

Prioritizing Problem Characteristics and Applying Monitoring Technology to Korean Elderly Dementia Patients

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Objective; The aim of this study was to investigate the key problem characteristics of Korean elderly dementia patients and to prioritize these characteristics according to patient risk, considering the introduction of remote monitoring technology.

Methods; Individual responses in the completed questionnaires were tabulated. To identify the central characteristics, factorial analysis on the responses to the problem features questionnaire was performed. The 109 items were subdivided into problem category (problems of perception, mentality, language, behavior, and coping with daily life). Factor analysis identified 20 key problem characteristics.

Gender, age, and number of senile dementia patients and the normal elderly.

	Male		Female		Total	
	Number	Age (SD)	Number	Age (SD)	Number	Age (SD)
Senile Dementia Patients	28	80.4 (8.6)	82	80.5 (8.6)	110	80.4 (8.6)
Normal Elderly	9	81.1 (8.3)	21	76.9 (8.1)	30	78.3 (8.3)

The result of K-MMSE according to gender and dementia severity for 110 senile dementia patients.

Gender	Mild		Moderate		Severe	
	Average Score	Number	Average Score	Number	Average Score	Number
Male	20.7	3(10.7%)	12.6	17(60.7%)	2.8	8(28.6%)
Female	20.8	8(9.8%)	12.7	45(54.9%)	3.8	29(35.4%)
Total	20.8	11(10.0%)	12.7	62(56.4%)	3.4	37(33.6%)

Conclusions; The present analysis only addresses patients confined to a welfare facility. Further studies on patients in a domestic situation will be required to determine if the central problem characteristics in the home are different from those in the facility.

Results; The use of abusive language, deceptive language, information gathering, and repetition were significantly more prevalent in women than in men with dementia. With the exception of abnormal sexual behavior and audiovisual deficits, all major characteristics differed between normal older adults and those with dementia, and across dementia severity levels. Judgment impairment was the most important factor distinguishing normal older adults from those with dementia. Regarding dementia severity, memory impairment was the most important factor distinguishing between severe and mild dementia. When risk to the patient was analyzed, problems of perception were identified as the problem characteristics of highest priority.

Result of one-way ANOVA with independent variable of severity (mild, moderate, and severe) of the senile dementia patients and normal elderly.

Problem Category	Problem Features	Severity of Senile Dementia Patients				All Senile Dementia Patients	F
		Normal Elderly (N=30)	Mild (N=11)	Moderate (N=62)	Severe (N=37)		
Perception	Memory Disorder	1.23a (0.26)	2.41b (1.34)	3.02b (1.37)	4.89c (1.51)	3.08 (1.79)	47.850***
	Judgment Disorder	1.30a (0.38)	3.25b (1.70)	3.72b (1.48)	4.76c (1.53)	3.44 (1.82)	37.174***
	Cognition Disorder	1.08a (0.26)	2.18a (1.53)	3.59b (1.82)	5.47c (1.66)	3.44 (2.19)	47.051***
Mentality	Anxiety and Delusion	1.19a (0.33)	2.58b (1.20)	2.60b (1.13)	2.47b (1.34)	2.26 (1.21)	12.563***
	Abnormal Sexual Behavior	1.00 (0.00)	1.55 (1.24)	1.46 (1.19)	1.76 (1.36)	1.45 (1.13)	2.637
	Apathy	1.21a (0.56)	2.61b (1.33)	3.17bc (1.75)	3.77c (1.66)	2.86 (1.76)	17.170***
Language	Mania	1.18a (0.36)	2.76b (1.94)	2.52b (1.14)	2.84b (1.84)	2.33 (1.56)	8.537***
	Hallucination (Tactile, Olfactory, Visual Hallucinations)	1.07a (0.18)	1.36ab (0.58)	1.48ab (0.83)	1.74b (1.17)	1.45 (0.86)	3.492*
	Depression	1.18a (0.39)	2.95b (1.41)	3.64b (1.65)	3.47b (1.66)	3.01 (1.75)	20.791***
Behavior	Violent Language and Confabulation	1.12a (0.21)	2.58b (1.24)	2.72b (1.64)	2.81b (1.67)	2.39 (1.57)	10.057***
	Aphasia (Expression and Understanding Disorder)	1.24a (0.52)	2.73b (1.53)	3.11b (1.46)	4.47c (1.67)	3.04 (1.77)	30.194***
	Excitement and Violence	1.07a (0.13)	2.55b (1.32)	2.25b (1.20)	2.54b (1.47)	2.10 (1.28)	10.500***
Coping with Daily Life	Sleep Disorder	1.17a (0.37)	2.52b (1.79)	2.82b (1.82)	2.64b (1.86)	2.40 (1.74)	2.373**
	Wandering	1.07a (0.29)	2.00ab (1.12)	2.78b (2.06)	3.08b (2.00)	2.43 (1.90)	8.786***
	Gathering	1.19 (0.43)	1.94 (1.18)	2.01 (1.51)	1.78 (1.43)	1.77 (1.33)	2.756*
Coping with Daily Life	Repetition	1.02a (0.12)	2.73b (1.90)	2.67b (1.72)	3.31b (1.80)	2.49 (1.75)	12.476***
	Daily Life Disorder (Related to Dressing and Using the Toilet)	1.12a (0.27)	2.92b (1.83)	3.66b (1.88)	5.09c (1.61)	3.44 (2.10)	35.468***
	Audiovisual Deficits	1.98 (0.93)	2.64 (1.70)	2.75 (1.66)	3.05 (1.81)	2.65 (1.61)	2.662
Coping with Daily Life	Diet Disorder	1.08a (0.24)	0.78ab (0.72)	2.10bc (1.15)	2.79c (1.46)	2.04 (1.24)	13.497***
	Walking Difficulty	1.25a (0.47)	2.95b (1.78)	3.23b (2.15)	3.41b (2.03)	2.83 (2.02)	9.371***

Result of calculating R^2 value between the senile dementia patients and the normal elderly, and dementia severity.

Problem Category	Problem Features	Normal Elderly/ Senile Dementia Patients	Rank	Dementia Severity (Mild/Moderate/ Severe)	Rank
Perception	Memory Disorder	0.294	5	0.312	1
	Judgment Disorder	0.380	1	0.116	5
	Cognition Disorder	0.321	3	0.279	2
Mentality	Anxiety and Delusion	0.251	7	0.003	19
	Abnormal Sexual Behavior	0.043	20	0.012	12
	Apathy	0.242	8	0.045	7
	Mania	0.151	14	0.009	14
	Hallucination (Tactile, Olfactory, Visual Hallucinations)	0.052	17	0.020	10
	Depression	0.304	4	0.016	11
Language	Violent Language and Confabulation	0.180	10	0.002	20
	Aphasia (Expression and Understanding Disorder)	0.283	6	0.166	3
	Excitement and Violence	0.178	11	0.012	13
Behavior	Sleep Disorder	0.137	16	0.004	17
	Wandering	0.142	15	0.023	9
	Gathering	0.052	18	0.005	16
Coping with Daily Life	Repetition	0.193	9	0.028	8
	Daily Life Disorder (Related to Dressing and Using the Toilet)	0.335	2	0.157	4
	Audiovisual Deficits	0.049	19	0.008	15
	Diet Disorder	0.161	13	0.082	6
	Walking Difficulty	0.168	12	0.004	18