $\leq 0.05$  was considered statistically significant. The distributional properties of continuous variables were expressed by mean  $\pm$  standard deviation (SD), and the categorical variables were presented by frequency and percentage. In bivariate analysis, potential predictors of quality of life were examined using the Pearson correlation. Structure Equation Model was applied to explore the relationship among quality of life, resilience, post-traumatic stress disorder reaction, and post traumatic growth.

### **Results**

A total of 114 patients were recruited in this study. 0,000 (1USD=31NTD), 35(30.97) respondents' family annual income was range from NTD 600,000-NTD1,000,000, rest of them were above NTD 1,000,000 (except for a respondent did not report this information) In terms of marital status, 69.30% of our sample were married, 20.18% were single, and rest of them were divorced, separation, spouse deceased. In terms of working status, 37 respondents (32.46%) were in employment, 14 respondents were in part-time employment, 28 respondents (24.56%) were homemakers, 20 respondents (17.54%) were retired or unemployed, and 15 respondents (13.16%) quitted their job or sick leave due to cancer. Concerning residential area, most respondents (70, 61.40%) lived in northern Taiwan. 100 respondents (87.72%) lived with their family, and 68 respondents (59.65%) had a religion.

In terms of cancer-related information, the 85.09% of our respondents were being treated for cancer for the first time, the average cancer history was 6.56(6.59) years, around third-fourth respondents were diagnosed as early stage (stage 0-2) breast cancer. Around 64 respondents completed their treatment, 47 were on treatment and 2 were receiving nonaggressive treatment. Concerning the health status, the majority respondents (83, 72.81%) reported that they had no co-existing disease in the past three years, 23 (20.18%) respondents reported that they had one disease. Diabetes mellitus, Hypertension, Arthritis, and Heart disease

were the most commonly seen diseases. 70 respondents reported that they had good health status before having breast cancer, only 10 reported that their health status was bad before having breast cancer. However, there were only around 40% respondents reported that they paid attention on their health, one-fourth respondents reported that they never or seldom paid attention on health. Finally, the average score of resilience was 134.55(24.83), average health literacy score was 23.94(2.36), and the average of quality of life score was 69.36(10.36).

Table 2 shows the results of bivariate analysis. Regarding resilience, the results shows patients who had senior college degree, annual family income below NTD 600,000, resided in northern Taiwan, single, lived with family, not having a religion, leave job due to illness, not first-time having cancer, at stage 4 breast cancer, adopted nonaggressive treatment, did not have co-existing disease, health status before having cancer was poor or very poor, sometimes paying attention on health had the lowest resilience score, but the resilience was only varied among income status, treatment status, health status before having cancer, and level of paying attention on health. In terms of cancer health literacy, our findings show that the cancer health literacy was not different among Respondent's sociodemographic information, Respondent's cancer-related information, and Health Status. As for quality of life, there was no difference existed among respondent's sociodemographic information, respondent's cancer-related information, and Health Status, except for Education, residential area, Working status, and cancer stage. Patients had college or above degree, resided in central or eastern Taiwan, and at stage 4 breast cancer had poorer quality of life. Furthermore, patients who had a religion and who was on their treatment had worse quality of life than patients who had a religion and on others treatment status.

Table 3 demonstrated the results of multivariate analysis. The results revealed that education level, family annual income, residential area, marital status, whether live with family, whether having religion, whether first-time having cancer, existing disease status, and how to find out having cancer were not associated with resilience, the resilience of respondents who had a part-time job, was diagnosed at stage 2 breast cancer, had completed their treatment had better resilience, and patient whose health status was poor before having breast cancer, and sometimes paying attention on health had worse resilience, compared with reference groups. As for health literacy, the results told us that health literacy was not varied among all

variables, but patients who were retired/unemployed or usually paid attention on their health were slightly having better health literacy than reference group. In terms of quality of life, we found education level, whether having a religion, and work status were the significant affecting factors toward quality of life, the results showed that patients who were educated below senior high school, not having a religion, and who were in employment, having a part-time job, or home management had better quality of life.

### **Test of the Structural Model**

A structural equation model was further conducted to analyze the structural path relationships among cancer health literacy, resilience, and quality of life. Figure 2 shows the structural relationships by means of path coefficients among 3 key variables, and Table 2 presents the standardized path coefficients of main variables. The standardized and statistically significant path coefficients were indicated by p-values. The results indicated that the test of the structural model showed a good or acceptable model fit (Chi-square=12.71, degree of freedom=2, the ratio of Chi-square to degrees of freedom=6.36, p-value = 0.0017; the standardized root mean square residual =0.076, and the comparative fit index=0.95.). These indices revealed that this structural model sufficiently explained the collected data.

As shown in Figure 2, resilience positively predicted quality of life problem (path coefficient=0.09, standard error=0.04, p-value=0.0172), cancer health literacy negatively predicted quality of life problem (path coefficient=-0.72, standard error=0.39, p-value=0.0680), and cancer health literacy did not predicted resilience. According to the results of Table 4, the indirect standardized effects of cancer health literacy on quality of life problem was -0.0076 (0.04X-0.19), the direct effects was -0.07, and then the total effects was -0.0776. Therefore, the proportion of the mediation effect through RS was 9.79% (-0.0076 ÷ -0.0776).

### **Discussion**

In this study, we found working status, cancer stage, treatment status, health status before having breast cancer, and the level of paying attention on their health were associated with resilience; working status and the level of paying attention on their health were associated with cancer health literacy; education level, whether having a religion, and working status were the significant affecting factors toward quality of life.

And we also found better cancer health literacy and resilience could bring better quality of life, we also found that the association between cancer health literacy and QoL can be improved 10% through enhancing resilience. Our findings only supported all hypothesis 2 and hypothesis 3, but not supported hypothesis 1 and hypothesis 4, which meant quality of life were associated with resilience and cancer health literacy, but cancer health literacy did not associate with resilience, and the association between quality and cancer health literacy did not mediated by resilience.

The association between health literacy and quality of life an important patient-centered outcome[34], but the findings were not consistent among studies. [35-38] Most studies found health literacy was positively associated with quality of life, but there were some studies found the health literacy had a negative association with Quality of Life.[35, 39] Although health literacy is a popular study topic in the past decades, the development of cancer literacy is relatively late and limited. Many studies have adopted the definition of health literacy to define and measure cancer literacy; however, according to the IOM report, it is necessary to develop an assessment to gauge health literacy for a specific illness. [8] The instruments we used in this study were designed for measuring the level of health literacy and quality of life for cancer, the results could be more reliable than existing studies. As for resilience,

In recent years, the role of resilience in the process of cancer treatment has been increasingly focused on. Patients with good resilience can treat their disease correctly and maintain a relatively good psychological state, thereby resulting in a better quality of life.[28, 29, 40-42] For example, Lam et al found that in Chinese women with breast cancer, more resilient patients had less physical symptom distress at early post-surgery, less treatment decision-making difficulties, and better longer-term psychosocial outcomes. [43, 44] Similar findings have been described in patients with colorectal cancer and recurrent ovarian cancer. [45, 46]

The findings were consistent with existing studies, but why resilience cannot mediate the association between health literacy and quality of life? The cross-sectional study design might be the major reason. In the original proposal, we were managed to conduct a two-year plan to examine the association among cancer health literacy, resilience, and quality of life, however, we only got one-year grant. Such a limitation did not allow us to conduct a prospective study design, and we also can not observe the cancer health literacy,

resilience and quality of life in different time points. Selection bias might be second reason. All our participants were enrolled from TPCA, which is a peer support group. Resilience is one kind of psychological characteristics, according to existing studies, peer support can enhance the resilience. [47]Single source of data might reduce the variability. These limitations were unavoidable and limited this study.

## **Conclusion**

Cancer treatment has its own stressors, including treatment challenges, adverse events, and life changes. Promoting the level of health literacy and resilience during cancer treatment may encourage better adaptation and other positive psychosocial outcomes during and after treatment. The findings of this study revealed cancer health literacy and resilience were positively associated with quality of life, and the association between cancer health literacy and quality of life can be improved slightly by enhancing resilience.

Table 1 descriptive analysis

	N=114
<b><u>Respondent's sociodemographic information</u></b>	
Age	52.98(9.91)
Education, n(%)	
<Senior High	38(34.33)
Junior College	27(23.68)
College and above	49(42.98)
Annual Income, n(%)	
<600,000	47(41.59)
600,000-1,000,000	35(30.97)
>1,000,000	31(27.43)
missing	1
Living area, n(%)	
Northern	70(61.40)
Central	16(14.04)
Southern	20(17.54)
Eastern	8(7.02)
marital status, n(%)	
Single	23(20.18)
Married	79(69.30)
Others (Divorced, Separation, spouse deceased)	12(10.52)
Live with family, n(%)	100(87.72)
Religion, n(%)	68(59.65)
Working status	
In Employment	37(32.46)
Part-time	14(12.28)
Home management	28(24.56)
Retired/ Unemployed	20(17.54)
Leave due to illness	15(13.16)
<b>Respondent's cancer-related information</b>	
First cancer, n(%)	97(85.09)
Cancer history	6.56(6.59)
how_find	
Periodic inspection (self-pay)	16(14.04)
Periodic inspection (government-funded)	31(27.19)
Found anomalies	67(58.77)
Cancer stage, n(%)	
0	8(7.02)

1	44(38.60)
2	35(30.70)
3	13(11.40)
4	12(10.53)
Not remember	2(1.75)
Treatment status, n(%)	
On treatment	47(41.59)
Completed	64(56.64)
Nonaggressive treatment	2(1.77)
missing	1
Respondent's health status	
Co-existing disease, n(%)	
0	83(72.81)
1	23(20.18)
2+	8(7.02)
<b><u>Health Status</u></b>	
Diabetes mellitus	9(7.89)
Hypertension	12(10.53)
STROKE	0(0)
Arthritis	7(6.14)
Dementia	0(0)
Heart disease	10(8.77)
Asthma or COPD	2(1.75)
Health status before having cancer	
Very poor	2(1.75)
Poor	8(7.02)
Ordinary	34(29.82)
Good	41(35.96)
Very good	29(25.44)
Paying attention on health	
Never	10(8.77)
Seldom	21(18.42)
Sometimes	38(33.33)
Usually	34(29.82)
Always	11(9.65)
<b><u>After treatment</u></b>	
Information source	
TV	19(16.67)
internet	82(71.93)
Radio	3(2.63)

Newspaper/ Magazine	39(34.21)
Relatives	24(21.05)
Hospital	90(78.95)
Patient association	60(52.63)
other	8(7.02)
Information of breast cancer patient association provided by medical team	98(85.96)
Acquire enough information of cancer treatment	80(70.18)
Having annual physical examination or cancer screening after having breast cancer	98(85.96)
Homecare information provided by medical team	
Yes	50(43.86)
No	30(26.32)
Not needed	28(24.56)
Not remember	6(5.26)
Acquire assistance from Health and Welfare system	
Yes	16(14.04)
No	49(42.98)
Not enough	5(4.39)
Not needed	42(36.84)
Not remember	2(1.75)
Resilience	134.55(24.83)
Health Literacy	23.94(2.36)
Quality of life	69.36(10.36)

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Table 2

	Resilience		Health Literacy		Quality of life	
	Mean(SD)	<b>p-value post-hoc</b>	Mean(SD)	<b>p-value post-hoc</b>	Mean(SD)	<b>p-value post-hoc</b>
Education		0.4213		0.2731		0.0031
(1) <senior High	136.21(24.1)		23.58(2.18)		73.58(9.38)	(1)>(3)
(2) Senior college	129.04(24.50)		23.70(2.70)		69.33(7.92)	
(3) >college	135.89(25.93)		24.32(2.32)		65.87(10.27)	
Income		0.0110		0.5289		0.4008
(1) <600,000	126.53(25.09)	2>1	23.64(2.32)		67.87(10.27)	
(2) 600,000-1,000,000	142.26(23.5)		24.17(2.32)		69.60(11.12)	
(3) >1,000,000	137.37(23.47)		24.07(2.56)		70.83(9.75)	
Living area		0.1969		0.5738		0.0128
(1) Northern	130.44(25.62)		23.75(2.26)		70.59(10.04)	
(2) Central	138.06(25.94)		24.31(3.11)		63.19(10.17)	
(3) Southern	139.6(21.24)		23.80(2.35)		71.60(8.97)	
(4) Eastern	147.00(21.8.)		24.88(1.73)		63.50(12.31)	
marital status		0.2214		0.1525		0.5897
(1) Single	128.57(29.13)		23.96(2.20)		68.39(10.13)	
(2) Married	134.60(23.00)		23.71(2.36)		69.78(10.51)	
(3) Others	143.83(27.53)		25.17(2.59)		67.08(10.56)	
Live with family		0.6374		0.6431		0.8275
(1) Yes	134.10(23.98)		23.90(2.31)		69.28(10.36)	
(2) No	137.50(31.14)		24.21(2.78)		69.93(10.72)	
Having religion		0.5039		0.8614		0.0724
(1) Yes	135.80(24.52)		23.97(2.46)		67.93(11.13)	

(2) No	132.70(25.43)		23.89(2.23)		71.48(8.80)	
Working status		0.1297		0.4649		0.0046
(1) In Employment	137.80(25.07)		24.34(2.31)		69.09(9.33)	3>5
(2) Part-time	145.36(19.44)		23.93(2.67)		70.43(9.25)	
(3) Home management	128.86(24.77)		23.64(2.11)		73.36(9.20)	
(4) Retired/Unemployed	137.11(30.29)		23.94(2.36)		70.22(11.52)	
(5) Leave due to illness	125.2(18.74)		23.13(2.70)		60.87(10.40)	
First time having cancer		0.1377		0.3210		0.3922
(1)Yes	136.00(24.11)		24.03(2.25)		69.01(10.53)	
(2) No	126.30(27.96)		23.41(2.96)		71.35(9.37)	
Cancer stage, n(%)		0.2951		0.9705		0.0039
0	126.00(26.80)		23.14(2.12)		79.71(5.22)	
1	139.43(21.84)		24.07(2.53)		68.89(10.11)	
2	135.56(22.83)		23.82(2.44)		66.79(10.75)	
3	132.31(30.42)		24.00(1.53)		70.69(8.05)	
4	120.42(25.9)		24.17(2.76)		66.50(10.00)	
Treatment status		0.0322		0.6830		0.0971
On treatment	129.33(25.12)		24.15(2.53)		66.61(9.93)	
Completed	138.88(24.04)		23.75(2.30)		71.11(10.50)	
Nonaggressive treatment	105.00(7.07)		24.00(1.41)		68.00(7.07)	
Co-existing disease		0.8843		0.9551		0.9345
0	133.90(24.00)		23.99(2.24)		69.06(10.75)	
1	134.48(27.09)		23.70(3.01)		69.78(10.74)	
2	136.29(32.65)		23.86(1.95)		69.86(4.88)	
3	154.00(-)		24.00(-)		63.00(-)	
Health status before having cancer		0.0329		0.8861		0.1194

(1) Very poor	122.00(16.97)		22.50(4.95)		71.00(18.38)	
(2) Poor	121.13(26.51)		24.38(1.30)		60.50(11.70)	
(3) Ordinary	130.15(25.50)		24.03(2.35)		68.36(10.35)	
(4) Good	132.55(24.44)		23.90(2.32)		70.75(8.68)	
(5) Very good	146.10(21.81)		23.79(2.65)		70.31(11.25)	
Paying attention on health		0.0365		0.1257		0.6505
(1) Never	137.10(24.90)		22.60(2.46)		70.90(9.02)	
(2) Seldom	142.15(22.62)		24.20(2.26)		66.40(12.78)	
(3) Sometimes	125.55(25.75)		24.11(2.29)		70.42(10.06)	
(4) Usually	134.39(22.13)		24.30(2.30)		68.21(8.40)	
(5) Always	147.91(27.01)		22.82(2.71)		71.55(13.43)	
How find		0.8266		0.5253		0.2303
(1) Periodic inspection (self-pay)	131.37(27.41)		24.38(2.06)		71.69(10.87)	
(2) Periodic inspection (government-funded)	135.37(25.32)		23.50(2.60)		70.90(11.32)	
(3) Found anomalies	134.61(24.5)		24.00(2.35)		67.83(9.75)	

Table 3

	Resilience		Health Literacy		Quality of life	
	$\beta$ (s.e)	p-value	$\beta$ (s.e)	p-value	$\beta$ (s.e)	p-value
Education (ref=>college)						
(1) <senior High	-0.19(5.74)	0.974	-0.26(0.71)	0.719	6.40(2.61)	0.0166
(2) Senior college	-10.01(5.87)	0.0926	-0.16(0.72)	0.8293	2.57(2.67)	0.3386
Income(ref=>1,000,000)						
(1) <600,000	-7.50(6.43)	0.2466	-0.43(0.79)	0.5924	-3.32(2.92)	0.2596
(2) 600,000- 1,000,000	11.56(6.32)	0.0716	-0.10(0.78)	0.903	0.36(2.88)	0.9004
Living area(ref= Eastern)						
(1) Northern	-0.70(8.72)	0.9366	-1.48(1.08)	0.1723	3.95(3.97)	0.3226
(2) Central	5.71(10.14)	0.5748	-1.22(1.25)	0.3328	-3.20(4.61)	0.4898
(3) Southern	13.18(10.19)	0.1997	-1.03(1.26)	0.4155	3.65(4.64)	0.4338
marital status(ref=others)						
(1) Single	-2.20(9.22)	0.8125	-1.10(1.14)	0.3346	1.46(4.19)	0.7284
(2) Married	-3.33(8.32)	0.6899	-1.18(1.03)	0.2545	-3.06(3.78)	0.4212
Not Live with family	1.31(7.25)	0.8576	0.05(0.89)	0.9595	-0.42(3.30)	0.8985
Not Having religion	-6.14(4.71)	0.1964	-0.22(0.58)	0.7035	4.34(2.14)	0.046
Working status(ref= Leave due to illness)						
(1) In Employment	6.81(7.20)	0.3468	1.46(0.89)	0.1043	7.58(3.27)	0.0232
(2) Part-time	21.99(8.89)	0.0156	1.53(1.10)	0.1659	9.41(4.04)	0.0227

(3) Home management	1.75(8.41)	0.8359	1.41(1.04)	0.1766	9.07(3.82)	0.0202
(4) Retired/Unemployed	3.78(8.27)	0.6494	2.02(1.02)	0.0513	4.50(3.76)	0.2353
Not First-time having cancer	-1.74(6.54)	0.7915	-0.92(0.81)	0.2589	5.57(2.98)	0.0652
Cancer stage(ref=4)						
0	12.89(12.75)	0.3154	-1.13(1.57)	0.4738	6.42(5.80)	0.2722
1	16.59(8.17)	0.0459	-0.60(1.01)	0.5553	-2.22(3.72)	0.5515
2	9.57(8.18)	0.2456	-0.85(1.01)	0.4033	-2.24(3.72)	0.5485
3	2.71(9.97)	0.7864	-1.03(1.23)	0.4046	-1.55(4.53)	0.7332
Treatment status(ref= Nonaggressive treatment)						
On treatment	23.04(17.85)	0.2008	-1.75(2.20)	0.4281	-0.47(8.12)	0.954
Completed	31.41(17.51)	0.0769	-2.06(2.16)	0.3445	2.05(7.97)	0.7976
Co-existing disease(ref=2+)						
0	-10.57(8.81)	0.2341	0.35(1.09)	0.7473	0.29(4.01)	0.9428
1	-6.36(9.92)	0.5233	-0.71(1.22)	0.5651	-0.08(4.51)	0.9866
Health status before having cancer(ref= Very good)						
(1) Very poor	-24.90(18.30)	0.1778	-0.69(2.26)	0.7624	-4.45(8.32)	0.5946
(2) Poor	-24.51(9.75)	0.0141	0.47(1.20)	0.6995	-5.14(4.43)	0.2503
(3) Ordinary	-10.94(6.41)	0.0918	0.32(0.79)	0.687	-0.14(2.91)	0.9617

(4) Good	-7.73(6.19)	0.2155	0.05(0.76)	0.9467	-0.22(2.81)	0.9365
Paying attention on health(ref= Always)						
(1) Never	-2.44(10.77)	0.8214	-0.02(1.33)	0.9892	-5.46(4.90)	0.2687
(2) Seldom	7.13(9.40)	0.4506	1.71(1.16)	0.1433	-4.48(4.27)	0.298
(3) Sometimes	-18.22(8.33)	0.0318	1.57(1.03)	0.1308	-4.15(3.79)	0.2764
(4) Usually	-9.87(8.83)	0.2673	1.87(1.09)	0.0906	-4.27(4.01)	0.2906
How find(ref= Found anomalies)						
(1) Periodic inspection (self-pay)	-0.66(6.98)	0.9244	0.48(0.86)	0.5817	0.38(3.17)	0.9051
(2) Periodic inspection (government-funded)	-7.83(5.65)	0.1704	-0.44(0.70)	0.5334	2.38(2.57)	0.3573

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Table 4. Estimate  $\beta$  (SE) and Standardized  $\beta$  of main variables

	<b>Main variables</b>	<b>Estimate <math>\beta</math> (SE)</b>	<b>Standardized <math>\beta</math></b>
<b>IV</b>	<b>DV</b>		
HL	QoL	-0.28(0.14)	-0.07
HL	RS	0.40(0.97)	0.04
RS	QoL	-0.01(0.01)	-0.19

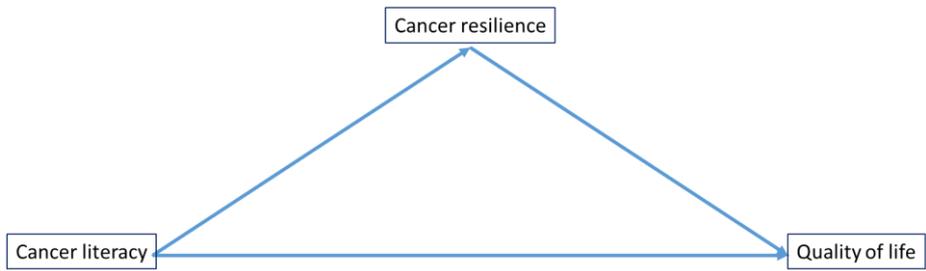


Figure 1 Research Conceptual Framework

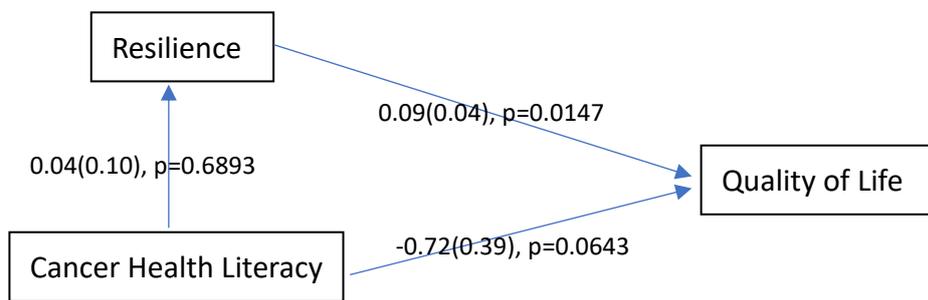


Figure 2 Structure Model

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## 一、參加會議經過

本次筆者在科技部計畫支持下，於 2019 暑假之初於 6/2-4 至美國華盛頓特區參加 2019 AcademyHealth Annual Research Meeting。

### AcademyHealth Annual Research Meeting 會議第一天(6/2)

在一早報到完後，便是 Welcome and Introductions。AcademyHealth 的 President 與 CEO Dr. Lisa Simpson 簡單說明這次大會的活動概要。接著大會安排專題演講，主題是：Today's Research Driving Tomorrow's Outcomes: What Will Be the Role of Evidence?

本屆的開場非常特別，大會邀請了小提琴家 Swil Kanim 進行演奏。接著是以座談的方式，由洛杉磯時報的 Noam Levey 擔任主持人，邀請 Aaron Carroll, Dora Hughes、Noam Levey、Terri Tanielian、Chad Terhune 等來自產官學界的代表人士討論 Will Evidence Matter in a World of Misinformation? And What is the Role of Media?座談與聽眾提問的狀況可以發現，目前美國公共衛生學界對於錯誤資訊所帶來的影響，普遍感到憂心。

在結束 plenary section 後，筆者第一場所參加的分場主題是“Hospital Quality: The Evolving Response to Markets and Measures”。這個分場共計有四篇論文發表，分別是：(1) The Impact of Hospital Mergers on Clinical Quality of Care and Patient Experience; (2) Are Preventable Hospitalizations Improving over Time across U.S. Health Markets? (3) The Influence of the Regional Health Care Environment on Hospitalization Practices from the Emergency Department Among Medicare Beneficiaries (4) The Impact of Patient Non-Clinical Factors on Emergency Department Hospitalization Practices。第一篇研究是醫院在被併購後對醫療品質所產生的影響，研究結果發現被併購的醫院在病人經驗部分是變差的，但在照護過程的績效有所提升，可是在照護結果(再住院、死亡)卻是沒有差異。第二篇研究是討論在國家政策介入後，可預防住院是否隨著時間而減少。該研究結果發現在 2011-2015 年間，可預防住院的比例平均每年下降 20.3/10000。其中因慢性肺阻塞或氣喘住院，以及細菌性肺炎下降的比例最高。但若將分析層次提升至市場層級，則並未有明顯改變。第三篇討論的則是市場與醫院特性對於急診病人住院的影響，結果發現市場因素對於病人住院的影響力相當的小。第四篇則是急診病人非因臨床因素而住院的狀況，結果發現像是喪偶、行動能力是急診住院的預測因子。但非臨床因素住院的影響力，在不同症狀間有極大的變異，像是失智、股骨骨折、噁心、疲

累等的解釋力較高，但在心律不整、皮膚/軟組織感染、慢性肺阻塞、肺炎等的解釋力則較低。

之後筆者又參加了”The Affordable Care Act Under Trump: Research on Enrollment, Marketing, Coverage, and Public Attitudes”由於美國在新政府上台後，對於歐巴馬健保(Affordable Care)的議題上有相當熱烈的討論，因此參加這場討論。這個分場的報告主題如下: (1) The Trump Effect: Post-Inauguration Changes in Marketplace Enrollment; (2) Marketing and the Marketplace: Differences in Television Advertising for Health Insurance in 2017 Compared to 2016; (3) Experiences of Adults with Chronic Conditions Under the ACA’s Nongroup Coverage Expansion; (4) Polling on Health Care Policy during President Trump’s First Year in Office。從這幾位與談人的報告中，的確發現新政府上台後，ACA 的執行以及民眾的意向已經有相當程度之改變，後續發展值得持續關注。

#### AcademyHealth Annual Research Meeting 會議第二天(6/3)

會議第二天早上第一個活動是海報展，筆者在這個時段也有海報展示，主要是和與會者進行討論。在海報展結束後，則是分場報告。筆者所參加的第一個分場主題是“Structural and Organizational Factors that Influence Care Quality and Outcomes”。這個分場共有四篇研究發表，分別是：(1) Factors Affecting Implementation of Patient-Centered Medical Homes for Older Adults in the Veterans Health Administration Using the Consolidated Framework for Implementation Research; (2) Do Organizational Culture and Climate Moderate Implementation Strategy Effectiveness? Results from a Cluster-Randomized Trial of Implementation Interventions for Enhanced Outreach to Veterans with Serious Mental Illness; (3) 12 Month Outcomes of a Cluster Randomized Implementation Trial to Enhance Uptake of a Mood Disorders Collaborative Care Model in Community Practices (4) Examining Local Influences on Implementation By Applying Case Study Research Methodology to a Multi-Site Trial

這四篇都是用 Consolidated Framework for Implementation Research 來進行研究，筆者近期與鍾國彪教授合作之研究也是有應用到此研究架構，因此參與本場次來了解美國如何利用 Consolidated Framework for Implementation Research 來進行 Implementation Research。

今天所參加的第二個分場是 Publish or Perish: Meet the Editors，這個分場

是由 AcademyHealth 的主席 Lisa Simpson 主持，邀請了 Paul Wallace (AcademyHealth)、Ian Norman (King's College London)、Amol Navathe (University of Pennsylvania)、Sarah Dine (Health Affairs)、Christopher Koller (Milbank Memorial Fund) 分享投稿時需要注意的事項，包含該如何選期刊、審查過程等等

今天下午所參加的第一場次為 Best of ARM: Trends in US Hospital Care: Effects of New Policies and New Care Delivery Models。這場次共有四篇研究發表，主題分別為(1) The Impact of Medicaid Expansion on Preventable Hospitalizations; (2) Impact of the CMS Initiative to Reduce Avoidable Hospitalizations Among Nursing Facility Residents on Mortality; (3) The Problem of Excluding Observation Stays from Hospital Readmission Measures; (4) Health Status, and Hospital Admissions in Medicare Patients at Increased Risk of Hospitalization: Initial Findings of a Randomized Trial。這些研究都將有機會發表在 Medical Care、Health Service Research 等一級期刊，透過作者發表更能了解研究設計的重點

傍晚還參加 Dissemination and Diffusion of Evidence-Based Practices and Policies，這個分場共有四個研究發表，分別是(1) Integrating Innovation: How New Hospital Practices Become Routine; (2) Can Patient-Centered Care Innovation Affect Patients' Experiences of Care? (3) Understanding the Complex Associations among Implementation Context, Processes, and Outcomes in a Patient Safety Collaborative: A Structural Equation Modeling Approach; (4) Impact of Middle Managers in Building Improvement Capability in VA: Lessons Learned from the Field。第一篇研究是利用質性訪談的方式，訪問了十家醫院，探討醫院如何將新的做法(new innovation)融入醫院日常作業之中。在 90 個訪談中，該研究發現，要將新的做法融入既有系統之中，必須從改變員工態度與常規、改變誘因、自動化三部分，醫院在推展新的作法時，必須事先進行規劃與保留執行預算。第二篇研究透過問卷評估推行以病人為中心的照護後，是否改變病人就醫經驗?結果顯示，在推行以病人為中心的照護後，溝通過程；實體環境與整體的滿意度，較推行之前提升許多，但長期的效果仍有待探討。第三篇研究則是用 Consolidated Framework for Implementation Research (CFIR)來評估推行病人安全活動時，背景因素、過程與結果三者之間複雜的關係，這篇研究並利用結構方程模式進行分析。這篇研究則是最典型的 Implementation research，從理論基礎到收集內外環境變數、介入相關

的變數、個人變數以及執行過程等，做充分的資料收集，才足以進行評判究竟推行病人安全活動的結果為何，可以了解障礙與促進因子是什麼。第四篇研究則是透過扎根理論來探討中階管理人在建構改善能力時所扮演的角色。

#### AcademyHealth Annual Research Meeting 會議第二天(6/4)

今天是會議最後一天，大會只有安排半天的活動，一如往常，第三天的活動現場已經相對冷清。今天早上筆者只參加一個分場，主題是 Best of ARM Hot Topics: Innovative Policy Evaluations for Optimizing Health, Health Care Financing, Access, and Equity。該分場一樣有四個題目發表，分別(1) Immigrants Contributed \$25.1B More to Private Insurers Than They Took out in 2014; (2) The Potential Impact of Repealing the Individual Mandate on the Individual Insurance Market in California; (3) Opioid Overdose Hospitalization Trajectories in States with and without Opioid Dosing Guidelines; (4) Does the Structure of Physician Referral Networks Matter for Physician Cost Performance? Evidence from Medicare

#### 二、與會心得

首先很感謝科技部的經費支持，讓筆者可以在每個學年末有機會可以參加國際會議充電。AcademyHealth Annual Research Meeting 是過去數年來，筆者一直持續有在參加的活動。筆者認為台灣的學界在政策制定與評估過程的參與，特別是在計畫的評估部分，有很大的改善空間。病人為中心是美國近年來的研究重點，從這次的會議中，筆者發現有這項議題可以從很多角度去驗證，這些對於後續的研究有很大的助益。此外，實務與研究的互動相當的重要，許多研究的結果並無法落實到實務工作，雖說這是 implementation research 的研究範疇，但學界也該思考如何讓研究成果轉換成實務工作，以幫助更多的病患、民眾。在此領域台灣才剛起步，美國的經驗或許值得我們參考與學習。

#### 三、發表論文全文或摘要

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**An Insight into Patient Experience of Cancer Care in Taiwan**

Tsung-Hsien Yu, Ph.D, National Taipei University of Nursing and Health Science, Taipei City, Taiwan and Kuo-Piao Chung, National Taiwan University, Taipei, Taiwan

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**Abstract Text:****Research Objective:**

Patient centered care is the ultimate goal for healthcare system in 21<sup>st</sup> century, understanding the patient's perspective of care is critical for improving quality of care, especially in cancer care. Many countries have been using patient experience data to measure healthcare quality, but most of them are from western countries, the view of eastern country is lacking. Therefore, the purpose of this study is taking Taiwanese cancer patients as example to investigate the patient's experience, and explore whether the experience is varied among patient's characteristics.

**Study Design:**

A cross-sectional questionnaire survey was conducted, the UK's cancer patient experience survey questionnaire was selected, and the formal translation and cultural adaptation procedure was applied. Otherwise, we followed Macmillan Cancer Support's suggestion to classify patient's experience into 9 categories- Patient Centered Care, Timely referral into secondary care, Communication, Information support, Emotional Support, Share Decision Making, Continuity of Care, Financial and Work Support, Physical Environment- for analyzing the results in detailed.

**Population Studied:**

All cancer certificated hospitals (n=19) and two major nationwide cancer patient associations were invited, 9 hospitals and 2 associations were joined. A total of 4,000 questionnaires were administered by outpatient nurses in hospitals and office staffs in cancer patient associations. Cancer patients who are currently undergoing treatment or who are finished treatment of cancer were selected as study participants

**Principal Findings:**

1,010 questionnaires were returned (25.25% response rate), and 148 questionnaires were excluded because the information of patient's characteristic was missing. Around 70% of respondents were female, the majority of cancers in the sample were either breast or colorectal and two thirds of the cancers were stage 3 or less. 70% respondents' cancer history was less than 5 years, and more than 60% respondents had cancer diagnosis at 40-60 years old. Our finding showed most respondents had positive experience of cancer care, but the experience was varied among categories, respondents were most satisfied with physical environment (90%) and least satisfied with "timely referral into secondary care" and "shared decision making" (64%). The experience was also varied among patient's gender, cancer type, cancer stage, cancer history, hospital level and age at the time of having cancer as well.

**Conclusions:**

The results of this study are not only providing an insight into patient experience of cancer care in eastern setting, but also offering a guidance for improving cancer care

**Implications for Policy or Practice:**

Cancer is a critical and complex illness and cancer patients would benefit from a holistic care model, such as patient-centered care. A more holistic care model would improve patient-reported outcomes, such as quality of life, survivorship, self-management, and outcome of care. This study provides an insight into cancer care in Taiwan from the patient's perspective. The results may provide a basis for establishing a patient-centered care model for cancer care in Taiwan.

**Title:**

An Insight into Patient Experience of Cancer Care in Taiwan

**Theme:**

Patient-Centered Research

**Preferred Presentation Format:**

Poster Only

**Journal Partnership:**

JAMA and HSR

**Presentation Agreement:**

Yes

**Complete Data:**

Yes

**Primary Funding Source:**

No Funding Source

**Learning Objectives:**

identify cancer patient's experience  
compare the difference among patient's characteristics

**Poster Number:**

A-364

First Presenting Author

***Presenting Author***

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[Click to view Disclosure](#)

四、建議

無

五、攜回資料名稱及內容

大會手冊乙本

六、其他

無

107年度專題研究計畫成果彙整表

計畫主持人：游宗憲			計畫編號：107-2410-H-227-008-SSS				
計畫名稱：探討癌症病患健康識能、復原力與生活品質相關性之系列性研究							
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		
	智慧財產權及成果	專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權		0			
		營業秘密		0			
		積體電路電路布局權		0			
		著作權		0			
		品種權		0			
		其他		0			
	技術移轉	件數		0	件		
		收入		0	千元		
	國外	學術性論文	期刊論文		0	篇	
			研討會論文		1		2019 Academyhealth Annual meeting
			專書		0	本	
專書論文			0	章			
技術報告			0	篇			
其他			0	篇			
智慧財產權及成果		專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權		0			
		營業秘密		0			
		積體電路電路布局權		0			
		著作權		0			
		品種權		0			
其他		0					

	技術移轉	件數	0	件	
		收入	0	千元	
參與計畫人力	本國籍	大專生	2	人次	廖謙宇、陳奕晴
		碩士生	1		傅育亭
		博士生	0		
		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。)					

## 科技部補助專題研究計畫成果自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現（簡要敘述成果是否具有政策應用參考價值及具影響公共利益之重大發現）或其他有關價值等，作一綜合評估。

### 1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

達成目標

未達成目標（請說明，以100字為限）

實驗失敗

因故實驗中斷

其他原因

說明：

### 2. 研究成果在學術期刊發表或申請專利等情形（請於其他欄註明專利及技轉之證號、合約、申請及洽談等詳細資訊）

論文： 已發表  未發表之文稿  撰寫中  無

專利： 已獲得  申請中  無

技轉： 已技轉  洽談中  無

其他：（以200字為限）

### 3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性，以500字為限）

癌症健康識能、復原力與生活品質間的關係過去多為探討健康識能與生活品質，或復原力與生活品質間的關係，三者之間如何互動尚不清楚。且過往研究大多非採用適用癌症病人之量表來進行探討。本研究除補足過往研究缺乏三者互動之研究缺口外，亦採用適用癌症病人之健康識能、復原力與生活品質量表，此在相關研究的效度上將可有效提升。且本研究之發現，可供主管機關強化癌症病人健康識能之重要參考

### 4. 主要發現

本研究具有政策應用參考價值： 否  是，建議提供機關衛生福利部，（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

說明：（以150字為限）

本研究發現癌症健康識能與復原力皆會影響生活品質，而癌症健康識能與生活品質的關係，可透過增強復原力而提升。因此，主管機關可藉由提升癌症病人之癌症健康識能來提高其復原力，以提升生活品質