

, \*, ,

## Comprehensive Geriatric Assessment for Community Living Elderly in a Rural Area

Jung-Ae Rhee, Hee-Young Shin\*, Eun-Kyung Chung, Jun-Ho Shin  
*Department of Preventive Medicine, Chonnam National University Medical School  
and The Research Institute of Medical Science, Chonnam National University*

### = ABSTRACT =

The aim of this study was to analyse and conduct the comprehensive geriatric assessment for the elderly in rural area. The subjects were 388 older people aged 65 years or older living in the community. Data for comprehensive assessment such as physical, mental, functional, social and environmental conditions were collected from January to February, 2001 through a person-to-person interview.

Of the total 388 elders, 169(43.6%) were men and 219(56.4%) were women. Mean ages of men and women were  $73.5 \pm 6.4$  and  $74.0 \pm 6.2$  years respectively. Three common diseases of the elderly were arthralgia(51.6%), chronic back pain(33.2%) and hypertension(18.6%), and higher in women than in men. Impairment rate of vision, hearing and bowel or bladder control was 59.0%, 20.1%, and 28.4% respectively. But that of lower extremities 3.4%. In terms of cognitive function, short term memory loss was found in 33.7% of males and 44.7% of females. The percentage of fully independent in the six ADL items was 72.2% in men and 58.9% in women. In the social supportive system, 49.5% of the elderly were living with spouse, and 22.9% living alone, 26.3% having care giver.

These results will provide basic data for the development of community-based health program, which gives appropriate health service for the elderly living in the community.

KEY WORDS: Elderly, Comprehensive geriatric assessment, Rural area

---

\* : 062-220-4170, E-mail: shy101@lycos.co.kr  
2000

(This study was financially supported by Chonnam National University in the program, 2000).

가 .  
 ( ), ( ),  
 65 2000 ( , ), (가 ),  
 7.2% 2019 14.4% ,  
 ( , 2001). ,  
 (Aging Society) 65 .  
 7% 14% 가 ‘  
 (Aged Society) , 가(comprehensive geriatric assessment; CGA)가  
 가 20  
 가  
 . (Ross , 1998; ,  
 1998).  
 가  
 가  
 , 가  
 가  
 . ADL(activities of  
 daily living) IADL(instrumental activities of daily  
 living) 가  
 가  
 .  
 ,  
 가  
 가  
 . 1.  
 가  
 가  
 .  
 1970  
 가  
 가  
 가 (stratified cluster  
 sampling) 1 , 10  
 가 65 595  
 가  
 85 50% 388 65.2% .

2.

가 .

10

2001 1 2 6 3가 ( , , ) , 1

가 , (Korean version of geriatric depression scale, short form) 12 ( , 1995).

(ADL), (IADL) ADL IADL Katz ADL Lawton IADL (Katz , 1963; Lawton Brody, 1969). ADL

6

Lawton IADL ,가

( ) , 9

( ) . 4

가

( 가 , 가 ) 가 ( “ ?” , “ 가 ” ?” , “ 가 ?”)

가 가 “ 가 ”

가 “ ( ) 3m 가 가 1. (“ 가 65 388 ?”) (“ 가 169 43.6% 219

24 가

56.4% , 73.5 ± 6.4 , 100 가 31.4%, 22.8% .

74.0 ± 8.5 , 65-69

가 40.2%, 34.7% 가 70-74 , 2. , ,

75-79 .

88.2% ,

50.9%, 가 40.2% 16 가 .

(Table 1). 가 10.8%

, 2 가 가 51.3%, 3

69.2%, 52.1% 가 , 가 가 18.8% .

11.8%, 23.3% . 가 41.4%,

가 50 가 64.8% 가

63.4%, 73.0% 가 50 19.5%, 43.8%

Table 1. General characteristics of the study subjects

Unit: No.(%)

	Male	Female	Total
Age(years)			
65-69	68(40.2)	76(34.7)	144(37.1)
70-74	43(25.4)	57(26.0)	100(25.8)
75-79	30(17.8)	44(20.1)	74(19.1)
80-84	14( 8.3)	29(13.2)	43(11.1)
85-	14( 8.3)	13( 5.9)	27( 7.0)
Education(years)			
0	86(50.9)	193(88.2)	279(71.9)
1-6	68(40.2)	22(10.0)	90(23.2)
7-	15( 8.9)	4( 1.8)	19( 5.0)
Religion			
Christian	13( 7.7)	42(19.2)	55(14.2)
Catholic	1( 0.6)	4( 1.8)	5( 1.3)
Buddhism	20(11.8)	51(23.3)	71(18.3)
Others	10( 5.9)	5( 2.3)	15( 3.9)
None	117(69.2)	114(52.1)	231(59.5)
Unknown	8( 4.7)	3( 1.4)	11( 2.8)
Household income(won/month)			
0-500,000	107(63.4)	160(73.0)	267(68.8)
500,000-1,000,000	53(31.4)	50(22.8)	103(26.5)
1,000,000-	9( 5.3)	9( 4.2)	18( 4.6)
Total	169(100.0)	219(100.0)	388(100.0)

13.0% 가 46.2%  
 233% 가 20.8%  
 가 , , ,  
 가 (Table 2), 13.9%, 13.1%,  
 19% (Table 3).  
 가 65.6% 가 ,

Table 2. Distribution of present illness in the elderly\*

Present illness	Unit: No.(%)		
	Male	Female	Total
Dementia	5( 3.0)	8( 3.7)	13( 3.4)
Stroke	3( 1.8)	2( 0.9)	5( 1.3)
Hypertension**	21(12.4)	51(23.3)	72(18.6)
Arthralgia**	70(41.4)	142(64.8)	212(54.6)
Chronic backache**	33(19.5)	96(43.8)	129(33.2)
Cataract	5( 3.0)	7( 3.2)	12( 3.1)
Diabetes mellitus	7( 4.1)	18(8.2)	25( 6.4)
Tuberculosis	3( 1.8)	-	3( 0.8)
Mental disorder	3( 1.8)	1( 0.5)	4( 1.0)
Infectious disease	-	1( 0.5)	1( 0.3)
Digestive disease	22(13.0)	30(13.7)	52(13.4)
Respiratory disease	17(10.1)	18(8.2)	35( 9.0)
Urogenital disease	4( 2.4)	1( 0.5)	5( 1.3)
Skin disease	3( 1.8)	-	3( 0.8)
Injury & intoxication	2( 1.2)	3( 1.4)	5( 1.3)
Hematologic disease	1( 0.6)	1( 0.5)	2( 0.5)
Cancer	2( 1.2)	-	2( 0.5)
Others	21(12.4)	33(15.1)	54(13.9)

\* Overlapped response was permitted.

\*\*  $p < 0.01$  by Chi-square test.

Table 3. Distribution of medical utilization in the elderly\*

Medical facility	Unit: No.(%)		
	Male	Female	Total
Sub-health center (Primary health care post)	74(48.1)	95(44.8)	169(46.2)
Public health center	31(20.1)	45(21.2)	76(20.8)
Private clinic & hospital	91(59.1)	149(70.3)	240(65.6)
Pharmacy	18(11.7)	30(14.2)	48(13.1)
Oriental medicine clinic	18(11.7)	33(15.6)	51(13.9)
Dental clinic	5( 3.2)	4( 1.9)	9( 2.5)
Folk remedy	5( 3.2)	2( 0.9)	7( 1.9)

\* Overlapped response was permitted.

50.9%, 65.3% , 3. ADL IADL 가 가  
 22.5%, 22.3% 95.1% 가 , 가 가  
 가 34.3%, 39.3% 71.6% 가 . 가 가  
 79.3% 65.8% . ADL  
 (Table 4). 6 72.2%,  
 가 5.9%, 4.1%, 58.9% , 6  
 가 1.2%, 1.4% . 30%, 0.5% (Table 5).  
 4.1%, 2.7% 가 . IADL 가 가 가  
 가 18.9% 7.3% ,  
 34.2% 20.7% . 가 가 가 31.1%  
 가 16.6% .  
 33.7% 4. , 가  
 (12 )가 19.1%, 가  
 24.9% . 가 가

Table 4. Distribution of impaired physical and mental conditions in the elderly

Unit: No.(%)

Conditions	Male	Female	Total
Vision*	86(50.9)	143(65.3)	229(59.0)
Hearing	38(22.5)	40(18.3)	78(20.1)
Oral intake	58(34.3)	86(39.3)	144(37.1)
Extremities			
Upper extremities			
Proximal	10( 5.9)	9( 4.1)	19( 4.9)
Distal	2( 1.2)	3( 1.4)	5( 1.3)
Lower extremities	7( 4.1)	6( 2.7)	13( 3.4)
Bowel/bladder status*	35(20.7)	75(34.2)	110(28.4)
Cognitive status			
Short term memory**	57(33.7)	98(44.7)	155(39.9)
Depression			
12	31(19.1)	51(24.9)	82(22.3)

\* p < 0.01.

\*\* p < 0.05 by Chi-square test.

Table 5. Distribution of independent activities of daily living(ADL) and instrumental activities of daily living(IADL) in the elderly

Unit: No.(%)

Item	Male	Female	Total
<b>ADL</b>			
Bathing	149(88.2)	197(90.0)	346(89.2)
Dressing	154(91.1)	208(95.0)	362(93.3)
Toileting	155(91.7)	207(94.5)	362(93.3)
Transfer	153(90.5)	206(94.1)	359(92.5)
Continnence*	134(79.3)	144(65.8)	278(71.6)
Feeding	157(92.9)	212(96.8)	369(95.1)
<b>Frequency of independent ADL</b>			
6	122(72.2)	129(58.9)	251(64.7)
5	28(16.6)	73(33.3)	101(26.0)
4	5( 3.0)	4( 1.8)	9( 2.3)
3	-	2( 0.9)	2( 0.5)
2	1( 0.6)	3( 1.4)	4( 1.0)
1	8( 4.7)	7( 3.2)	15( 3.9)
0(none)	5( 3.0)	1( 0.5)	6( 1.5)
<b>IADL</b>			
Shopping	143(84.6)	189(86.3)	332(85.5)
Food preparation*	137(81.1)	203(92.7)	340(87.6)
Transportation	153(91.6)	195(89.0)	348(89.7)
Ability to handle finances*	141(83.5)	151(68.9)	292(75.3)

\* p < 0.01 by Chi-square test.

39.6%, 16.0% .  
 , 82.1%, 42.9% 가 가  
 , 14.9%, 34.3% 가 ‘ 가  
 . 가 ,  
 가 67.5% ,  
 가 14.8% , (Siu , 1994).  
 가 35.6%, 가가  
 가 34.7% (Table 6). 가 - 가 .  
 가 가 가 가 가  
 가 13.8%, 18.2% , (Williams , 1987; Hogan  
 15.0%, Fox, 1990; Epstein , 1990; Rubenstein , 1991). ,  
 18.2%

Table 6. Distribution of social and environmental conditions in the elderly

Condition	Unit: No.(%)		
	Male	Female	Total
Care giver			
Provision			
Yes	67(39.6)	35(16.0)	102(26.3)
No	102(60.4)	184(84.0)	286(73.7)
Relationship			
Spouse	55(82.1)	15(42.9)	70(68.6)
Daughter-in-law	10(14.9)	12(34.3)	22(21.6)
Children	2( 3.0)	5(14.3)	7( 6.9)
Relatives	-	3( 8.6)	3( 2.9)
Living			
with children	25(14.8)	46(21.0)	71(18.3)
with spouse only	114(67.5)	78(35.6)	192(49.5)
alone	13( 7.7)	76(34.7)	89(22.9)
not classified	17(10.1)	19( 8.7)	36( 9.3)
Environmental risk			
0(none)	25(15.0)	39(18.2)	64(16.8)
1	45(26.9)	50(23.4)	65(24.9)
2	43(25.7)	46(21.5)	89(23.4)
3	31(18.6)	40(18.7)	71(18.6)
4	23(13.8)	39(18.2)	62(16.3)

가

가 가 가 가

10 가

가 (Resident

가 Assessment Instrument; RAI)

가 (Minimum Data Set; MDS)

(Rubenstein , 1991) 300 ,

가 (Home Care),

(Facilities), (Post Acute

가 Care), (Mental Health)

(Morris , 1990; Clauser Fries, 1992;

Hawes , 1995). (2000) RAI MDS-HC

가

가



가 509%, 65.3% 가 34.3%,  
 . Reuben 39.3% ,  
 (1990) 1-6% .  
 가 10 가 8 가 33.7%, 44.7% .  
 가 360 , 가  
 , 50 , (mini-mental state  
 Lachs (1990) 가 가 examination; MMSE) 가  
 , 19.1%,  
 , 24.9% .  
 , (2000) 가  
 , 11 CES-D(Center for Epidemiological  
 . Studies-Depression Scales)  
 (1998) Reuben 가 14.6%, 24.4% .  
 11 (ADL) 가 67 가  
 64.7% ,  
 1998 65 2,535  
 68.1%  
 ( , 1998).  
 , (IADL) 가 가 가  
 81.1% 92.7% ,  
 1 16 가 가 가 68.9% 83.5%  
 , 3 가 19% .  
 ( : multiple pathology), 가  
 가 (polypharmacy) 26.3% ,

30

가

가 가 . 가 50.9%, 65.3% 가 ,  
 49.5%가  
 가 가 , 34.3%, 39.3% ,  
 22.9% . 1-6%  
 가 72.4% .  
 가 4.  
 가 가 33.7%, 44.7% ,  
 가 가 가 83.5% 가  
 19.1%, 24.9% .  
 65 5. (ADL) 가 6가  
 72.2%, 58.9%  
 (IADL)  
 , 가 가 81.1% 92.7%  
 , , , , 가 가  
 가 가  
 68.9% 83.5% .  
 6. 가  
 가 가 26.3% ,  
 가 가  
 . 가 49.5%가  
 , , 가 22.9%  
 , 가 가  
 가 가 83.5% .  
 가  
 65 388

(ADL), 가 (IADL)  
 , 가 .  
 1. 388 가 169 (43.6%) 가 1. , .  
 219 (56.4%) , 73.5±6.4 , 1995; 34(6): 875-884  
 74.0±6.2 .  
 2. 1 16 가 가 2. , , , , , .  
 , 3 가 가 가 . 2000;  
 19% . 4(1): 68-75  
 3. 가 3. , , , , , .

- 2000; 25(1): 85-98
4. 가  
1998; 2(2): 7-17
  5. , , . 1998  
, 1998
  6. 가 :  
, 1998, pp. 392-396
  7. . 2001
  8. Clauser SB, Fries BE. Nursing home resident assessment and case-mix classification for nursing homes: cross-national perspectives. *Health Care Financing Review* 1992; 13(4): 135-155
  9. Epstein AM, Hall JA, Fretwell M, Feldstein M, DeGantis ML, Tognetti J. Consultative geriatric assessment for ambulatory patients: a randomized trial in a health maintenance organization. *JAMA* 1990; 263(4): 538-544
  10. Hawes C, Morris JN, Philips CD, Mor V, Fries BE, Nonemaker S. Reliability estimates for the minimum data set for nursing home resident assessment and care screening. *The Gerontologist* 1995; 35(2): 172-178
  11. Hogan DB, Fox RA. A prospective controlled trial of a geriatric consultation team in an acute care hospital. *Age Ageing* 1990; 19(2): 107-113
  12. Katz S, Ford AB, Moskowitz RW. Studies of illness in the aged. The index of ADL. *JAMA* 1963; 185(12): 914-919
  13. Lachs MS, Feinstein AR, Cooney LM Jr, Drickamer MA, Marottoli RA, Pannill FC, Tinetti ME. A simple procedure for general screening for functional disability in elderly patients. *Ann Intern Med* 1990; 112(9): 699-706
  14. Lawton MP, Brody EM. Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist* 1969; 9: 172-186
  15. Morris JN, Hawes C, Fries BE, Philips CD, Mor V, Katz S, Murphy K, Drugovich ML, Friedlob AS. Designing the national resident assessment instrument for nursing facilities. *The Gerontologist* 1990; 30(3): 293-307
  16. Reuben DB, Siu AL. An objective measure of physical function of elderly outpatients: The physical performance test. *J Am Geriatr Soc* 1990; 38(10): 1105-1112
  17. Ross MET, Wright MF. Long-term care for elderly individuals and methods of financing. *J Community Health Nursing* 1998; 15(2): 77-89
  18. Rubenstein LZ, Stuck AE, Siu AL, Wieland D. Impacts of geriatric evaluation and management programs on defined outcomes: overview of the evidence. *J Am Geriatr Soc* 1991; 39: 8s-16s
  19. Siu AL, Reuben DB, Moore AA. Comprehensive geriatric assessment in principles of geriatric medicine and gerontology. North Carolina, Wake Forest University Press, 1994, pp. 203-211
  20. Williams ME, Williams TF, Zimmer JG, Hall WJ, Podgorski CA. How does the team approach to outpatient geriatric evaluation compare with traditional care: a report of a randomized controlled trial. *J Am Geriatr Soc* 1987; 35(12): 1071-1078