

주의력 결핍 과잉행동 장애 아동의 억제능력, 계획능력, 그리고 작업기억 능력

INHIBITION, PLANNING, AND WORKING MEMORY IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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Sang Heop Kim, M.D.,^{*} Chang Hee Hong Ph.D.^{**}

목 적 : 3가 ,

방 법 : 25 7 12 ,
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결 과 : ADHD ,
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논 의 : ADHD ()
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중심 단어 : ADHD .

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ractivity Disorder ; ADHD) 7 ,

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2. 연구도구

1) 억제통제 검사

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연구대상 및 방법

1. 연구대상

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2) 계획능력 검사

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3) 작업기억 검사

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 3. 연구실시 및 절차
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4. 통계방법

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연구 결과

1. 나이 및 추정된 지적능력 비교

Table 1
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Table 1. Comparison of age and estimated IQ between ADHD and control group

	ADHD group (N=25)		Control group (N=25)		†
	mean	SD	mean	SD	
Age	8.88	1.36	9.60	1.68	1.67
Estimated IQ	100.76	11.37	107.64	11.12	2.16*

* : p<05

Table 2. Correlation of age, estimated IQ, and executive function tests

	1	2	3	4	5	6	7	8
1 Age	1.00							
2 Estimated IQ	-.12	1.00						
3 Digit span(forward)	.06	.34*	1.00					
4 Digit span(backward)	.56*	.19	.25	1.00				
5 Hanoi tower	-.08	.01	.27	.07	1.00			
6 Stroop RT	-.64†	-.13	-.04	-.51*	.07	1.00		
7 Stroop error	.13	-.27	-.03	-.01	.11	.33*	1.00	
8 Go-nogo	.36*	.30*	.16	-.44*	-.11	-.32*	-.17	1.00

* : p<05., † : p<01

ADHD

107.64 ADHD (t=2.16, p=.03). (t=4.43, p<.001), (t=3.19, p=.003).

2. 나이 및 추정된 지능과 실행기능 검사와의 상관성
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Table4

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(F=13.30, p<.001),
(F=9.66, p=.003).

2) 행동억제

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Table 3. Comparison of executive function tests between ADHD and control group

	ADHD group (N=25)		Control group (N=25)	
	mean	SD	mean	SD
Digit span (forward)	9.50	3.30	9.60	2.61
Digit span (backward)	4.71	1.57	6.00	2.33
Hanoi	5.32	.98	5.40	1.39
Stroop RT	47.04	16.81	30.56	8.00
Stroop error	2.40	1.76	1.04	1.21
Go-nogo	7.44	1.33	8.48	.77

(Table 2).

3. ADHD군과 정상군과의 수행 비교

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Table 3, 4

1) 인지억제

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Table 4. Analysis of covariance between ADHD and control group

EF	Covariant	Sum of square	df	Mean square	F	sig.
Digit span (backward)	IQ	9.67	1	9.67	3.52	.067
	Age	60.97	1	60.97	22.18	.000
	Group	2.57	1	2.57	.93	.339
	Error	123.70	46	2.75		
Stroop RT	IQ	77.15	1	77.15	.72	.400
	Age	3394.51	1	3394.51	31.80	.000
	Group	1420.27	1	1420.27	13.31*	.001
	Error	4909.79	46	106.74		
Stroop error	IQ	1.43	1	1.43	.22	.644
	Age	5.72	1	5.72	.66	.423
	Group	21.05	1	21.05	2.62	.112
	Error	100.27	46	2.18	9.66	.003
Go-nogo	IQ	3.92	1	3.92	3.78	.106
	Age	6.45	1	6.45	6.21	.058
	Group	4.92	1	4.92	4.74	.016
	Error	47.74	46	1.04		.035

(t=3.39, p=.002).

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(F=4.74, p=.035).

3) 계획능력

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(t=2.28, p=.027).

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ABSTRACT

Korean J Child & Adol Psychiatr 15 : 82~90, 2004

**INHIBITION, PLANNING, AND WORKING MEMORY
IN CHILDREN WITH ATTENTION DEFICIT
HYPERACTIVITY DISORDER**

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Objectives : The study was performed to compare the executive function (EF ; Inhibition, Planning and Working memory) between ADHD and normal group, and to control the effect of age and intelligence. And the function of inhibition was assessed in two dimensions (cognitive inhibition and motor inhibition).

Methods : K-WISC III and EF test (Go-No-Go, Stroop test, Tower of Hanoi, Digit) was administered to both 25 children with ADHD and 25 normal control participants, all aged between 7 and 12. The results were analyzed after statistically controlled for age and intelligence.

Results : Children in the ADHD group had significantly lower IQ score than those in the control group and consistent relations were found between the child's age and the study's major variables. Once IQ and age were controlled, results indicated that children with ADHD had deficit only cognitive inhibition and motor inhibition. There was no significant difference in planning and working memory.

Conclusion : These results suggested that specific deficits in inhibition control rather than general EF deficits are associated with ADHD. So inhibition is the core problem of children with ADHD. Thus, the therapeutic approach focused on cognitive inhibition and motor inhibition is required.

KEY WORDS : ADHD · Executive function · Inhibition · Planning · Working memory.