

**COPING, SOCIAL SUPPORT, AND
DEPRESSIVE SYMPTOMS IN
PARKINSON'S DISEASE**

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Coping, Social Support, and Depressive Symptoms in Parkinson's Disease

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Abstract

Social support, depressive symptoms, and three methods of coping were assessed in 45 patients with Parkinson's disease (PD) and 24 comparably disabled controls. The PD subjects employed significantly fewer cognitive and behavioral coping strategies compared with the controls. Fewer depressive symptoms were related to increased cognitive coping in PD subjects. Behavioral coping strategies were associated with lesser depression among controls. Avoidance coping methods showed a marginally significant positive association with depressive symptoms in PD subjects. Social support was related to the significant coping predictors in each group, but was not related to depressive symptoms. Although correlational, these results might suggest that active (cognitive and behavioral) coping strategies are superior to avoidance strategies in attenuating the affective distress expected from chronic deteriorative illnesses.

Several studies have reported that patients with Parkinson's disease (PD) exhibit higher levels of depressive symptoms than disabled controls¹⁻³ or spouses.^{4,5} Fewer studies have systematically examined psychosocial variables which may play a role in the onset and maintenance of depressive symptoms in PD.

A review of the psychosocial risk factors associated with depression reported that age, sex, social class, marital status, and personality traits have been associated with depression.⁶ Furthermore, adverse life events,^{7,8} increased daily stressors,⁹ and supportive or critical familial relationships¹⁰ all appear to be important variables involved in the onset and maintenance of depressive episodes. However, stressful life events precede only 50% of depressive episodes and 95% of persons who experience them do not develop depression.⁸ Therefore, other factors

such as coping abilities¹¹ and social support¹² have been examined. Social supports such as family ties, involvement in the community, and the perception of supportive relationships may act as buffers in times of stress to protect persons from becoming depressed and/or may have a direct beneficial effect on mental well-being.¹³

In terms of coping methods and psychopathology, Billings and Moos¹¹ found that avoidance strategies for coping with stressors were associated with higher levels of depression, anxiety, and physical symptoms than were more active (cognitive and behavioral) coping strategies. Others¹⁴ found that stress and dysfunction may be exacerbated in individuals who attempt to selectively ignore their problems. Felton and Revenson¹⁵ found that older individuals were less likely to employ emotional expression or information seeking in coping with chronic illnesses than were middle-aged subjects. Furthermore, those who believed their illness to be very serious tended to minimize the threat of the illness rather than seek information, engage in wish-fulfilling fantasy, or attempt to cognitively restructure their situation to see it in a more positive light.¹⁵

The psychosocial risk factors associated with depressive symptomatology in PD are rarely researched. Warburton³ found that PD patients with

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high scores on a measure of neuroticism tended to be depressed. Singer¹⁶ found that PD subjects, relative to other persons of the same age, had lower incomes and were less likely to work, engage in household tasks, or enjoy a close circle of friends. They were more likely to engage in solitary activities such as watching television, reading, napping, or simply being idle. In a subsequent paper, Singer¹⁷ found that depression scores taken prior to treatment with L-dopa were significantly affected by feelings of stigma and very high self-expectations. Pretreatment depression scores, fewer feelings of stigma, less dependency upon others' opinions and advice, better symptom improvement from L-dopa, and older age all made significant contributions to the prediction of lower post-treatment depression scores. Singer also found favorable effects on activity level, social participation, and enjoyment ensuing from greater symptom improvement, calm acceptance of the disease, higher personal expectations, and a belief by patients that their families held reasonable expectations of them.

More recently, other authors^{18,19} pointed out our ignorance of such factors as the role of social interactions and coping in alleviating or intensifying depression in PD. Thus, this study set out to examine coping responses and social supports in PD subjects since these areas have been relatively neglected in the study of depressive symptoms in PD.

Method

Subjects and Procedures

Forty-five patients with a definite diagnosis of idiopathic PD were recruited from an ongoing study conducted by Sandoz Canada. No subjects were accepted if they were in the terminal stages of a fatal disease such as cancer. All PD patients were receiving either bromocriptine, Sinemet, or both medications. In all cases, the onset of PD occurred less than 5 years prior to the assessment.

All subjects who consented to participate were assessed in their own homes or at a hospital outpatient unit. A control group of 24 age- and sex-matched chronically disabled subjects was recruited from a family practice clinic ($n = 14$) and an outpatient unit of a university-affiliated hospital ($n = 10$). Criteria for inclusion into the control group included: (1) a progressive deteriorative disease; (2) the disease was not abrupt in onset; (3) disabilities produced by the disease were generally not amenable to significant amelioration by rehabilitation; (4) the

disease was generally not considered to produce psychiatric sequelae. The majority of subjects meeting these criteria were suffering from arthritic conditions, although some had other or additional diagnoses such as a Charcot-Marie-tooth syndrome, amyotrophic lateral sclerosis, and postpolio syndrome. Participation was voluntary and informed consent was obtained from each subject.

Upon completion of the consent form, each subject was assessed with the Beck Depression Inventory (BDI),²⁰ the Billings and Moos Coping Questionnaire,¹¹ and the Louisville Social Support Scale.²¹ The disability assessment consisted of the 24 item self-report Activities of Daily Living Scale (ADL) composed by Gotham et al.¹⁸ for use with patients suffering from arthritis or PD.

The Coping Questionnaire is a 19-item scale intended to assess methods used to cope with stressful events. The methods of coping include avoidance as well as active strategies (cognitive and behavioral). The cognitive scale refers to such behaviors as prayer, attempting to remain objective, and considering several ways of handling the problem. The behavioral scale assesses subjects' attempts to educate themselves about their disorder, exercise, or talk with others about their difficulties. Finally, avoidance coping strategies include such behaviors as not discussing one's feelings with others and attempting to reduce stress by eating or smoking more. For each item, subjects answered yes or no to indicate whether they had employed that particular behavior to cope with their condition in the past few months. For each scale, positive responses are summed and expressed as a percentage of the total number of items in the scale.

The Louisville Social Support Scale is a 13-item measure of social support which was constructed for use with the elderly.²¹ The total score is meant to be interpreted as an omnibus measure of social support since the items assess frequency of social involvement, the presence of a close confidant, and perceived availability of support. Scores can range from 13 to 60, with higher scores representing greater social support.

The interview consisted of queries pertaining to the number of medical problems experienced in the past year, educational level, and demographic information.

Results

There were 22 males and 23 females in the PD group, while the control group contained 10 males

and 14 females. The mean age of the PD subjects was 67.35 years old, with a range from 51 to 85 years. The average age of the controls was 65.42 years old, with a range from 52 to 78 years. Age and sex did not show significant correlations with BDI scores for the PD, control, or combined samples. Education was graded on a 7-point scale with a score of 1 representing 0 to 6 years of schooling, and 7 representing more than 16 years of education. The mean for the full sample was 3.57 which roughly translates into just short of high school completion. The PD mean of 3.22 differed significantly from the control mean of 4.21 ($t[67] = -2.63, P < .05$). However, the correlation of education to BDI scores was -0.04 in the PD group, -0.003 in the controls, and -0.12 for the full 69 subjects.

Results previously reported for these samples²² showed that although the PD subjects did not exhibit a significant difference from the controls on the measure of disability, they did experience significantly higher levels of depressive symptoms. It was also found that the number of medical problems experienced in the past year significantly predicted BDI scores in both groups, while disability scores were significantly correlated with BDI scores in the PD group.

Among the three coping scales (active-cognitive, active-behavioral, and avoidance), the controls reported employing more of each type of active coping than the PD subjects. Whereas controls endorsed an average of about 68% of the items representing various cognitive coping strategies, PD subjects reported using 55% of the cognitive methods ($t[67] = -2.11, P < .05$). Similarly, almost 66% of the behavioral coping methods surveyed were used by controls, compared with about 53% by PD patients ($t[67] = -2.13, P < .05$). Avoidance coping was slightly

higher among controls, averaging 44%, than the mean of 38% for the PD group, but this discrepancy was not reliable ($t[67] = -1.11$). Levels of social support appeared approximately equal in the two groups. The PD mean of 36.89 was not significantly different from the control mean of 36.54 ($t[67] = 0.25$).

For the full sample, both cognitive and behavioral coping showed significant inverse Pearson correlations of -0.37 and -0.26 , respectively, with BDI scores. Neither avoidance coping ($r = .16$) nor social support ($r = -.14$) were reliably related to BDI scores.

Table 1 reveals that, within the PD group, cognitive coping was significantly correlated with lower BDI total scores ($r = -.31$), less disability ($r = -.40$), and greater social support ($r = .34$). Active behavioral coping was negatively correlated with age ($r = -.31$), but not significantly associated with BDI scores ($r = -.12$). Avoidance coping showed a significant correlation with medical problems ($r = .38$) and almost correlated significantly with increased BDI scores ($r = .29, P < .06$). Social support did not correlate significantly with BDI scores ($r = -.11$).

Among the controls, a significant correlation emerged between the use of cognitive and behavioral coping strategies ($r = .42$). Behavioral coping exhibited significant negative correlations with BDI scores ($r = -.42$) and medical problems ($r = -.42$). Greater use of behavioral coping methods was also associated with greater social support ($r = .56$). In the control group, cognitive coping, avoidance coping, and social support showed nonsignificant correlations of $-0.16, 0.03$ and -0.31 , respectively, with BDI total scores.

An exploratory analysis of the individual coping items was carried out using the χ^2 statistic for frequen-

TABLE 1
Intercorrelations for the Parkinson's Disease Sample ($n = 45$)*†

	1	2	3	4	5	6	7	8	9
01 AGE									
02 SEX	11								
03 EDUCATION	-05	19							
04 MEDICAL PROBLEMS	-13	14	05						
05 DISABILITY	12	03	-06	26					
06 SOCIAL SUPPORT	08	-14	11	-07	-23				
07 COGNITIVE COPING	00	-07	27	-11	-40†	34†			
08 BEHAVIORAL COPING	-31†	-08	-17	08	-25	09	26		
09 AVOIDANCE COPING	-13	-07	03	38†	04	08	-19	-08	
10 BDI TOTAL	05	01	-04	47†	54†	-11	-31†	-12	29

*Decimal points omitted.

†Codes are: Sex male = 1, female = 2; BDI = Beck Depression Inventory Total Score.

‡ $P < .05$ if $r > .30$; $P < .01$ if $r > .38$.

TABLE 2
Intercorrelations for the Control Sample (n = 24)*†

	1	2	3	4	5	6	7	8	9
01 AGE									
02 SEX	23								
03 EDUCATION	10	00							
04 MEDICAL PROBLEMS	-11	21	-24						
05 DISABILITY	-14	16	26	11					
06 SOCIAL SUPPORT	06	-20	-34	-38	-39				
07 COGNITIVE COPING	-32	-22	-12	-17	-02	27			
08 BEHAVIORAL COPING	-09	-20	-02	-42‡	-02	56‡	42‡		
09 AVOIDANCE COPING	-27	19	-26	32	26	-19	27	-07	
10 BDI TOTAL SCORE	01	31	00	53‡	22	-31	-16	-42‡	03

*Decimal points omitted.

†Codes are: SEX male = 1, female = 2; BDI = Beck Depression Inventory Total Score.

‡ $P < .05$ if $r > .41$; $P < .01$ if $r > .52$.

cies and point-biserial correlations for associations with BDI scores. Although multiple comparisons inflate the probability of type 1 errors, results may provide some insight into coping methods. Thus, 71% of controls endorsed the behavioral strategies of finding out more about their diseases and talking with professionals, compared with 43% and 36% of PD subjects, respectively. Less than 50% of each group reported that they drew on past experiences to deal with their problems, yet this cognitive strategy was significantly associated with lower BDI scores in both groups. Education about one's disease and talking to friends but not professionals were associated with decreased depressive symptoms only among controls. The cognitive strategy, "tried to see the positive side," was related to lower BDI scores only in the PD group, although controls endorsed the item slightly more frequently. It is uncertain how subjects interpreted this item, as some mentioned that their illness actually had positive aspects (e.g., an aid to reassess and reorganize their lives) while others simply said they tried to stay happy or keep a positive attitude.

Discussion

Age, sex and education were not found to be significant predictors of depressive symptoms in the present study. With the exception of the reliable correlation between age and less behavioral coping, none of these variables was significantly correlated with the coping scales or with social support. The present results show that PD subjects differed from controls in their significantly lower use of various active (i.e., cognitive and behavioral) coping strategies. Although both types of active coping methods were inversely related to BDI scores, only cognitive coping was significant among the PD subjects, while

only behavioral coping was significant in the control group. Avoidance coping failed to show a significant negative correlation with BDI scores in the PD group.

Since the PD subjects exhibited higher BDI scores, it could be argued that greater affective distress leads to less coping efforts rather than vice versa. However, an analysis of the individual items revealed that some types of active coping were equally or even more frequently employed among PD patients than controls. Thus, a complete breakdown in all coping efforts was not apparent. The lower use of behavioral coping strategies by PD subjects cannot be attributed to inhibition arising from disability or other illnesses since the disability scores of the two groups were about equal and the control subjects exhibited a greater number of additional medical problems. Therefore, the reasons underlying the relative underutilization of behavioral coping methods by the PD patients and the mechanisms underlying the success of cognitive strategies remain worthy of further investigation.

An important variable which may affect coping is cognitive functioning. The possibility that PD subjects in this study were more cognitively impaired and less able to effectively cope cannot be ruled out since no measure of cognitive functioning was given. However, several factors suggest that this may not have been the case. First, the Sandoz Canada protocol demanded that PD subjects be free from severe confusion, psychoses, or serious mental disturbances, suggesting that the PD patients studied here were unlikely to be cognitively impaired. The Sandoz Canada protocol also required that PD subjects had not been previously treated with any antiparkinson medication other than anticholinergics. As a result, the average length of illness was

about 3.5 years and progression of the disease was mild to moderate as indicated by a mean of 2.25 on the Hoehn and Yahr scale²³ for the PD subjects in this study. Also, most of the individual coping items showed no significant difference in frequency utilization between the two groups. The PD group actually employed several strategies more frequently. As examples, "exercising more" and "keeping my feelings to myself" were endorsed by 59% and 79%, respectively, of PD subjects vs. 37% and 58% of controls. Several other methods were utilized by over 80% of PD patients. Thus, the breakdown one might expect from impaired cognitive functioning did not appear in the PD group. Finally, Dakof and Mendelsohn¹⁹ noted that the cognitive deficits seen in many PD patients may have a biological origin, yet the nature and progression may be influenced by affective and psychosocial factors.

Social support was significantly correlated only with the coping strategies associated with lower BDI scores for each group. That is, social support was correlated with cognitive coping in the PD group and with behavioral coping among the controls. In this study an omnibus measure of social support was employed. The mean scores found for the social support measure were slightly higher than those reported for a very large elderly community sample.²⁴ Typically, social support measures account for a small but significant portion of the variance in depressive symptom scores.¹³ The failure to observe such a relationship in the present study may be related to the relatively small sample size or the measure itself which attempted to assess simultaneously varying components of social support.

The depressive symptoms seen in PD have, in general, been attributed to the altered neurotransmitter functioning seen in the disorder.^{1,4,5} However, other biological and psychosocial variables are related to depressive symptoms. If the pathophysiology of PD includes the potential for dysregulation of affect, then it may be possible that PD predisposes individuals to affective alterations. The emergence of significant depressive symptomatology may then be related to psychosocial variables which have been demonstrated to be associated with affective disorders. Perhaps the operation of these psychosocial variables may still be insufficient to prevent depressive symptoms from emerging if the neurotransmitter dysfunctions are of an overwhelming magnitude.

In this regard, it is interesting to note that cognitive and behavioral treatments are as effective as pharmacotherapy for ameliorating affective disorders of mild to moderate severity.²⁵ The studies re-

viewed earlier found that mild to moderately severe levels of depressive symptoms were most commonly exhibited by PD patients.^{4,5,18} In the future, it would be worthwhile to explore the utility of employing cognitive-behavioral techniques in PD subjects who exhibit depressive symptoms.

This study has elucidated some hitherto unreported concomitants of depressive symptoms in PD. In particular, active cognitive coping strategies appear to predict lower depressive symptom scores while avoidance methods appear associated with greater dysphoria. Interestingly, cognitive and avoidance coping showed significant negative and positive associations, respectively, with both disability and recent medical problems—variables previously shown to be associated with greater depressive symptoms in PD patients. Although tentative, it is possible that interventions aimed at increasing active coping methods and decreasing avoidance methods may reduce the risk of PD patients developing depressive symptoms. This might occur not only by directly enhancing the individual or buffering against the stress of a chronic illness, but also by attenuating the severity of other risk factors. Finally, more effort should be directed to the study of PD patients who successfully adapt to PD. The delineation of characteristics typical of mentally healthy persons with PD may provide a model for working with these patients, which can complement discoveries arising from a pathology-oriented research perspective.

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