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巴金森病人之情緒功能:長期追蹤研究(III)

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摘要

巴金森病是一種常見中樞神經系統的退化疾病。運動障礙、認知功能缺損、以及情緒功能失調，特別憂鬱問題是主要的症狀。但是文獻上所呈現這類患者罹患憂鬱與焦慮問題的盛行率，卻是不大一致。本研究計劃以三年的時間，利用追蹤方式來探討這個爭議未決的問題。

完成第三年研究計劃，總共收集到 192 位成年受試參與本研究，其中包括 127 位巴金森患者和 65 位正常受試。依照侯-葉氏(Hoehn-Yahr,1967)運動障礙評量表 127 患者中，58 位屬於第一級輕度運動障礙、52 位第二級輕中度運動障礙、以及 18 位第三級中度運動障礙.。每一位受試都分別接受一組認知功能之神經心理測驗，以及一組情緒功能之測量。受試之主要照顧者同時也接受一組情緒功能之測量。完成第一年追蹤研究之受試者總共 53 人；其中 21 人屬於第一級輕度運動障礙、17 位第二級輕中度運動障礙、9 位第三級中度運動障礙，以及正常受試者 6 位。完成第二年追蹤研究之受試者總共 22 人；其中 4 人屬於第一級輕度運動障礙、3 位第二級輕中度運動障礙、5 位第三級中度運動障礙，以及正常受試者 10 位。

初步資料分析之結果顯示巴金森病患呈現情緒功能失調的問題。主要包括了憂鬱、焦慮、身心不適、強迫性行為等症狀。大約 40%的巴金森患有憂鬱的問題；第一級輕度運動障礙患者有 43%患有這種情緒症狀、第二級輕中度運動障礙患者有 30%、第三級中度運動障礙患者有 50%。這三組巴金森病患中約有 55%罹患失智症狀群，不過只有 40%的這些失智患者同時出現憂鬱症狀。完成第一年追蹤研究之患者中，約有 32%呈現憂鬱問題。第一級輕度運動障礙患者有 24%、第二級輕中度運動障礙患者有 35%、第三級中度運動障礙患者有 44%這種情緒症狀。憂鬱症狀程度達到重憂鬱症(major depressive disorder)約有 15%；其中第一級輕度運動障礙患者約 15%、第二級輕中度運動障礙患者 18%、第三級中度運動障礙患者 11%出現該疾患。完成第一年追蹤研究之患者中約有 64%罹患失智症狀群。完成第二年追蹤研究之患者中，約有 50%呈現憂鬱問題。第一級輕度運動障礙患者有 50%、第二級輕中度運動障礙患者有 100%、第三級中度運動障礙患者有 33%這種情緒症狀。憂鬱症狀程度達到重憂鬱症（major depressive disorder）約有 33%；其中第一級輕度運動運動障礙患者約 50%、第二級輕中度運動障礙患者 0%、第三級中度運動障礙患者 33%出現該疾患。完成第二年追蹤研究之患者中約有 40%罹患失智症狀群，不過只有 50%的這些失智症患者同時出現憂鬱症狀。

關鍵詞:情緒狀態、巴金森病、單氨類化學物質失調

ABSTRACT

Parkinson's disease (PD) is a prevailing degenerative disease of central nervous system. Motor symptoms, cognitive impairments including dementia, and emotional disturbances, especially depression are the cardinal features of the disease. The prevalence rate of depression and anxiety in the parkinsonian patients has a great variation. The present 3-year follow-up study, thus, is designed to examine emotional function in these patients.

In this third-year study, we included a total of 192 adult participants, 127 patients with idiopathic PD and 65 normal controls. On the basis of the motor staging of Hoehn and Yahr (1967), Group 1 consisted of 58 patients with the staging I, Group 2 included 52 patients with the staging II, and Group 3 were composed of 18 patients with the staging III. Each subject received a series of non-emotional neuropsychological test battery, and emotional status measures. The significant informant of each subject also received a series of emotional function measures. 53 patients completed the first-year follow-up. Among these, 21 of them were rated as the staging I in terms of their motor disabilities; 17 the staging II; and 9 the staging III, as well as 6 normal counterparts. 22 of these subjects have received the second-year follow-up. Among them, 4 patients were rated as the staging I of Hoehn-Yahr Scale, 3 the staging II, and 5 the staging III, as well as 10 of normal control subjects.

Because of a high dropout rate, only 6 out of 12 patients completed the 2nd-year follow-up of emotional status examination. The preliminary results revealed that about 50% of our patients manifested depression symptom. Among them, 50% of patients with staging I, 100% with staging II, and 33% with staging III were evident of this symptom. About 33% suffered from Major Depressive Disorder in which 50%, 0%, and 33% with the motor stagings I-III respectively had this disorder. About 40% of our patients suffered from the syndrome of dementia based on the demented diagnostic criteria of the DSM-IV. However, about 50% of these demented patients were also evident of depression problem.

Keywords: Emotional Status, Parkinson's Disease, Monoaminergic Imbalance

INTRODUCTION

Review of the literature indicates that the prevalence rate of depression in the parkinsonian patients has a great variation, ranging from 4% to 70% with an average of around 40% (Cummings, 1992). This considerable variation is mainly attributable to methodological discrepancy, such as the divergent source patient populations, and various ways of depression diagnosis (e.g., based on the DSM system, semi-structured interview, or psychometric measures) (Sano, Marder & Dooneief, 1996). The investigators (Hoen & Yahr, 1967; Sano et al., 1989) reported about 51% of depression in PD based on clinic/hospital-based studies, and about 32% based on population-based investigations. Taken these data together, it implicates that at least about 50% of the patients with PD do not suffer from depression. Depression has been thought to be associated with a widespread monoaminergic dysfunction, and degeneration of serotonic and noradrenergic projections occurs alongside degeneration of dopaminergic neurons in the patients with PD (Beatty, 1995; Conn, 1995; Fibigier, 1984; Mayeux, 1990). Accordingly, it is expected that the patients with PD but without depression will be evident of depression gradually along with the neural degenerative processes. This issue, however, has been lacking in systematic investigation.

Otherwise emotional disturbances, such as anxiety, mania, hypomania, and psychosis characterized by paranoid delusions and hallucinations have also reported in the patients with PD (Iruela, Ibanez-Rojo, Palanca, & Caballero, 1992; Stein, Heuser, Juncos & Uhde, 1990). These problems, however, are rare and most of them were associated with the patient's taking antiparkinosnian medications (Celesia & Barr, 1970; Factor & Brown, 1992; Goodwin, 1971; Jouvent et al., 1983; Lang et al., 1982).

A prospective longitudinal study of emotional function changes, particularly for depression, in the patients with PD is limited. Using such a research design with one-year follow-up, Starkstein and his colleagues (1990, 1992) have investigated depression in the patients with PD. The results revealed that both depressed and non-depressed patients had a significant deterioration of cognitive function (the former was remarkably more severe than the latter), and about 18 % (10 out of the 55) of the non-depressed patients with PD were progressively evident of depression a year later. The findings seem to partially support the hypothesis of depression associated with a widespread monoaminergic imbalance in the patients with PD (Fibigier, 1984; Mayeux, 1990). Because these results were only based on a one-year follow-up, the hypothesis, however, deserves further investigation.

The report of emotional disturbances, particularly depression, in the patients with

PD in Taiwan is meager. In order to explore the aforementioned issues (i.e., the prevalence of depression and otherwise emotional disturbances, and the hypothesis of monoaminergic imbalance and its relation to depression and anxiety), and to document the literature in Taiwan, we design this three-year longitudinal study. In our study, 2 groups of participants, 1 cohort of parkinsonian patients and 1 group of normal controls will be included. The goal of the first-year study is to complete the initial and part of 1-year follow-up evaluation of the emotional status and cognitive function. The objective of the second-year study is to complete 1-year follow-up and part of 2-year follow-up evaluation of emotional status and cognitive function; and the third-year is to complete 2-year and part of 3-year follow-up evaluation of emotional status and cognitive function.

The specific aims of the study, thus, are to examine the following questions: 1) Is there an impairment of emotional status in the patients with PD? 2) If so, does the deficit only involve depression or also include otherwise emotional function evaluated? 3) If depression symptoms do occur in the patients, are they persistent in nature and can thus these patients be diagnosed as Major Depressive or Dysthymic Disorder? 4) If anxiety symptoms do occur in the patients, are they persistent in nature and then can these patients be classified as Generalized Anxiety Disorder? 5) If depression does occur, is it significantly associated with dementia? 6) If depression or anxiety does not occur in the patients with PD at first, will it be evident in company with the progression of the disease?

METHOD

Participants. A total of 192 adult participants, including three groups of patients with idiopathic PD with varying degree of motor disabilities and one normal control group, participated in the 1st- and 2nd-year study. Groups (Gps) were matched for age and educational level. Although 47 patients completed the 1st-year follow-up, only 12 patients completed the 2nd-year follow-up. The VIQ of Gps 4 and 1 were significantly higher than that of Gps 2 and 3 (Table 1). The diagnosis of PD was based on the Parkinson's Disease Society Brain Bank in London (PDSBB) guidelines (Fahn & Elton, 1987), and the patients with severe motor symptoms (staging 5) according to the criteria derived from Hoehn and Yahr (1967) were excluded in the study. All of the patients were also free of any other CNS, and psychiatric history.

All participants were right-handed in which hand dominance was ascertained by the history that the participant has always used his/her right hand preferentially for doing skillful activities, such as writing and holding chopsticks.

Tests and Procedure. After giving informed consent, each participant received a series of neuropsychological tests. These tests included following cognitive tests: the Temporal Orientation Test (Benton, Hamsher, Varney & Spreen, 1983), the

Orientation to Personal Information and Place (Hamsher, 1983), the Object Naming Test (Spreen & Benton, 1969), the Semantic Association of Verbal Fluency (Hua, 1987), the Token Test (Benton & Hamsher, 1978), the verbal subtests of the WAIS-R (Wechsler, 1981), the Judgment of Line Orientation (Benton et al., 1983), the Facial Recognition Test (Benton et al., 1983), the Word Sequence Learning (Hua, 1987), the Benton Visual Retention Test (Benton,1974), the Wisconsin Card Sorting (Nelson, 1974), and the Trails Making A and B (Reitan & Wolfson, 1993). The battery also included the following emotional status measures: Symptom Checklist-90-R (Derogatis, 1977), Beck Depression Inventory (Beck,1987), and a semi-structured Standard Neurobehavioral Interview Inventory (Hamsher, 1983). Evaluations were administered in an examining room between 11AM and 2 PM to minimize any possible effects of diurnal mood variation on interview response, as suggested by Starkstein and his colleagues (1992). All these measures are Chinese versions.

In order to obtain reliable and valid ratings of the patient's emotional status, we asked the significant informants, particularly family caregivers of the patient, to rate the patient's emotional function. All of the significant informants of the patients were free of emotional disturbances, dementia, and psychiatric history. Each participant received the above evaluation at around 1 week after the diagnosis of PD, and at 12, 24, and 36 (if possible) months following the first evaluation.

RESULTS

Since there was a high dropout rate in the 2nd-year follow-up and only a small sample of subjects participated in the study, the non-parametric statistical procedures, Kruskall-Wallis one-way ANOVA, were used to analyze the test score or scale rating differences between the patients and normal controls. The post-hoc pairwise comparison procedure, Nemenyi's contrasts, was subsequently employed if H values reached a statistically significant level. On the non-emotional status measures, performance of normal control subjects on these tests overpowered that of patients in which performance of patients with motor staging I was better than that of patients with motor stagings II and III. that of their normal counterparts (Tables2-5). However, only the correct score differences of the Word Sequence Learning Test between normal control subjects and patients with motor staging III on the Word Sequence Learning reached a statistically significant level.

On the emotional status measures (Table 6), the patients' score on the Beck Depression Inventory was higher than that of their normal counterparts. The patients' rating scores on Somatic, Obsessive-Compulsive, Depressed Mood, and Anxiety Symptoms subscales on the SCL-90-R were higher than their normal counterparts. However, score differences of these tests were not statistically significant.

Concerning the ratings of the patients' and normal controls' significant

informants on the subjects' emotional status with the Beck Depression Inventory and the 4 subscales of SCL-90-R, the scores of the patients' significant informants were also higher than those of the normal controls (Table 7). However, these rating differences did not reach a statistically significant level. The ratings between the patients and their significant informants on both of the emotional scales were consistent.

The examiner's ratings of the four group subjects' emotional status based on the items 9, 13, 15, 17, and 21 (which are associated with depression), and items 4 and 25 (which are related to anxiety) of the Neurobehavioral Rating Scale Interview are indicated in Table 8. The results revealed that on the depressed mood and anxiety ratings, the mean score of Gps 1, 2 and 3 was higher than that of their normal counterparts. However, these differences did not reach a statistically significant level.

We used a preliminary cut-off point score of 12 or more; that is, 1.5 standard deviation above the mean score of the normal controls on the Beck Depression Inventory, to determine whether the patient had depressed mood. On the basis of this cut-off point score, we classified about 50% (6 out of 12) of our patients evident of depression symptom. Among these depressed patients, about 50% (3 out of 6) patients were rated as the motor staging I, about 100% (2 out of 2) the staging II, and 33% (1 out of 3) the staging III. There were about 33% evident of Major Depressive Disorder(MDD). Among these patients, 50% with motor staging I, 0% with motor staging II, and 33% with motor staging III.

On the basis of the dementia criteria of the DSM-IV, 40% (4 out of 10) of our patients were included in this diagnostic category. Among these demented patients, about 50% (2 out of 4) manifested depression.

DISCUSSION

Is there an impairment of emotional status in the patients with PD? On the basis of our preliminary results, our patients did have emotional problems. We found that about 50% of our patients with PD were evident of depressed mood. In the literature, depression has often been observed in parkinsonian patients (Mayeux et al., 1986; Ring et al., 1994). The prevalence rate of depression in the patient population was around 40% in average ranging from 4% to 70% (Cummings, 1992). Our results indicating the evidence of depression problem in the parkinsonian patients did corroborate the prior findings. Furthermore, about 50% of our parkinsonian patients having this emotional function seemed to be not only compatible with the prevalence rate reported in western literature (Cummings, 1992), but also with the recent observations (Liu et al., 1997) based on a sample of Taiwanese patients with idiopathic PD. However, our results of about 33% our patients having major depressive disorder based on the current available 2nd-year follow-up seemed to be

inconsistent with the prior findings (e.g., Kostic et al., 1994; Liu et al., 1997). This might be partially due to our small sample of patients (About 15% patients with major depression in our 1st-year follow-up was consistent with prior researchers' findings).

Is depressed mood associated with degree of motor disabilities in our patients with PD? The answer seemed to be negative. Liu and his colleagues (1997) noted that most of their depressed patients had nothing to do with their motor disabilities in terms of motor symptom staging (mainly, I and II) of Hoehn and Yahr (1967). Likewise, our patients included the motor stagings I-III, and we did find that the depression proportion of patients with motor staging I was lower than that of patients with staging II. However, the depression proportion of our patients who had moderate motor severity (stage III) manifested depression symptom was lower than that of patients with staging I. On the basis of the findings of both studies, we would suggest that depression problem evident in patients with idiopathic PD might not have a remarkable association with their motor disabilities. In light of scanty literature on this issue, our tentative claim awaits further investigation.

If so, does the deficit only involve depression or also include otherwise emotional function evaluated? The answer appeared to be partially positive. In addition to depression evident in our patients with PD, otherwise emotional disturbances, including somatic, obsessive-compulsive, and anxiety symptoms were slightly to mildly also manifest, particularly for patients with staging III. Among these symptoms, anxiety seemed to be slightly remarkable compared with other problems.

If depression does occur, is it significantly associated with dementia? The answer might be partially true. In the literature, the prevalence rate of dementia in patients with PD has been controversial, ranging from 2% to 93%, and the variation probably attributable to different definitions of dementia and population investigated (e.g., Dubois, Boller, Pillon, & Agid, 1991). In the recent reports, Chui (1989), Mayeux and his co-workers (1988), and Rajput (1992) found that the prevalence rate in the demented patients with PD was in the range from 10% to 40%, while Dubois and colleagues (1991) reported about 50% patients suffering from dementia. It appeared that the frequency of our demented patients was consistent with researchers' observations Mayeux and his co-workers' (1988) while it was higher than that of others' (e.g., Dubois et al., 1991). These inconsistent results await further investigation. In addition, the present results revealed that dementia did not seem to be positively associated with the degree of motor disabilities in our patients with PD. Our results further corroborated these previous findings (e,g., Sagar, 1999).

The investigators (Mayeux et al., 1981) claimed that there was a remarkable relationship between depression and dementia in the patients with PD. We found that 50% of our demented patients with PD were also evident of depression symptom and

these results seemed to partially substantiate Mayeux and his colleagues' observations..

Self-awareness is one of the frontal lobe functions (Stuss & Alexander, 2000), and the neuropathological involvement of frontal-striatal loop is generally evident in patients with PD (e.g., Lichter & Cummings, 2001). Accordingly, these patients' subjective complaints of emotional disturbances, such as depressed mood on the conventional inventories (e.g., Beck Depression Inventory) or interview scales (Hamilton Depression Scale) might not be valid and reliable because of their poor self-awareness functioning. In the present study, we determined whether the patient manifested depressed mood based on multiple data sources, including the patient's self-report, his/her significant informant's description, and the examiner's clinical observations, rather than the patient's self-report only used in the prior studies. Thus, it appeared that our results might be more justifiable than those previous ones, and the contradictory findings might also be partially attributable to this methodological variation.

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Table 1. Demographic Data and VIQ Score of Subject Groups (2nd year follow-up)

	Gp1 (n=4)			Gp2 (n=3)			Gp3 (n=5)			Gp4 (n=10)			H	p
	M	(SD)	Range	M	(SD)	Range	M	(SD)	Range	M	(SD)	Range		
Age(years)	55.75	11.38	44-66	53.67	13.65	38-63	71.20	6.22	64-81	63.00	8.38	51-77	7.45	>.05
Edu.(Yrs)	11.50	2.08	9-14	9.00	3.00	6-12	8.25	4.92	3-16	13.00	3.18	6-16	6.19	>.05
VIQ	97.50	3.11		78.00	10.82		76.80	12.50		112.10	11.40		16.00	<.05
Gender(M/F)		4/0			1/2			2/3			3/7			

WAIS-R: Wechsler Adult Intelligence Scale-Revised; H: Kruskal-Wallis one way ANOVA; a: significant pairwise contrast between Gp1 and otherwise Gps; b: significant pairwise contrast between Gp2 and otherwise Gps; c: significant pairwise contrast between Gp3 and otherwise Gps; d: significant pairwise contrast between Gp4 and otherwise Gps
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 2. Learning and Memory Test Performance of Subject Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Orientation										
TO	0.00	0.00	0.00	0.00	1.80	3.49	0.10	0.32	4.19	>.05
OPIP	11.25	0.96	11.67	0.58	10.20	2.05	11.80	0.42	3.78	>.05
Remote Memory Test	46.25	2.06	41.33	8.96	38.20	9.58	47.70	2.31	5.91	>.05
Remote Memory Test (Recognition)	48.50	1.73	47.33	3.79	44.20	5.17	49.10	2.02	6.18	>.05
Recent Memory Test	37.75	2.87	32.00	1.73	28.00	6.28	36.80	3.16	11.91	<.05
Recent Memory Test (Recognition)	40.00	0.00	38.00	1.73	34.60	4.83	39.00	1.76	8.40	<.05
Verbal learning and memory										
WSL										
Correct	50.75	2.63	44.33	11.68	25.50[d]	14.20	54.80[c]	4.61	12.62	<.05
Position	33.00	4.55	26.67	22.85	11.75	3.86	46.90	17.26	9.40	<.05
Recall	5.00	1.15	3.00	3.00	0.00	0.00	3.10	2.02	6.45	>.05
Cue	5.75	0.50	5.33	1.15	4.50	0.71	4.00	1.63	5.41	>.05
Recognition	29.50	0.58	28.00	2.65	24.00	2.37.	27.00	5.08	4.20	>.05
BVRT										
Correct	7.25	1.71	6.50	3.54	2.20	1.64	7.10	2.33	8.34	<.05
Error	3.00[c]	2.16	6.00[c]	7.07	14.80	4.76	3.40	3.20	10.10	<.05

TO: Temporal Orientation; OPIP: Orientation to Personal Information and Place; WSL: Word Sequence Learning-Revised; BVRT: Benton Visual Retention Test
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 3. Visual Perception Test Performance of Subject Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
JLO	23.75	2.99	16.67	2.52	18.25	6.18	22.70	3.53	6.43	>.05
3-DBC										
Correct	28.25	0.96	24.67	4.04	26.75	1.71	27.90	2.33	3.91	>.05
FRT	39.75	0.96	38.00	8.19	37.40	2.51	44.70	3.59	10.53	<.05

JLO: Judgement of Line Orientation; 3-DBC: Block Construction-Model; FRT: Facial Recognition Test
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 4. Core Linguistic Test Performance of Subject Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	P
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
TT	42.50	1.91	40.00	4.00	34.50	7.72	41.30	2.11	4.98	>.05
VN	55.50	1.91	52.67	2.31	48.40	7.54	54.40	3.24	5.65	>.05

TT: Token Test; VN: Visual Naming
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 5. Frontal Lobe Function Test Performance of Subject Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
WCST-M										
No. of complete										
categories	4.75	2.06	3.33	3.21	1.00	.	6.20	1.14	5.10	>.05
No. of preservative errors	3.50	4.51	4.67	3.51	6.00	.	3.00	2.31	2.21	>.05
No. of non-preservative errors	7.25	3.40	11.33	8.50	17.00	.	4.80	4.18	4.82	>.05
% of preservative errors	0.22	0.20	0.29	0.12	0.26	.	0.38	0.24	2.11	>.05
Trail Making A (sec.)	43.25	18.54	52.00	14.80	160.50	66.97	46.60	20.96	9.07	<.05
Trail Making B (sec.)	110.33	50.21	182.00	175.36	453.00	.	98.88	45.48	2.77	>.05
VF	24.00	3.46	32.33	2.31	24.80	6.87	42.70	8.67	14.52	<.05
Similarity (WAIS-R)	8.50	1.00	6.33	2.52	5.40	2.61	11.90	2.08	15.31	<.05
Digit Span(forward-backward	3.00	1.15	3.67	0.58	2.00	1.00	3.60	1.17	6.61	>.05

WCST-M: Wisconsin Card Sorting Test-Modified; VF: Semantic Association of Verbal Fluency
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 6. Emotional Status Measure Performance of Subject Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	P
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
BDI	11.50	3.54	24.00	.	6.00	4.24	7.50	6.20	3.90	>.05
SCL-90-R										
Somatization	0.52	0.49	1.20	0.29	1.13	1.00	0.53	0.37	5.46	>.05
Obsessive-compulsive	0.73	0.38	0.77	0.25	1.40	0.87	0.74	0.58	2.43	>.05
Depression	0.64	0.51	0.62	0.41	1.21	0.98	0.45	0.46	2.75	>.05
Anxiety	0.63	0.35	0.30	0.36	1.30	0.98	0.34	0.38	5.43	>.05

BDI: Beck Depression Inventory; SCL-90R: Symptom Checklist-90-R
Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 7. Emotional Status Measure Performance of Significant Informant Groups (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
BDI_F	4.00	.	16.50	6.36	7.00	1.73	6.63	7.17	3.14	>.05
SCL-90-R										
Somatization	0.08	.	1.00	.	0.86	0.13	0.33	0.47	4.15	>.05
Obsessive-compulsive	0.50	.	1.10	.	0.75	0.48	0.40	0.37	2.92	>.05
Depression	0.38	.	0.62	.	0.64	0.29	0.35	0.40	1.46	>.05
Anxiety	0.40	.	0.80	.	0.63	0.35	0.27	0.39	3.82	>.05

Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

Table 8. The Examiner's Rating Scores on the Emotional Status Interview Scales (2nd year follow-up)

	Gp1		Gp2		Gp3		Gp4		H	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Depression	0.60	.	0.40	.	0.93	0.38	0.10	0.14	8.73	<.05
Anxiety	0.50	.	1.00	.	1.25	0.35	0.00	0.00	12.90	<.05

Gp1: Hoehn & Yahr staging 1; Gp2: Hoehn & Yahr staging 2; Gp3: Hoehn & Yahr staging 3; Gp4: Normal controls

計畫成果自評

本研究 (第二年追蹤研究) 內容與原計劃大致符合，但達成目標與預期有一段距離。但由於病人的病情嚴重程度、或意願問題無法繼續參與追蹤研究，使得個案數較少並與預期有落差，因此一些欲探討的問題無法如願達成。第一年追蹤研究個案數較符合預期，未來將以該研究結果來完成論文，並投遞至期刊發表。

本研究發現巴金森病人有情緒問題，尤其是憂鬱 (50%病人)，但該問題與病人的運動障礙嚴重性沒有緊密關係，40%病人罹患失智症的情形則與國外研究大致符合。雖然本研究中有憂鬱症狀的病人裡，有 40-50%同時罹患失智症目前，但可能不能以憂鬱來解釋巴金森病人罹患失智症的原因。