Original Article

Depressive States and Health Problems in Caregivers of the Disabled Elderly at Home

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Abstract

This study investigated the prevalence of depression and health problems in caregivers for the disabled elderly at home, and identified factors associated with the risk of depression. Four hundred thirty-four caregivers for disabled elderly persons in a suburban city were surveyed by in-home interviews. Two hundred ten non-caregivers were also interviewed as an age and gender-matched control group. Overall, 16.8% of caregivers met the DSM-III-R criteria for major depression and 10.6% met the criteria for depressive disorders not otherwise specified, for a total of 27.4% meeting the criteria for affective disorders, while 8.6% of controls met the criteria for depressive disorders not otherwise specified. The prevalence of major depression in caregivers was associated with mental problems and ADL limitations of the elderly. Moreover, non-cooperation by other family members or relatives contributed to an increase in the prevalence of depression. Caregivers who met the criteria for major depression had a higher frequency and longer duration of upper respiratory infections than other caregivers or controls, and showed greater fatigue than the other caregivers or controls. Approximately 90% of caregivers who met the criteria for major depression had also insomnia. Overall, it was shown that caregivers who met the criteria for major depression had not only emotional distress but also higher morbidity.

Key words: Caregiver, Disabled elderly persons, Home care, Depression

Introduction

Providing care for the disabled elderly can seriously affect the caregivers by inducing continuous chronic stress¹⁾. Providing care produces varying levels of physical strain on caregivers because of this chronic stress²⁾. Snyder and Keefe³⁾ noted that approximately 70% of the caregivers in the U.S. showed a decline in physical health due to their work. Stone et al.⁴⁾ found that caregivers in the U.S. considered their health poorer than that of age-matched peers. We found that 75% of caregivers had health complaints⁵⁾.

Being under emotional strain, caregivers for dementia patients have a higher prevalence of depression^{6,7)}. Various studies reported that 40%-83% of caregivers for dementia patients met the criteria for depressive disorders⁸⁻¹⁰⁾. However, few studies on the prevalence of depression in caregivers for the disabled

elderly have been done using population data in Japan. In this paper, the health of caregivers for the disabled elderly at home was surveyed in a suburban city in Japan to investigate the prevalence of depression and health problems, including susceptibility to upper respiratory infection as an index of poor health in caregivers, and to identify factors associated with the risk of depression.

Subjects and Methods

Data were obtained in 1992 from a population health survey of the elderly living in city K, a residential community in the suburbs of Osaka, Japan. This survey was conducted by the city office to plan health and welfare services for the elderly in city K. Both caregivers and controls consented to cooperate in the survey. At the time of the study, city K had a population of 112,577; those aged 65 and over comprised 11,408.

All elderly persons living at home in city K received a home health check by trained nursing students to determine whether there were problems in activities of daily living (ADL) such as dressing or bathing, or in instrumental activities of daily living (IADL) such as shopping, housecleaning or transportation. The

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disabled elderly were defined as those having ADL and IADL limitations and thus requiring assistance. This procedure produced a sample of 540 cases which met our criteria. Four hundred thirty-four caregivers were interviewed between July and October 1992. As for the remaining 106 persons, 25 were institutionalized, 9 died, 3 moved, 52 declined to be interviewed, and 17 could not be contacted.

Two hundred ten subjects were recruited as a control group from non-caregivers who did not work outside of the home. The caregivers and controls were matched for age and gender.

ADL functions included personal care hygiene tasks (help with eating, bathing, dressing, and using the toilet) and other personal care (help getting in and out of bed, walking around inside the house). IADL functions were defined based on whether the caregiver spent extra time for each activity. Household tasks included meal preparation, housecleaning and doing laundry. Other IADL tasks were shopping, transportation and handling the finances of the elderly. For each respondent, ADL and IADL limitations were summed up. Data on paralysis, urinary incontinence, mental status, number of family members and use of a home helper were also obtained.

Caregivers were asked to evaluate depressive states and to indicate the frequency and duration of upper respiratory infections and fatigue. As seen in Appendix 1, clinical interviews for DSM-III-R were used to assess depressive states. The incidence of upper respiratory infections was determined as the frequency with which the caregiver caught colds. The frequency of upper respiratory infections in the last 12 months was categorized as (1) rare or occasionally (zero to 5 times) or (2) frequent (6 or more times). Duration was (1) approximately one week, (2) two to three weeks or (3) one month or longer.

The Fatigue Symptom Index was used for fatigue assessment. The index assesses general fatigue (11 items) and cumulative fatigue (6 items) as shown in Appendix 2. The items were modified from the previous work by Kosugoh¹¹. Each score in the Fatigue Symptom Index categories was computed as the percentage of items that caregivers checked. Cronbach's alpha reliability coefficients for these were 0.78 for general fatigue and 0.78

for cumulative fatigue.

Chi-square analysis was used to assess differences among groups (caregivers without depression, caregivers with major depression, caregivers with a depressive disorder not otherwise specified, or controls). Analysis of variance (ANOVAs) included four groups (caregivers without depression, caregivers with major depression, caregivers with a depressive disorder not otherwise specified, or controls) to evaluate the association between depressive states and fatigue. The data were analyzed using the SPSSX statistical package.

Results

The average caregiver's age was 59.46 (SD=12.34) years. The characteristics of the caregivers varied with the gender of the elderly. The caregivers for old women were usually daughters-in-law or daughters. Of these, 68.2% were 20 to 59 years old. The caregivers for old men were mostly elderly wives. Of these, 62.2% were 60 years old or more.

Caregivers had been engaged in this work for an average of 5.18 (SD=2.05) years. Of 434 caregivers, 22.4% had fewer than two family members, 34.3% had a family of three or four, 33.6% had a family of five or six, 8.3% had a family of seven or more, and in 1.4%, the family size was unknown. Of the 210 controls, 22.9% had fewer than two family members, 50.5% had a family of three or four, 23.3% had a family of five or six, 1.9% had a family of seven or more, and in 1.4%, the family size was unknown. Families of caregivers were significantly larger than the families of controls ($P<0.001$).

There were significantly higher rates of syndromal depressive disorders in caregivers than in controls ($P<0.001$). Overall, 16.8% of caregivers met the DSM-III-R criteria for major depression and 10.6% met the criteria for depressive disorders not otherwise specified, for a total of 27.4% who met the criteria for affective disorders. Among controls, 8.6% met the criteria for depressive disorders not otherwise specified.

As shown in Table 1, there were significant differences in all depressive episodes among caregivers without depression (group

Table 1 Distribution of various depressive episodes in caregivers without depression, caregivers with major depression, caregivers with depressive disorders not otherwise specified and controls.

	Caregivers			Controls
	Without depression (N=315)	Major depression (N=73)	Depressive disorders not otherwise specified (N=46)	(N=210)
		N	(%)	
Loss of interest or pleasure in usual activities	16 (5.1)	57 (78.1)	17 (37.0)	17 (8.1)***
Poor appetite or significant weight loss	32 (10.2)	45 (61.6)	21 (45.7)	24 (11.4)***
Loss of energy	25 (7.9)	57 (78.1)	18 (39.1)	40 (18.8)***
Insomnia	80 (25.4)	66 (90.4)	28 (60.9)	54 (25.7)***
Feelings of worthlessness	1 (0.3)	34 (46.6)	1 (2.2)	17 (8.0)***
Complaints or evidence of diminished ability to think or concentrate	20 (6.3)	44 (60.3)	16 (34.8)	35 (16.7)***
Recurrent thoughts of death	13 (4.1)	45 (61.6)	10 (21.7)	16 (7.5)***
Fatigue symptoms index		Mean $\pm$ Standard Deviation (SD)		
General fatigue	20.8 $\pm$ 19.4	58.2 $\pm$ 20.1	39.9 $\pm$ 20.8	25.3 $\pm$ 19.5***
Cumulative fatigue	16.2 $\pm$ 22.1	61.6 $\pm$ 26.7	51.5 $\pm$ 31.8	4.8 $\pm$ 10.0***

*** $P<0.001$, Significant differences among caregivers without depression, caregivers with major depression, caregivers with depressive disorders not otherwise specified and controls.

A), those with major depression (group B), those with depressive disorders not otherwise specified (group C), and controls. There were considerably higher rates of poor appetite or significant weight loss, and insomnia in caregivers in group B and group C than in controls. Caregivers in group B had a significantly higher score for general fatigue and cumulative fatigue on the Fatigue Symptom Index than those in other groups or controls.

As shown in Table 2, there was a significant difference in the frequency of upper respiratory infections among caregivers in group A, those in group B, those in group C, and controls ($P<0.001$): 18.1% of group B frequently had upper respiratory infections, while the rates in group A, group C and controls were 4.2%, 6.5% and 1.9%, respectively. Moreover, there was a significant difference in the duration of upper respiratory infections among caregivers in group A, those in group B, those in group C,

and controls ($P<0.001$): 17.1% of group B had upper respiratory infections for one month or more, while the rates in group A, group C, and controls were 2.9%, 2.2% and 1.4%, respectively.

Table 3 shows the characteristics of elderly persons receiving care from caregivers in groups, A, B and C. There was no significant difference in gender, paralysis, and urinary incontinence of the elderly among groups, A, B and C. However, there were significantly higher rates of mental problems and difficulty with at least five ADLs among the elderly in groups B and C than there were in group A.

Table 4 shows the age of caregivers, period of providing care, number of family members, use of a home helper and cooperation from other family members or relatives for groups, A, B and C. There were no significant differences in the ages of the caregivers, period of providing care, number of family members,

Table 2 Frequency and duration of upper respiratory infections in caregivers without depression, caregivers with major depression, caregivers with depressive disorders not otherwise specified and controls.

	Caregivers			Controls	
	Without depression	Major depression	Depressive disorders not otherwise specified		
	N (%)	N (%)	N (%)	N (%)	
Frequency of upper respiratory infections					
Rare or occasionally	273 (95.8)	59 (81.9)	43 (93.5)	206 (98.1)***	
Frequent	12 (4.2)	13 (18.1)	3 (6.5)	4 (1.9)	
Duration of upper respiratory infections					
Approximately one week	259 (92.5)	46 (65.8)	40 (87.0)	193 (92.4)***	
2-3 weeks	13 (4.6)	12 (17.1)	5 (10.9)	13 (6.2)	
One month or more	8 (2.9)	12 (17.1)	1 (2.1)	3 (1.4)	

Excluding persons with unknown frequency and duration of upper respiratory infections.

*** $P<0.001$, Significant differences among caregivers without depression, caregivers with major depression, caregivers with depressive disorders not otherwise specified and controls.

Table 3 Gender, paralysis, urinary incontinence, mental status and ADL score in the elderly of caregivers without depression, caregivers with major depression and caregivers with depressive disorders not otherwise specified.

	Caregivers				
	Without depression	Major depression	Depressive disorders not otherwise specified		
	N (%)	N (%)	N (%)	N (%)	
Sex					
Female	219 (69.5)	44 (60.3)	23 (50.0)		
Male	96 (30.5)	29 (39.7)	23 (50.0)		
Paralysis					
Paralyzed	105 (34.7)	33 (46.5)	15 (34.1)		
Not-paralyzed	198 (65.3)	38 (53.5)	29 (65.9)		
Urinary incontinence					
Continual	42 (13.7)	13 (18.3)	11 (25.0)		
Occasional	60 (19.5)	18 (25.4)	11 (25.0)		
Not at all	205 (66.8)	40 (56.3)	22 (50.0)		
Mental status					
At least one problem	156 (49.5)	46 (63.0)	31 (67.4)*		
No problem	159 (50.5)	27 (37.0)	15 (32.6)		
ADL score					
IADLs only or 1-2 ADLs	198 (62.9)	40 (54.8)	22 (47.8)***		
3-4 ADLs	70 (22.2)	13 (17.8)	6 (13.1)		
5-6 ADLs	47 (14.9)	20 (27.4)	18 (39.1)		

Excluding persons for whom information regarding paralysis and urinary incontinence are unknown.

* $P<0.05$ *** $P<0.001$, Significant differences among caregivers without depression, caregivers with major depression and caregivers with depressive disorders not otherwise specified.

Table 4 Age of caregiver, period of providing care, number of family members, use of home helper and cooperation received by caregivers without depression, caregivers with major depression and caregivers with depressive disorders not otherwise specified.

	Caregivers					
	Without depression		Major depression		Depressive disorders not otherwise specified	
	N	(%)	N	(%)	N	(%)
Age of caregiver						
<60	187	(59.4)	41	(56.2)	23	(50.0)
60 and over	128	(40.6)	32	(43.8)	23	(50.0)
Period of providing care						
<5 years	172	(54.6)	37	(50.7)	26	(56.5)
5 years and over	143	(45.4)	36	(49.3)	20	(43.5)
Number of family members						
<3	69	(21.9)	17	(23.3)	11	(23.9)
3-4	112	(35.6)	24	(32.9)	13	(28.3)
5-6	104	(33.0)	26	(35.6)	16	(34.8)
7 and over	30	(9.5)	6	(8.2)	6	(13.0)
Home helper						
Used	18	(5.8)	8	(11.0)	6	(13.0)
Not used	292	(94.2)	65	(89.0)	40	(87.0)
Cooperation from other family members or relatives						
Cooperative	303	(96.2)	58	(79.5)	45	(97.8)***
Non-cooperative	12	(3.8)	15	(20.5)	1	(2.2)

Excluding cases where information regarding the use of a home helper was unknown.

*** $P < 0.001$, Significant differences among caregivers without depression, caregivers with major depression and caregivers with depressive disorders not otherwise specified.

or use of a home helper among groups, A, B and C. However, 20.5% of those in group B reported having no other family member or relative who cooperated in caregiving, compared with 3.8% in group A and 2.2% in group C. Caregivers who had no other family member or relative cooperating in providing care had a significantly higher risk of major depression than caregivers who received cooperation ($P < 0.001$).

Discussion

Kiecolt-Glaser et al.¹²⁾ reported that 32% of caregivers for dementia patients met the DSM-III-R criteria for clinical depressive disorders while only 6% of matched controls met these criteria. In our survey, 27.4% of caregivers for the disabled elderly at home met the DSM-III-R criteria for depressive disorders while 8.6% of controls fell into this category. Despite the discrepancy among elderly subjects, these rates were similar to those reported by Kiecolt-Glaser et al.

Several studies^{13, 14)} have indicated that caregivers of mildly impaired patients show fewer depressive symptoms than caregivers of moderately or severely impaired patients. In this study, the prevalence of depression was associated with mental problems and ADL limitations of the elderly. These results indicated that providing care for not only dementia patients but also seriously disabled elderly persons has a profound effect on the mental health of caregivers. Moreover, caregivers who received no cooperation from other family members or relatives in providing care had a higher risk of major depression than those who received cooperation. Kiecolt-Glaser et al.¹²⁾ reported that caregivers with less human support suffered from depressive disorders and immunological decline. Community health and welfare services for the elderly involving day care services and other services are

currently being planned in Japan. We hope that the environment for caregivers will be improved in the future.

Caregivers who met the criteria for major depression had a higher frequency and longer duration of upper respiratory infections than other caregivers or controls, and experienced greater fatigue. Judd et al. reported that the prevalence of symptoms of major depression in the general population is 79.4% for insomnia, 64.1% for feeling tired all the time and 68.2% for frequently thinking about death¹⁵⁾. In our survey, approximately 90% of caregivers with major depression suffered from insomnia. The rate for recurrent thoughts of death was similar to that reported by Judd et al. It was shown that caregivers who met the criteria for major depression had not only emotional distress but also higher morbidity.

It is reported that environmental stress may be associated with negative immunological changes¹⁶⁻¹⁸⁾. Individuals with persistently low natural killer cell activity show a significantly higher frequency of viral illnesses, longer duration of illness, greater fatigue and higher frequency of depressive disorders, and such individuals develop symptoms suggestive of chronic fatigue syndrome¹⁶⁾. In this study, we did not perform immunological studies. However, there is a likelihood that caregivers with major depression who had a higher frequency of upper respiratory infections, longer duration of illness and greater fatigue would show negative immunological changes. Caregivers who evidence depressive disorders should be given priority for public services and health care.

Data on the interval until the onset of depressive disorders in caregivers and information regarding the content of the care given are lacking in this study. These factors are important for comprehending the emotional and physical strain on caregivers^{1, 2)} and thus should be investigated in the future.

Appendix 1 Items of Clinical Interview for DSM-III-R (original Japanese version)

Major Depression

At least five of the following symptoms {(1)~(8)} have each been present nearly every day for a period of at least two weeks

- (1) depressed
 - ① I feel blue.
(ゆううつな気分がする)
 - ② I often want to be alone.
(1人きりでいたいと思うことがある)
 - ③ I feel that I am a bother to my friends.
(友人とのつきあいがおっくうである)
- (2) loss of interest or pleasure in usual activities
 - ④ I am no longer interested in my favorite activities.
(自分の好きなことでもやる気がしない)
 - ⑤ I do not enjoy doing anything.
(なにをやっても楽しくない)
- (3) poor appetite or significant weight loss
 - ⑥ Recently, I have had a poor appetite.
(このところ、食欲がない)
 - ⑦ Recently, I have become thin.
(このところ、やせてきた)
- (4) loss of energy
 - ⑧ I feel it is troublesome to move.
(動くのがおっくうである)
 - ⑨ I don't have the energy to do anything.
(何ごともめんどうくさい)
 - ⑩ I tire easily.
(すぐ気力がなくなる)
 - ⑪ I am somehow spiritless.
(何となく気力がない)
- (5) insomnia or hypersomnia
 - ⑫ I often can not sleep at night.
(夜、眠れないことが多い)
 - ⑬ Recently, I have been wakeful.
(このところ、寝付きが悪い)
 - ⑭ Recently, I have been very sleepy every day.
(このところ、毎日眠くてしょうがない)
- (6) feeling of worthlessness
 - ⑮ I dislike myself very much.
(自分がいやでしょうがない)
- (7) complaints or evidence of diminished ability to think or concentrate
 - ⑯ I quickly lose patience.
(根気がつづかない)
 - ⑰ I can not become interested in reading or writing.
(ものを読んだり、書いたりする気になれない)
 - ⑱ I have no desire to think things through and easily become disgusted.
(考えごとがおっくうでいやになる)
- (8) recurrent thoughts of death
 - ⑲ I am not happy to be alive.
(生きていても仕方がないと思う)

Depressive disorder not otherwise specified

Disorders with depressive features that do not meet the criteria for any specific Mood Disorder or Adjustment Disorder with Depressed Mood.

Appendix 2 Items of Fatigue Symptom Index (original Japanese version)

General fatigue

1. My movements are not smooth and I often drop things.
(動作がぎこちなく、よく物を落としたりする。)
2. Sometimes, I feel I don't have enough energy.
(全身の力が抜けたようになるときがある。)
3. I often feel dizzy.
(しばしばめまいがする。)
4. I have recently felt weary all over my body.
(この頃、全身がだるい。)
5. I have lumbago.
(腰が痛い。)
6. I have pain in my joints.
(体のふしぶしが痛い。)
7. My eyesight is sometimes dim.
(目がかすむときがある。)
8. I have eye strain.
(目が疲れる。)
9. I often have a stiff neck.
(よく肩がこる。)
10. I can not sleep well and frequently dream.
(眠りが浅く、夢ばかりみる。)
11. Recently, movements have become slow and labored.
(この頃、足がだるい。)

Cumulative fatigue

1. I often feel fatigue when I get up in the morning.
(朝起きた時でも、疲れを感じるが多い。)
2. I don't have time to pull myself together.
(くつろぐ時間がない。)
3. I can't recover from my fatigue.
(疲れがとれない。)
4. I feel I have to work too hard to take care of my family.
(家族の世話で追いまわされているような気がする。)
5. I often want to lie down due to fatigue.
(横になりたいくらい疲れることが多い。)
6. I am dead tired due to providing daily care.
(毎日の介護でくたくたに疲れる。)

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(Received Apr. 6, 1995/Accepted Dec. 3, 1996)