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A Study on Dementia Knowledge, Burden from Behavioral and Psychological Symptoms of Dementia, Attitude toward Dementia in Certified Caregivers

A Young Park[1], Eun Hee Park[2], Hae-Ryoung Park*[3]

[1] *Professor, Dept. of Nursing, Gwangju University, Republic of Korea*

[2] *Professor, Dept. of Nursing, Kwangju Women's University, Republic of Korea*

[*3] *Professor, Dept. of General Education, Kwangju Women's University, Republic of Korea*

ayoung@gwangju.ac.kr[1], juliana@kwu.ac.kr [2], hrpark@kwu.ac.kr[*3]

Abstract

Background/Objectives*: The purpose of this study was to identify the relationships among dementia knowledge, burden from Behavioral and Psychological Symptoms of Dementia (BPSD), attitudes toward to dementia of 127 certified caregivers.*

Methods/Statistical analysis*: This is descriptive correlation research aimed at investigating knowledge about dementia, the burden from behavioral and psychological symptoms of dementia (BPSD), and attitudes toward dementia in certified caregivers, who had received special training related to dementia. To grasp the knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia according to the subjects' general characteristics, the t-test and ANOVA were used, and Scheffe' test was conducted for post-hoc verification.*

Findings*: The differences in dementia knowledge, the burden from behavioral and psychological symptoms of dementia (BPSD), and attitudes toward dementia by the general characteristics are as follows: Knowledge differed significantly by age (F=6.145, p =.003), education (F=7.843, p ＜.001). Attitudes differed significantly by education (F=3.191, p =.045), education experiences about dementia (F=4.350, p ＜.001). The mean score of dementia knowledge was 20.04±3.78 out of 30, and the means of burden from behavioral and psychological symptoms of dementia (BPSD) was 61.37±12.81 out of 100 and the means of dementia attitudes was 95.24±13.24 out of 140. Attitudes toward dementia in caregivers differed significantly depending on their level of education, education experience about dementia. No difference was found in the burden with Behavioral and Psychological Symptoms of Dementia (BPSD) by the general characteristics. The degree of attitudes differed significantly by education (F=3.191, p=.045) and experience of dementia education (t=4.350, p ＜ .001) Attitudes also had a significantly correlated with BPSD(r = -2.16, p =-0.15) and dementia knowledge(r = .197, p =.027).*

Improvements/Applications*: The results suggest that it is necessary to provide continuous education and support to improve dementia knowledge and reduce burden from behavioral and psychological symptoms of*

dementia (BPSD) of certified caregivers in order to improve attitudes of dementia.

Keywords: *Attitude, Burden from Behavioral and Psychological Symptoms of Dementia(BPSD), Caregiver, Dementia, Knowledge*

1. INTRODUCTION

Population with dementia rapidly rises globally due to aging, and the increase in dementia control expenses and family's social and economic burden have become important social problems to be solved by the international society[1]. Major international organizations regard dementia as a main disease to be handled at international level, and seek measures to jointly cope with. Especially OECD reported the seriousness of the global dementia problem through a "Dementia Patients' Quality of Life Enhancement," report and emphasized the development of guidelines for primary personnel's dementia diagnosis capability enhancement, life-long education expansion, various types of care supply increase, and accessibility promotion[2].

In Korea, the aging of population continues the fastest in the world, and also dementia patients increase each year. The number of dementia patients aged 65 and over was estimated to be 750,000 in 2018, which takes up 1/10 of the total elderly people. Family not free from dementia was 3.75 million, and social expenses are skyrocketing due to dementia [2]. Dementia is a cerebropathia, and it gradually develops over 5~20 years, and memory disorder, the decline of judgment, and problem solving capability are revealed as the initial stage symptoms. At the medium stage, various behavioral and psychological symptoms such as delusion, jittery behaviors, aggressive behaviors, loitering, and repetitive behaviors are shown due to continuous damage of the entire brain[3,4,5]. At the terminal stage, symptoms become more serious, and therefore dementia patients gradually depend on others due to the reduction of cognitive capability, daily life capability through weakness, indifference to foods, and inability of communication. In Korea where elderly population soars, caring elderly people with dementia becomes a heavy burden socially in addition to family caregivers. The government announced the Second National Comprehensive Scheme for Dementia Control alongside the enforcement of the Dementia Control Act in 2012, and adopted special dementia grade in the long-term care insurance in July 2014. The government and has been seeking substantiality including the prevention of dementia, offering diagnosis, treatment, and care service, support for dementia patient family, and infrastructure expansion[6,7]. In the special dementia grade system, care workers help physical activities and offer everyday life support, and cognitive stimulation service in consideration of dementia characteristics after completing the specialized dementia courses (80 hours). Therefore they play a pivotal role in relieving dementia patient family's caring burden. This is expected to reduce the ratio of serious dementia patients and improve the quality of life of the subjects for care.

Expertise on and positive attitude towards dementia are the core factors to be equipped with as caregivers taking care of the elderly with dementia[8].

As knowledge on dementia becomes more profound, the attitude towards dementia is positive; however, wrong knowledge brings about bias and negative attitude towards the elderly with dementia, and thus it affects the quality of the care of the elderly people with dementia[9,10].

The behavioral and psychological symptoms revealed by the elderly with dementia causes burnout by increasing burden of caregivers, which increases turnout rate, and thus all these negatively affect the care of

the elderly with dementia [11,12,13]. Recently released domestic and foreign systematic literature review

According to recently reported domestic and international systematic literature review, it was reported the education and training programs for caregivers were effective not only for the reduction of mental behavioral symptoms of the elderly with dementia and for showing continuous mediation effects, but for diminishing caregivers' stress and burden, and improving job satisfaction[14,15,16]. For the effective management of mental behavioral symptoms of the elderly with dementia and for the quality of life improvement of the elderly with dementia and caregivers, the application of specialized education/training programs that can identify and reduce caregivers' burden with behavioral and psychological symptoms of dementia implies that it is a very important issue.

Attitude towards dementia is an important concept affecting the formation of cognitive relationship with the subjects for care and the behaviors of the care service providers[17].

This study aims to grasp the knowledge on dementia of caregivers who completed specialized dementia education, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia, and the specific aims are as follows: First, identify the knowledge on dementia of the subjects, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia.

Second, grasp the knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia according to the subjects' general characteristics.

Third, find out the relationship among the subjects' knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia.

To elevate the service quality of special dementia grade, there is a need to more systematize the education system on the service providers. However research on knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia for caregivers caring the elderly with dementia is still insufficient. This study tries to grasp the knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia of specialized dementia care workers providing direct care for dementia patients and to devise basic data/materials to develop in-depth educational courses.

2. MATERIALS AND METHODS

2.1. *Study design*

This is descriptive correlation research aimed at investigating knowledge about dementia, the burden from behavioral and psychological symptoms of dementia (BPSD), and attitudes toward dementia in caregivers, who had received special training related to dementia.

2.2. *Subject and Data Collection*

This study was conducted in certified caregivers in G City who had received special training related to dementia from May to August 2018 in the National Health Insurance Service in the city. Before the research participants participated in the survey, they explained in writing the purpose of the study, the anonymity of the data, confidentiality, and withdrawal at any time, and voluntarily participated in the research.

2.3. *Instruments*

2.3.1. Knowledge of Dementia

Knowledge of dementia was measured using the Alzheimer's Disease Knowledge Scale-Korean Version (ADKS-K) developed by Kim and Jung[6], which was developed into a Korean version from Alzheimer's disease knowledge measuring tool of Carpenter et al.[18]. ADKS-K consists of 30 questions on the risk factors, care, assessment and diagnosis, prognosis, symptoms and characteristics, treatment, and change of life concerned with Alzheimer's disease. To each question, the respondents can answer as "Yes" or "No." The correct answer is calculated as one point and the wrong answer as zero point, and thus total score can be calculated as zero point to 30 points. As for the confidence of the Korean version tool, Cronbach's α was .71, and Cronbach's α was .77 in this study.

2.3.2. Burden from Behavioral and Psychological Symptoms of Dementia (BPSD)

To measure burden with behavioral and psychological symptoms of dementia, this study used a 25-question tool developed by Kim[19] to identify the level of burden felt on the behavioral and psychological symptoms of dementia (BPSD) targeting caregivers or everyday life assistants caring dementia patients in convalescent hospitals for elderly people and sanatoriums. This tool consists of six subdomains, namely six questions on aggressiveness, six questions on jitters, five questions on nursing, three questions on physical symptoms, three questions on neurological signs and symptoms, and two on psychiatric symptoms. The measurement of exhaustion level was carried out with 5-point Likert scale for the past one week: one point - "Was not exhausted," two points - "Slightly exhausted," three points - "Slightly severe," and four points - "Very severe". As the score was higher, burden was higher. As for reliability, Cronbach's α was 0.84 in the study of Kim[7], and Cronbach's α was 0.94 in this study.

2.3.3. Attitude toward Dementia

For attitude towards dementia, Dementia Attitudes Scale (DAS) developed by O'Connor and McFadden[20] was used. DAS consists of 10 questions in cognitive domain and 10 questions in emotional and behavioral domain. To each question, one point for "Not at all" was set and seven points for "Very so" was set, and the possible score range was from 20 to 140 points in total score. Concerning the confidence of the tool at the time of development of the tool, Cronbach's α was .83 ~ .85, and Cronbach's α was .83 in this study.

2.4. *Data analysis*

The collected data were analyzed using an SPSS/WIN 21.0 program. Descriptive statistics was carried out to find out the subjects' general characteristics, knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia. To grasp the knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia according to the subjects' general characteristics, the t-test and ANOVA were used, and Scheffe' test was conducted for post-hoc verification. In addition, Pearson's correlation coefficient was calculated to find out correlations among the subjects' knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia.

3. RESULTS AND DISCUSSION

3.1. *Dementia Knowledge, Burden from BPSD and Attitudes toward Dementia by General Characteristics*

The differences in dementia knowledge, the burden with behavioral and psychological symptoms of dementia (BPSD), and attitudes toward dementia by the general characteristics are as follows: Knowledge differed significantly by age (F=6.145, p=.003), education (F=7.843, p 〈.001), and dementia care career (F=6.679, p 〈.001). For knowledge, the respondents aged ≤50 scored higher than those in their 50s and 60s and the university graduates or those at higher education levels scored higher than the middle school graduates or those at lower education levels. No difference was found in the burden with behavioral and psychological symptoms by the general characteristics. The degree of attitudes differed significantly by education (F=3.191, p=.045) and experience of dementia education (t=4.350, p 〈.001) as seen in Table 1.

Table 1 : Different levels of Knowledge, Burden and Attitudes according to general characteristics (*N*=127)

Characteristics	Categories	n(%) or M±SD	Knowledge		Burden		Attitudes	
			M±SD	t or F(*p*)	M±SD	t or F(*p*)	M±SD	t or F(*p*)
Gender	Male Female	6 121	21.83±3.76 19.95±3.77	1.193 (.235)	61.17±7.36 61.38±13.04	-.040 (.968)	98.33±9.03 95.09±13.43	.584 (.560)
Age	49 or under[a] 50~59[b] 60 or over[c]	53.92±9.93 37(29.1) 51(40.2) 39(30.7)	21.78±3.50 19.49±3.49 19.10±3.93	6.145 (.003)* a>b,c†	63.22±11.04 62.43±11.99 58.23±12.81	1.752 (.178)	97.32±11.44 96.92±13.04 91.08±14.41	2.880 (.060)
Marriage Status	Married	102(80.3) 25(19.7)	20.22±3.75 19.32±3.89	-1.063 (.290)	61.78±12.90 59.68±12.51	-.735 (.464)	95.26±13.16 95.16±13.84	-.035 (.972)
Religion	Yea No	102(80.3) 25(19.7)	20.02±3.69 20.12±4.20	-.119 (.906)	61.63±13.62 60.28±8.88	.609 (.545)	95.70±13.20 93.40±13.54	.776 (.439)
Education	≤Middle school[a] High school[b] ≥University	25(19.8) 50(39.7) 51(40.5)	17.84±3.62 19.94±3.54 21.29±3.6	7.843 (.001)* c>a†	58.44±14.71 61.04±12.06 62.80±12.4	.989 (.375)	90.76±11.38 94.36±14.74 98.50±11.95	3.191 (.045)*

	[c]		0		4			
Work career	Under 1 years 1 to under 3 years 3 to under 5 years 5 years or over	49(38.9) 35(27.8) 12(9.5) 30(23.8)	20.10±3.73 20.60±3.29 19.67±4.87 19.50±4.05	.494 (.687)	61.39±11.14 60.57±13.20 65.17±13.07 60.53±15.14	.430 (.732)	93.47±12.09 95.72±11.69 94.08±12.87 98.17±16.78	.816 (.487)
Experiences of dementia patient care	Yes No	54(42.5) 73(57.5)	19.89±3.62 20.15±3.91	-.385 (.701)	59.87±14.49 62.48±11.39	-1.136 (.258)	96.70±13.04 94.16±13.37	1.069 (.287)
Education experiences about dementia	Yes No	37(29.1) 90(70.9)	20.22±3.79 19.97±3.79	.337 (.737)	59.32±13.30 62.21±12.58	-1.156 (.250)	102.70±12.44 92.18±12.37	4.350 (<.001)*
*p<.05; **p<.001; †Scheffe's test								

3.2. *Levels of Dementia Knowledge, Burden with BPSD and Attitudes toward Dementia*

The dementia knowledge, burden with behavioral and psychological symptoms of dementia (BPSD) and attitudes toward dementia of the subjects are as follows as seen in Table 2. They scored 20.04±3.78 (66.8%) out of 30 for dementia knowledge, 61.37±12.81 (61.4%) out of 100 for the burden with behavioral and psychological symptoms of dementia (BPSD), and 95.24±13.24 (73.3%) out of 140 for attitude toward dementia. As with the results of this study, the attitude toward dementia was higher in other papers as the attitude toward dementia was more positive. Positive thinking of attitudes toward dementia have been shown to affect the patient's progress, delay the entry of facilities and reduce caregiver burden. As an attitude towards the elderly with dementia is more positive, the care level becomes higher, and this it is a key factor to improve the dementia patients' quality of life[21,22]. A positive attitude towards dementia has an effect on patient's treatment process, delays the period to enter the nursing facilities, and reduces the burden of caregivers[23,24].

Table 2 : Levels of Dementia Knowledge, Burden and Attitudes (N=127)

Variables	M±SD	min	Max	Range of score	Correct(%) or Item mean
Dementia Knowledge	20.04±3.78	10	27	0-30	66.8
Burden with BPSD	61.37±12.81	30	86	25-100	2.45
Dementia Attitudes	95.24±13.24	62	130	20-140	4.76
* BPSD: Behavioral Psychological Symptoms of Dementia					

3.3. *Correlation with Dementia Knowledge, Burden with BPSD and Attitudes toward Dementia*

As for correlations among dementia knowledge, the burden with behavioral and psychological symptoms

of dementia, and attitudes toward dementia in caregivers, attitudes were positively correlated with dementia knowledge (r=.197, *p*=.027) and were significantly negatively correlated with the burden with behavioral and psychological symptoms (r=-2.16, *p*=.015) as seen in Table 3. Caregivers' lack of knowledge on the dementia characteristics such as behavioral and psychological symptoms of dementia may cause deterioration of the dementia symptom due to delay of initial response to dementia[25]. Those caregivers may show an attitude ignoring abnormal behaviors and repetitive behaviors of the elderly with dementia, and may have a negative effect on the treatment and nursing of dementia patients[26]. Because effective mediation's success for dementia patients whose cognitive disorder is a main attribute is dependent upon subject-centered service offering, based on accurate knowledge on the disease, it is essential to consolidate specialized dementia education for caregivers.

Caregivers' attitudes toward dementia differed significantly by education and experience of dementia education; the more knowledge about dementia and the lighter burden form behavioral and psychological symptoms of dementia, the more positive attitudes toward dementia. It is therefore necessary to develop specific and systematic education that can improve knowledge about dementia care and relieve the burden from behavioral and psychological symptoms of dementia (BPSD) so that caregivers specializing in dementia can have better attitudes toward dementia.

Table 3 : Correlation among Knowledge, Burden, Attitudes (*N*=127)

Variables	Knowledge	Burden	Attitudes
	r(*p*)	r(*p*)	*r(p)*
Knowledge	1	.081(.368)	.197(.027) *
Burden		1	-2.16(.015) *
Attitudes			1
*p<.05			

4. CONCLUSION

This study was carried out to prepare for basic data to develop the complementation education and in-depth courses for specialized dementia caregivers by confirming the relationship among the knowledge on dementia, burden with behavioral and psychological symptoms of dementia, and attitude towards dementia of the caregivers who completed specialized dementia education.

As a result, knowledge on dementia according to the general characteristics of caregivers showed significant differences depending on age (F=6.145, *p*=.003), education level (F=7.843, p 〈.001), and work career (F=6.679, p 〈.001). The attitude according to the caregivers' general characteristics showed significant differences depending on education level (F=3.191, *p*=.045) and experience on dementia education (t=4.350, p 〈.001).

Caregivers' attitude towards dementia and knowledge on dementia (r=.197, *p*=.027) showed a positive correlation, and the attitude and behavioral and psychological symptoms (r=-2.16, *p*=.015) showed a significant negative correlation. That is, as knowledge on dementia was higher, and the burden from behavioral and psychological symptoms of dementia (BPSD) was lower, and attitude towards dementia was more positive. To improve specialized dementia care workers' attitude towards dementia, specific and systematic education

development is considered to be necessary to improve knowledge on dementia care and reduce burden from behavioral and psychological symptoms of dementia (BPSD).

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