

## 노인 난청의 우울성향에 관한 연구

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### ABSTRACT

#### A Study of Geriatric Depression Propensity Based on Hearing Loss of the Old

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**Objective** : The present study was focused on examining into the hearing loss-based depression that is frequently observed the aged over 65 years old. Hereupon, author analyzed the correlation of depression between normal and hearing loss, using KGDS (Korean Form of Geriatric Depression Scale), as well as ascertained the influence of hearing loss on depression and the applicability to screening test data. **Methods** : The subjects were composed of the 108 aged over 65 years old (normal ; 37, hearing loss ; 71) and their average age was 77.06 years old. Pure-tone audiometry was practiced over the whole frequency band and KGDS was drawn up through bone conduction test and tympanometer. **Results** : Results were as follows. First, The male accounted for higher proportion of the hearing loss in the aged over 65 years old, but the female was higher in geriatric depression. Considering the cause of depression, the males were mostly caused by negative thinking and unhappiness feeling, and physical weakening and decreased vitality had the highest percentage of the female's. Second, The group whose hearing threshold heightened in high-frequency band hearing loss was observed showed more serious depression, compared with the group doing not have hearing loss. Moderate hearing loss-based depression was prominent in case of trisection method, and moderate severe hearing loss was prominent in case of quadrisection method. Third, The reason why the aged over 65 years old, who have hearing loss, feel depressive was mostly caused by physical weakening and decreased vitality, concurrently with some psychological factors such as cognitive dysfunction, negative thinking and unhappiness feeling, etc. Finally, In proportion to the increase of their depression, their complaints about hearing loss increased. Conversely, their complaints decreased when their depression was relatively low. **Conclusions** : It is expected that the result of this study may be used to make the aged over 65 years old rightly recognize the problem of hearing loss and the importance of early treatment and rehabilitative therapy, and may be used to correctly ascertain the geriatric depression that psychologically depresses the aged. Moreover, it may be applied to the screening test data that helps the specialists to counsel those who have hearing loss and to select hearing aids and something else.

**KEY WORDS** : Hearing loss · Geriatric depression · psychological factor.

### INTRODUCTION

가 65~74  
33%, 75~84 45%, 85 62%가<sup>5)</sup>  
(mild hearing loss)  
(ageing into disabilities) 가 가 , 가  
(ageing with disabilities) 가 .<sup>14)</sup>  
: 2005 10 31  
: 2005 11 28  
교신저자 : 천행태, 526 - 702 72<sup>12)14)</sup>  
(061) 469 - 1316 · (061) 469 - 1317<sup>19)</sup>  
E - mail : hangtean@yahoo.co.kr Herbst<sup>14)</sup> 69%

31% 20~30%가 (15)18) 가 (11) 가 (7) 가 (8) 가 (Korean Geriatric Depression Scale : KGDS) 가 가

(Korean Geriatric Depression Scale : KGD) Face to Face(FF) '1' '0' 0 14~ 18 가 , 19~21 22 5가 (emotional discomfort), 2 (Neagtive thinking and unhappiness feeling), 3 (Physical weakening and Decreased vitality), 4 (Cognitive dysfunction), 5 (Decreased social interest and activity) (Qualiton Wide Range - C) 250, 500, 1,000, 2,000, 4,000, 8,000 Hz (Video otoscope ST - 104) (GSI Tymptstar V2)

MATERIALS AND METHODS

연구대상 2004 11 1 2005 1 31 65 123 가 31 (28.7%), 가 77 (71.3%) . 30 dBHL 71(65.7%) 37 (34.3%) 77.06 (Range : 65~93 , SD : 6.23) , 75.61 (Range : 66~84 , SD : 5.02) 77.64 (Range : 65~93 , SD : 6.60) 연구방법 , 가 가 ,

500, 1,000, 2,000 Hz (500+1,000+2,000)/3 3 30 dBHL (no hearing loss), 30~40 dBHL (mild hearing loss), 41~55 dBHL (moderate hearing loss), 56 dBHL (moderate severe hearing loss) SPSS 10.0

RESULTS

성별에 따른 한국형 노인우울검사(KGDS) 44.25 ± 15.58 (moderate hearing loss) 15.55 ± 3.93 34.31 ± 11.23 (mild hearing loss)

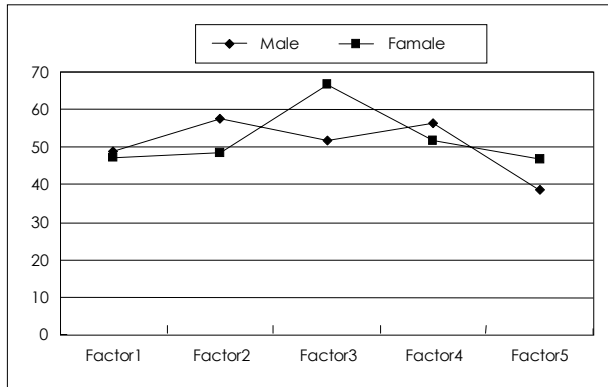
Table 1. Gender differences in the test scores

Sex		Normal		Hearing loss		Total	
		Hearing	KGDS	Hearing	KGDS	Hearing	KGDS
Male	Mean	24.58	13.00	47.16	15.93	44.25	15.55
	SD	2.85	5.48	14.52	3.64	15.58	3.93
Female	Mean	25.15	14.33	41.17	17.39	34.31	16.08
	SD	4.57	5.09	9.73	4.37	11.23	4.90
Total	Mean	25.09	14.19	43.45	16.83	37.16	15.93
	SD	4.39	5.07	12.04	4.14	13.34	4.63

**Table 2.** T-test, ANCOVA (Analysis of Covariance) scores

Sex	N	Mean	SD	t	df	p
				SS	F	p
Male	31	15.55	3.93	-0.535	106	0.593
Female	77	16.08	4.09	95.208	5.518	0.021*

p<0.05



**Fig. 1.** Factor distribution in both genders.

16.08 ± 4.90  
15.93 ± 3.64  
17.39 ± 4.37  
(Table 1).

t -

(t = -0.535 p=0.593).

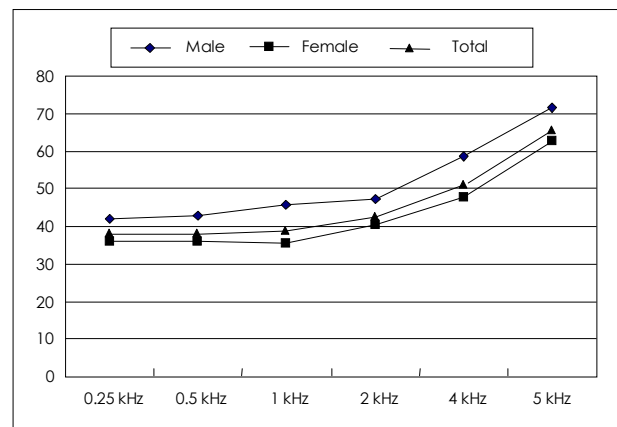
가

가 (Table 2).  
(KGDS)

**Table 3.** Factor3 distribution in KGDS

Sex	N	Mean	SD	t	df	p
Male	31	4.13	1.38	-3.517	106	0.001
Female	77	5.34	1.70			

p<0.05



**Fig. 2.** Results of pure tone audiometry.

(moderate hearing loss), 4 kHz 47.18 ± 18.26 (moderate severe hearing loss), 8 kHz 68.38 ± 20.40 (moderate severe hearing loss) 가 (Fig. 2).

3

37 (34.2%), 35 (32.4%), 26 (24.1%), 10 (9.3%) (Table 4). 3

(Fig. 1).

25.09 ± 4.39

가 4.13 ± 1.38 5.34 ± 2.79 14.19 ± 5.07 , 34.24 ± 14.97 ± 3.51 , 47.44 ± 3.53 , 19.54 ± 4.05 (Table 3).

65.33 ± 12.49 , 18.90

난청의 정도에 따른 한국형 노인 우울검사(KGDS) ± 3.84 가

(Table 4).

가

0.5 kHz 35.79 ± 12.85, 1 kHz 35.60 ± 14.58, 2 kHz 38.24 ± 16.08

가 (Normal)

(Moderate hearing

**Table 4.** Trisection method scores

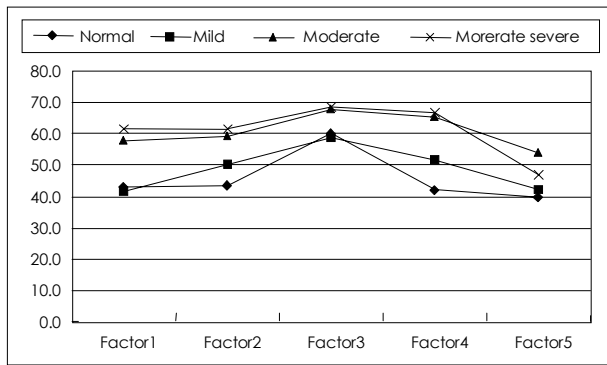
Hearing loss	N	Means $\pm$ SD		F (df)	p
		(dBHL)	Depression		
Normal	37 ( 34.2%)	25.08 $\pm$ 4.39	14.19 $\pm$ 5.07	7.517 (3.0)	0.000
Mild	35 ( 32.4%)	34.24 $\pm$ 2.79	14.97 $\pm$ 3.51		
Moderate	26 ( 24.1%)	47.44 $\pm$ 3.53	19.54 $\pm$ 4.05		
Moderate severe	10 ( 9.3%)	65.33 $\pm$ 12.49	18.90 $\pm$ 3.84		
Total	108 (100%)	37.16 $\pm$ 13.34	15.93 $\pm$ 4.63		

p<0.05

**Table 5.** Factor4 distribution in KGDS

Hearing Loss	Factor	N	Mean	SD	t	Df	p
Normal	Normal	37	14.19	5.07	-2.908	106	0.004
	Loss	71	16.83	4.14			
Factor 4	Normal	37	2.54	1.54	-3.320	106	0.001
	Loss	71	3.52	1.41			

p<0.05



**Fig. 3.** Factor distribution in hearing loss.

loss) (p=0.002), (Moderate severe hearing loss) (p=0.026).

14.19  $\pm$  5.07 , 16.83  $\pm$  4.14 가 (Table 5). (KGDS)

(Fig. 3). 4 2.54  $\pm$  1.54 , 3.52  $\pm$  1.41 (Table 5).

27 (25.0%), 68 (62.9%), 10 (9.3%), 3 (2.8%) (Table 6). 3 4 kHz 가 13.04  $\pm$  4.92 15.71  $\pm$  4.18 , 17.30  $\pm$  3.55 , 19.38  $\pm$  4.25 가 (Table 6).

(p=0.004), 가 (p=0.000).

13.04  $\pm$  4.92 , 16.89  $\pm$  4.14 가 (Table 7). (KGDS)

(Fig. 4). 2, 4, 5 (Table 7).

자가 평가 항목에 따른 한국형 노인우울검사(KGDS)

가 가

4

4

60 (84.5%)

**Table 6.** The quadrisection method scores

Hearing loss	N	Means ± SD		F (df)	p
		(dBHL)	Depression		
Normal	27 ( 25.0%)	24.81 ± 3.53	13.04 ± 4.92	8.195 (3.0)	0.000
Mild	38 ( 35.2%)	35.76 ± 2.91	15.71 ± 4.18		
Moderate	30 ( 27.8%)	48.04 ± 4.12	17.30 ± 3.55		
Moderate severe	13 ( 12.0%)	65.19 ± 10.51	19.38 ± 4.25		
Total	108(100%)	39.98 ± 13.52	15.93 ± 4.63		

p<0.05

**Table 7.** Factor5 distribution in KGDS

		N	Mean	SD	t	df	p
Hearing Loss	Normal	27	13.04	4.92	-3.993	106	0.000
	Loss	81	16.89	4.14			
Factor 2	Normal	27	2.41	1.85	-2.333	106	0.022
	Loss	81	3.28	1.64			
Factor 4	Normal	27	2.37	1.45	-3.360	106	0.001
	Loss	81	3.46	1.46			
Factor 5	Normal	27	0.96	0.81	-2.424	106	0.017
	Loss	81	1.46	0.95			

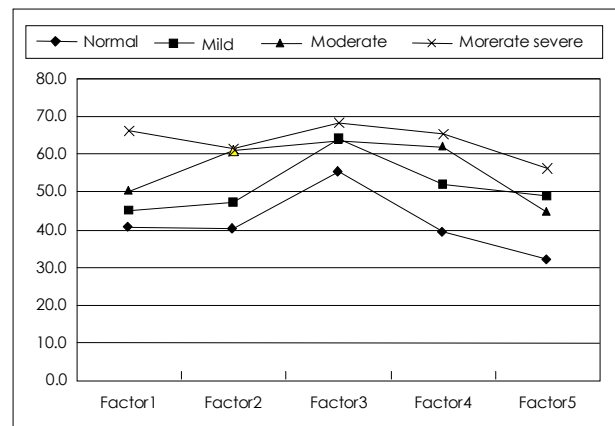
p<0.05

**Table 8.** Self assessment test scores

Hearing loss		Assessment	N	Mean	SD	t	df	p
Hearing Loss	Loss	Loss	60	17.33	4.12	2.471	69	0.016
		Normal	11	14.09	3.24			
	Normal	Loss	18	15.39	5.36			
		Normal	19	13.05	4.64			
Hearing Aid	Loss	Want	23	17.57	4.01	1.034	69	0.305
		Not	48	16.48	4.20			
	Normal	Want	05	18.00	3.04			
		Not	32	13.59	5.05			

p<0.05

17.33 ± 4.12 ,  
 11 (15.5%) , 14.09 ± 3.24  
 (Table 8).  
 18 (48.6%) , 15.39  
 ± 5.36 , 19 (51.4%)  
 13.05 ± 4.64 (Table 8).  
 가 가  
 가 가  
 가 가  
 가 23 (32.4%) , 가 48 (67.6%)  
 17.57 ± 4.01 , 가 5 (13.5%)  
 16.48 ± 4.20 , 가 32 (86.5%)  
 가 가 가  
 (Table 8).  
 18.00 ± 3.04 , 가 5 (13.5%)  
 13.59 ± 5.05 (Table 8). 가 32 (86.5%)



**Fig. 4.** Factor distribution in hearing loss.

## DISCUSSION

44.25 ± 15.58 dBHL, 34.31 ± 11.23 dBHL

가 10 dB , 가

1) 6)

15.55 ± 3.93 가 , Woo 22)

16.08 ± 4.90 가

15.93 ± 3.64 17.39 ± 4.37 가

(Table 1). (KGDS)

BDI(Beck Depression 가 4

Inventory) 가 19.6 4

가 27.4 가 가 4

가 , 4) 2) (Table 5). 4

16%, 33% (KGDS)

가 , , ,

(Table 2), 4

가 2, 4, 5가

(F=5.518, P=0.021). (Table 7). Evans & Katona

가 가 ,

가 가 17) ,

가 65

가 가 가

가 가 가

(Fig. 1). 가

65 가

0.5 kHz 35.79 ± 12.85, 가

1 kHz 35.60 ± 14.58, 2 kHz 38.24 ± 16.08 , 가

가

4 KHz 47.18 ± 18.26 가 가 ,

(Fig. 2). 가 17.64 ± 3.87 , 가

Bunch<sup>10)</sup> 15.33 ± 4.75 가 ,

가 , 23) 9)

가 20) , Popelka 21) 20.7%

가 , 65



- and k. schaie (eds), Handbook of the Psychology of Aging, New York: Van Nostran Reinhold;1985.
21. Popelka MM, Cruickshanks KJ, Wiley TL, Tweed TS, Klein R, Klein BE. Accuracy of self-reported hearing loss. *Audiology*. 1998;37(5): 295-301.
  22. Woo J, Ho SC, Lau J, Yuen YKM, Chiu H, Lee HC, Chi L. The prevalence of depressive symptoms and predisposing factors in an elderly Chinese population. *Acta Psychiatr Scand*. 1994;89(1):8-13.
  23. Zwarredmarker H. Der verlust an hohne tonen mit zunehmenden Alter. *Archives of Oheren-heilkunde*. 1891;32:53-56.