

Caregiver Characteristics Affecting the Clinical Manifestations of Patients With Alzheimer’s Dementia



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Caregiver education and burden are modifiable factors significantly associated with multiple clinical manifestations in patients with AD dementia. This further highlights the critical importance of enhancing caregiver selection, training, and education to improve symptoms and quality of life in these patients

INTRODUCTION

In 2015, the total socioeconomic cost of AD in China reached US \$167.74 billion and continues to rise. Of this total, social and informal care accounted for an average of 85.9%, and by 2024, unpaid caregivers provided 19.2 billion hours of care valued at US \$413.5 billion. These figures underscore the pivotal role of caregivers in the AD continuum. However, current studies remains scarce, largely confined to the impact of AD symptoms on caregiver burden and its link to neuropsychiatric symptoms (NPS). This study aimed to examine the association between caregiver characteristics and the full spectrum of clinical manifestations in patients with AD dementia.

METHODS

Cross- sectional study (CIBL study)
167 patients with AD dementia
167 matched caregivers
Patients:
MMSE, MoCA, NPI, ADL score
Mini- Nutritional Assessment (MNA)
Dietary Diversity Score (DDS)
Caregivers:
Sex, age, educational years, the relationship with patients
Caregiver Burden Inventory (CBI)

RESULTS

Table 1 Comparison of clinical profiles of patients with AD dementia stratified by caregiver sex				
Variables	Female caregiver (n=108)	Male caregiver (n=59)	$\chi^2/U/Z$	P value
Age (years, $\bar{x} \pm s$)	68.46±7.40	68.36±7.78	0.088	0.930
Sex [male/female, n (%)]	43.00 (39.81) /65.00 (60.19)	37.00 (62.71) /22.00 (37.29)	8.016	0.005
BMI (kg/m², $\bar{x} \pm s$)	24.80±3.33	23.35±3.70	2.551	0.012
WHR ($\bar{x} \pm s$)	0.93±0.07	0.91±0.08	0.916	0.361
Education [years, $M(Q_1, Q_3)$]	9 (6, 12)	9 (8, 12)	−0.156	0.876
Chronic disease [n, $M(Q_1, Q_3)$]	2.00 (1.00, 3.00)	2.00 (0, 3.00)	−0.033	0.974
Disease course [years, $M(Q_1, Q_3)$]	3.00 (1.25, 5.50)	3.00 (1.20, 4.50)	−1.076	0.282
MMSE [scores, $M(Q_1, Q_3)$]	16.00 (10.25, 23.00)	16.00 (10.00, 23.00)	−0.039	0.969
MoCA [scores, $M(Q_1, Q_3)$]	12.00 (7.00, 16.00)	11.00 (5.75, 17.00)	−0.555	0.597
NPI [scores, $M(Q_1, Q_3)$]	6.00 (1.00, 12.75)	7.00 (1.00, 16.00)	−0.205	0.838
ADL [scores, $M(Q_1, Q_3)$]	20.00 (15.00, 28.75)	21.50 (15.75, 27.25)	−0.018	0.985
MNA [scores, $M(Q_1, Q_3)$]	24.00 (21.00, 26.00)	22.00 (20.00, 24.50)	−2.259	0.024
DDS [scores, $M(Q_1, Q_3)$]	7.00 (6.00, 9.00)	7.00 (6.00, 9.00)	−0.682	0.495
CBI [scores, $M(Q_1, Q_3)$]	9.00 (2.25, 18.00)	8.00 (1.00, 19.00)	−0.577	0.564

Table 2 Multiple linear regression of caregiver characteristics and clinical manifestations in AD dementia patients								
Variables	β (95%CI)	SE	t	P value	β (95%CI)	SE	t	P value
MMSE scores					ADL scores			
Caregiver sex (male)	-0.907 (-3.070~1.256)	1.095	-0.828	0.409	1.165 (-1.384~3.714)	1.290	0.903	0.368
Caregiver education (years)	0.310 (0.021~0.598)	0.146	2.118	0.036	-0.519 (-0.860~-0.179)	0.172	-3.017	0.003
CBI score	-0.225 (-0.297~-0.154)	0.036	-6.235	<0.001	0.361 (0.277~0.445)	0.043	8.492	<0.001
NPI scores					MNA scores			
Caregiver sex (male)	-2.362 (-6.724~2.001)	2.209	-1.069	0.287	0.667 (-0.354~1.688)	0.517	1.290	0.199
Caregiver education (years)	-0.628 (-1.208~-0.047)	0.294	-2.137	0.034	0.204 (0.067~0.340)	0.069	2.953	0.004
CBI score	0.575 (0.431~0.718)	0.073	7.905	<0.001	-0.082 (-0.116~-0.049)	0.017	-4.830	<0.001

CONCLUSIONS

A low educational level of caregivers and a heavy caregiver burden are associated with decreased cognitive function, worsening NPS, reduced ADL, and declining nutritional status in patients with AD dementia.

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