

한국어 번역판 Tinnitus Handicap Inventory의 신뢰도 및 타당도 연구

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Reliability and Validity of a Korean Adaptation of the Tinnitus Handicap Inventory

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ABSTRACT

Background and Objectives : Several self-report measures had been developed to assess the handicap due to tinnitus, although they lacked reliability and validity. Well-validated instruments, however, are essential for evaluation and treatment. Newman et al. developed the Tinnitus Handicap Inventory (THI) and researches have examined its reliability and validity. The objective of this study was to determine the reliability and validity of a Korean adaptation of the THI. **Materials and Method :** The Korean adaptation of THI was administered to 111 patients with tinnitus, who visited the Otorhinolaryngology-Head and Neck Surgery department of Samsung Medical Center from March to August of 2001. Convergent validity was assessed using Tinnitus Handicap Questionnaire (THQ), and construct validity was examined using the Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI-S), the somatization subscale of SCL-90-R (SOM) and etc. **Results :** 1) The Korean adaptation of THI and its subscales showed good internal consistency (Cronbach's $\alpha = .95 - .79$) comparable to those of the original version. 2) THI and its subscales demonstrated high test-retest reliabilities ($r = .91 - .73$) comparable to those of the original. 3) High correlation was observed between THI and THQ ($r = .83$). 4) Moderate correlations were observed among THI, BDI ($r = .40 - .51$), STAI-S ($r = .43 - .68$), SOM ($r = .49 - .59$), the perceived loudness of tinnitus ($r = .33 - .46$), and the perceived handicap of tinnitus ($r = .44 - .64$). 5) A confirmatory factor analysis partly supported 3 factors of THI. **Conclusion :** We found THI and its subscales to have valuable internal consistency, test-retest reliability, convergent and construct validity. The results suggest that the Korean adaptation of THI, especially the total score it generates, is a reliable and valid measure of general distress related tinnitus. **(Korean J Otolaryngol 2002;45:328-34)**

KEY WORDS : Tinnitus · Tinnitus handicap inventory · Reliability · Validity.

(tinnitus) 10.5%¹⁾

5-7)

1-3)

Coles⁴⁾ 가

8 10% 가 1 Tinnitus Handicap Questionnaire(THQ)가 Newman⁸⁾ THQ 가 3

2%

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Tinnitus Handicap/Support Questionnaire, Tinnitus Effect Questionnaire, Tinnitus Severity Questionnaire

9) Tinnitus Handicap Inventory (THI) Newman subscale ; 5 가 1 2
 , THI 가 가 “ ”, “가 ”, “
 , 10) THQ ” “ ” 0 , “가
 0 100 가 ” 2 , “ ” 4
 (0 2700), THI (Table 1).
 (0 100)
 가 2001 3 2001 8
 THI 111
 가 40 (54.78±
 11.97), 가 71 (51.64±14.51)
 4 ±7 (1 20) , 가
 52 (46.8%) 가
 THI 25 가
 (functional subscale ; 11), (emotional 가 26 (23.4%), 가 16 (14.4%) 가
 subscale ; 9), (catastrophic , ‘ (25 , 22.5%) ’ , ‘ (16 , 14.4%) ’

Table 1. Endorsement rates and item-total correlations of THI (n=111)

Factor	Item	Endorsement rates number (%)			Item total corr.
		No	Sometimes	Yes	
1F	가 ?	24 (21.6)	61 (55.0)	23 (20.7)	.68
2F	가 ?	39 (35.1)	51 (45.9)	18 (16.2)	.48
3E	가 가 ?	38 (34.2)	49 (44.1)	22 (19.8)	.68
4F	가 ?	50 (45.0)	42 (37.8)	16 (14.4)	.64
5C	? ?	58 (52.3)	31 (27.9)	19 (17.1)	.70
6E	? ?	35 (31.5)	47 (42.3)	27 (24.3)	.68
7F	가 ?	48 (43.2)	36 (32.4)	24 (21.6)	.51
8C	? ?	51 (45.9)	31 (27.9)	25 (22.5)	.46
9F	(. ,)?	60 (54.1)	35 (31.5)	13 (11.8)	.65
10E	가 ?	55 (49.5)	43 (38.7)	12 (10.8)	.78
11C	? ?	34 (30.6)	42 (37.8)	33 (29.7)	.67
12F	? ?	39 (35.1)	43 (38.7)	26 (23.4)	.71
13F	가 ?	47 (42.3)	44 (39.6)	16 (14.4)	.67
14E	가 ?	23 (20.7)	58 (52.3)	28 (25.2)	.75
15F	? ?	50 (45.0)	38 (34.2)	20 (18.0)	.68
16E	가 ?	35 (31.5)	49 (44.1)	25 (22.5)	.71
17E	가 ?	53 (47.7)	38 (34.2)	17 (15.3)	.64
18F	가 ?	47 (42.3)	46 (41.4)	15 (13.5)	.72
19C	? ?	37 (33.3)	33 (29.7)	39 (35.1)	.54
20F	? ?	36 (32.4)	49 (44.1)	24 (21.6)	.64
21E	? ?	33 (29.7)	53 (47.7)	22 (19.8)	.64
22E	? ?	30 (27.0)	51 (45.9)	29 (26.1)	.73
23C	? ?	44 (39.6)	34 (30.6)	30 (27.0)	.48
24F	? ?	31 (27.9)	27 (24.3)	51 (45.9)	.62
25E	? ?	22 (19.8)	51 (45.9)	37 (33.3)	.71

THI : Tinnitus Hancicap Inventory, F : Functional subscale, E : Emotional subscale, C : Catastrophic subscale.

Tinnitus Handicap Inventory

, ' (12 , 10.8%) ' .
 가 30 (27%), 가 32
 (28.8%), 가 35 (31.5%) ,
 14 (12.6%) .
 ,
 44 (39.6%), 51 (45.
 9%), 16 (14.4%) .
 가

Lee¹⁴⁾
 .84 .
 상태-특성 불안 척도
 가 Kim¹⁵⁾
 . STAI 4 (1 : 4 :
) 가
 가 Lee¹⁶⁾ STAI
 .87 .

이명 설문지
 ,
 .
 10 가 (0 :
 10 :) .

SCL-90-R의 신체화 척도
 가 Kim¹⁷⁾
 . SCL - 90 - R 90 , 9
 (SOM)
 12 5 (0 :
 4 :) 가 . SOM
 .72 .

이명 불편감 검사
 Newman⁹⁾
 THI . THI
 Cronbach 's = .96,
 .86, .87, .68

SPSS 10.0 for WINDOWS

이명 불편감 질문지
 THI¹¹⁾ Kuk¹²⁾ THQ
 . THQ
 (physical, emotional, and social con-
 sequence of tinnitus ; 15), (hearing ability of
 the patient ; 8), (patient's
 view of tinnitus ; 4)
 0 100 가 . THQ (E),
 Cronbach 's .94,
 .95, .88, .47 .
 THQ .97 ,
 .96, .93, .81 .

(reliability an-
 alysis) . , THI -
 (correlation analysis) .
 18 ± 9.59 .
 THI . , THI
 (F),
 (C)가
 (factor analysis)
 (scree test : 가
 - eigen value - 가
 가

Beck 우울 척도
 가 Lee¹³⁾ BDI
 . BDI
 21 ,
 0 3 가 .

가
 (confirmatory factor analysis)
 (principal
 axis factoring)

(varimax) . (10) . THI
 (r=.40 .51), (r=.43 .68)
 (r=.68). THI (r=.49 .59),
 (r=.33 .46),
 (r=.44 .64)
 내적 일치도
 THI Cronbach 's .95 .
 (Table 3).
 THI (r=.68 .95)
 (Table 4).
 Cron -
 bach 's 가 , .90,
 .92, .79 ,
 THI 25 KMO ratio .91 ,
 (KMO ratio : 1 가
).
 검사-재검사 신뢰도
 THI -
 (r=.73 .91, p<.001), THI가
 (Table 2).
 1 22.67%, 2가 18.46%, 3 13.
 51% , 54.64%
 가 (factor loading)
 수렴 타당도 가
 THI THQ r=.83, p<.001
 , THI가 THQ
 (" 1 " " 21
 " ? ") , 2 "
 " 9 (" 23
 ? "), 3 " " ? ")
 구성타당도
 THI , ,

Table 2. Test-retest correlation of each subscale (n=18)

	THI			
	Functional	Emotional	Catastrophic	Total
Test-retest correlation	.91*	.83*	.73*	.90*

THI : Tinnitus Hancicap Inventory, *p<.001

Table 4. Correlation coefficients of THI subscales (n=111)

	1	2	3	4
1 THI-total	1.00			
2 THI-F	.95*	1.00		
3 THI-E	.94*	.82*	1.00	
4 THI-C	.82*	.69*	.68*	1.00

THI : Tinnitus Hancicap Inventory, F : Functional subscale, E : Emotional subscale; C : Catastrophic subscale, *p<.001

Table 3. Pearson correlation between THI scores and psychological distress

	Functional	Emotional	Catastrophic	THI-total
Depression (BDI)	.40*	.51*	.46*	.49*
State anxiety (STAI-S)	.50*	.68*	.43*	.60*
Somatic symptoms (SCL-90-R ; SOM)	.56*	.55*	.49*	.59*
Subjective loudness	.46*	.41*	.33*	.45*
Subjective annoyance	.64*	.58*	.44*	.63*

THI : Tinnitus Hancicap Inventory, *p<.001

Tinnitus Handicap Inventory

Table 5. The three factor solution of the 25 items of the Korean translation of THI

Factor	No.	Item	Factor		
			1	2	3
Factor 1. Emotional Distress(factor loadings)					
E	21	?	.753		
E	16	가 ?	.726		
E	3	가 가 ?	.685		
E	10	가 ?	.637		
E	22	?	.635		
E	14	가 ?	.608		
F	20	?	.585		
C	11	?	.546		
F	12	?	.538		
E	25	?	.535		
E	17	가 ?	.512	.483	
F	15	?	.460		
F	24	?	.427		
Factor 2. Functioning Disturbance					
F	9	(. ,)?		.790	
F	4	가 ?		.767	
F	2	가 ?		.757	
F	13	가 ?		.674	
F	18	가 ?		.573	
F	1	가 ?		.489	
E	6	?		.472	
Factor 3. Catastrophic thought					
C	23	?			.764
C	8	?			.661
C	5	?			.585
F	7	가 ?			.542
C	19	?		.321	.373

THI : Tinnitus Hancicap Inventory, F : Functional subscale, E : Emotional subscale, C : Catastrophic subscale

“ ” 가 가 .
 (E) 7 THI
 4 (F), 1
 (C) “ ”
 (E) 1 THQ
 (F) 1 THI가 THQ - 가
 (C) 가 , THI
 8)10) THI가
 . Baguley 18) THI가 THQ
 TQ(tinnitus questionnaire)

THI

THI

THI 가 , 가
 가 . THI가
 THI 2 “ ”
 3 “ ” 1 “ ”
 가
 Newman ⁹⁾ THI 가
 가
⁹⁾¹⁹⁾ THI
 가
¹⁹⁾ 가
 THI ⁹⁾($r=.65 .78$)
 THI Zachariae ¹⁹⁾ ($r=.67 .82$)
 가 ($r=.68 .82$) THI
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THI THI , - 가
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 Tinnitus handicap inventory

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Tinnitus Handicap Inventory

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