



# Comparison of Attention-Deficit/Hyperactivity Disorder Practice in Adults According to a Training Background in Child Psychiatry

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**Objectives:** Awareness of attention-deficit/hyperactivity disorder (ADHD) in adults has significantly increased; however, clinical data specific to the Korean population are insufficient. Clinical experience of ADHD may differ based on whether psychiatrists have received pediatric psychiatry-specific training. In order to prepare a practice parameter for adult ADHD patients in Korea, we examined questionnaire data to observe how pediatric psychiatry training could affect clinical practice for adults with ADHD.

**Methods:** A questionnaire about the diagnosis and treatment process was distributed to both general psychiatrists (GPsy) and child and adolescent psychiatrists (CAP) at the summer and winter workshop meetings of Korean Academy of Child and Adolescent Psychiatry.

**Results:** In total, 142 psychiatrists participated in the survey (86 GPsy, 56 CAP). GPsy and CAP preferred pharmacotherapy (GPsy 82.40%, CAP 64.30%) as the primary treatment option and answered that the clinical psychiatric interview is the most necessary step in diagnostic assessment (GPsy 22.16%, CAP 19.00%). The GPsy responded with an optimal and average treatment duration that was shorter than that reported by CAP.

**Conclusion:** Identification of the initial presenting symptom as the correct diagnosis and the optimal duration of pharmacotherapy differed between GPsy and CAP in practice, whereas concepts in diagnosis and treatment of ADHD in adults were similar for both groups. These results suggest the urgent need for the Continuing Medical Education program for psychiatrists treating adults with ADHD.

**Key Words:** Adult; Attention deficit hyperactivity disorder; Practice pattern; Experts.

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## INTRODUCTION

In the Diagnostic and Statistical Manual of Mental Disorders, fifth edition, attention-deficit/hyperactivity disorder (ADHD) is classified under the “neurodevelopmental disorder” section [1]. Persistence of the disorder up to adulthood has been reported in 40–60% of individuals [2,3]. Although a growing body of research has focused on the persistence of

childhood ADHD through adolescence to adulthood [4,5], professional and public awareness of adult ADHD requires improvement. Concerns associated with stimulant abuse are prevalent, while awareness of the negative consequences resulting from ADHD is highlighted. [6,7] There are no practice guidelines specifically for adult ADHD in Korea, although major guidelines have been published worldwide and expert opinions have been suggested for appropriate treatment for adult ADHD [8,9]. Medical insurance coverage for adult ADHD medication since September 2016, has attributed to the current state of medication, which is inaccurate

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and with an absence of information on the patterns of treatment or compliance. There is a need for the Korean Practice Guideline not only because of issues caused by insurance, but also due to culture specific issues such as the stigma surrounding psychiatric disorders and their medication, differences in drug availability for clinical use, and differences in drug efficacy, and adverse event profiles for Asians, specific for Korean patients. Nonetheless, with the consequent increasing interest in adult ADHD, it has progressively become the main subject of media reports and academic conferences in the field of psychiatry.

Improvement in public awareness has led to an increase in the number of adult ADHD patients seeking general psychiatric specialists as well as child and adolescent psychiatrists (CAP) and general psychiatrists (GPsy), actively involved with treating patients. However, it is our understanding that CAP are more familiar with symptoms and signs of ADHD, due to their experience with childhood and adolescent ADHD, and therefore may be more familiar with the symptoms or signs that change with time. For example, the 'hyperactive' symptom is observed in adults with ADHD as avoidance of symposiums, lectures, or church sermons, while in children, it is observed as standing up while eating or while in the classroom.

In order to establish a practice parameter for adult ADHD, the 'Adult ADHD Study Group in the Korean Academy of Child & Adolescent Psychiatry' surveyed the expert consensus of GPsy on their diagnostic and treatment methods for adults with ADHD.

## METHODS

Prior to the survey, the use of the questionnaire was confirmed through the several meetings with authors who were members of Adult ADHD Study Group. The survey was conducted with the voluntary participation of Korean psychiatrists.

In Korea, one can become a board-certified psychiatrist (GPsy) after passing the 4-year psychiatric resident training exam and then a qualified CAP by undergoing an additional 2-year training. Here, we categorized the psychiatrists without child and adolescent psychiatric training as GPsy, and with child and adolescent psychiatric training as CAP.

The survey questionnaire was distributed at the summer, August 2018, and winter, February 2019, workshops of Korean Academy of child and adolescent psychiatry from August 2018 to February 2019. Among the 195 attendants, responses were received from 142 members: 86 GPsy and 56 CAP. The response rate was 74.3%.

The questionnaire included the following parameters; 1) sociodemographic variables such as age, sex, and years of

clinical experience, 2) opinion and clinical practice about diagnostic assessment of adult ADHD such as chief complaints at initial visit and steps to diagnosis and differential diagnosis, and 3) opinion and clinical practice about adult ADHD treatment, such as preferred treatment options, preference of anti-ADHD medication, and treatment duration.

### Data analysis

Descriptive statistics were calculated to analyze demographic characteristics. We used Student's t-test to compare the means and the Chi-squared ( $\chi^2$ ) test to compare proportions. We did not include missing responses in our computations. The data were analyzed using SPSS for Windows (version 21.0; IBM Corp., Armonk, NY, USA).

### Ethics statement

This study's protocol was approved by the Institutional Review Board of Hospital (KMC IRB 2017-02-054).

## RESULT

### General

Psychiatrists in the CAP group were older and had more clinical experience than did those in the GPsy group (Table 1). Percentage of patients showing ADHD core symptoms as the chief complaint at the first clinic visit was statistically different between groups. (GPsy 48.16%, CAP 56.48;  $p=0.045$ ). The presenting symptoms of bipolar disorder, anxiety disorder, and substance abuse disorders (SUDs) as the chief complaints in patients with ADHD were significantly higher in the GPsy group ( $p=0.016$ ,  $p=0.011$ ,  $p=0.004$ ) (Table 1).

### Diagnosis

In the diagnostic process, both GPsy and CAP used a self-report scale, clinical psychiatric interview, psychological tests, and attention tests in order of descending frequencies (Fig. 1).

### Treatment

GPsy and CAP equally prefer pharmacotherapy as the first option, psychoeducation as the second, and cognitive behavioral therapy as the third. (Fig. 2) Optimal treatment duration according to 31.3% of GPsy and 5.7% of CAP was less than 1 year. The average duration of treatment in adult ADHD was less than 6 months for 38% of GPsy and 1.9% of CAP (Table 2).

## DISCUSSION

Results of this survey suggest that there is no significant difference between GPsy and CAP, with regards to the pref-

**Table 1.** Characteristics of respondents of the survey

	CAP (n=56)	GPsy (n=86)	t/z/ $\chi^2$	p	Total (n=142)
Age (years), n (%)					
Mean	43.80	40.16	2.616*	0.010	41.57
<40	22 (39.28)	50 (58.13)			72 (50.34)
40–50	19 (33.92)	22 (25.58)			41 (28.67)
≥50	13 (23.21)	13 (15.11)			26 (18.18)
No answer	2 (3.57)	1 (1.18)			3 (2.81)
Sex (male), n (%)	24 (42.86)	38 (44.19)			62 (43.66)
Years of clinical experience, after board acquisition (mean)	13.62	9.99	2.542*	0.012	11.55
Experience of treatment of adults with ADHD, n (%)	55 (98.21)	79 (91.86)	-1.322	0.188	134 (94.37)
Number of patients the respondent has experience with, n (%)					
<10	10 (18.18)	41 (51.90)			51 (38.06)
10–50	31 (56.37)	35 (44.30)			66 (49.25)
≥50	14 (25.45)	3 (3.80)			17 (12.69)
Percentage of patients showing ADHD core symptoms as initial clinical presentation at the 1st visit, %	56.48	48.16	2.024*	0.045	51.09
Other than ADHD core symptoms					
Bipolar disorder	14.17	23.75	-2.465*	0.016	20.00
Depressive disorder	44.48	38.39	1.541	0.126	40.57
Anxiety disorder	23.56	32.50	-2.602*	0.011	28.37
SUD	14.04	27.17	-3.041 <sup>†</sup>	0.004	21.31
Personality disorder	10.33	12.14	-0.285	0.800	12.11
Intermittent explosive disorder	25.08	24.34	0.183	0.856	24.46
Others	13.50	14.58	-0.314	0.771	14.09
Percentage of patients who were diagnosed as ADHD, when they were grown up, %	55.19	66.42	-1.995*	0.048	62.10

\*p<0.05, <sup>†</sup>p<0.01. ADHD: attention-deficit/hyperactivity disorder, CAP: child and adolescent psychiatrists, GPsy: general psychiatrists, SUD: substance abuse disorder

erence of a self-report scale and clinical psychiatric interview, while diagnosing adult ADHD, considering the medication, psychoeducation, and cognitive behavioral treatment in adult ADHD.

However, there was a significant difference in GPsy considering comorbid diseases such as bipolar disorder, anxiety disorder, and SUD at the first visit. This suggests that the GPsy interpret the patients' symptoms as a symptom of other diseases common to adults rather than as the core symptoms of ADHD. For a symptom such as "difficulty in concentration," GPsy seem to first consider diagnoses of other conditions that may occur in adulthood and CAP seem to consider ADHD as the first diagnosis in a developmental perspective.

In the absence of a single diagnostic tool that can be called 'gold standard,' a final decision of the clinician based on clinical information is imperative; therefore it is reasonable to

conclude that a clinical interview is conducted after the administration of a self-report scale to identify subjective symptoms. Additionally, psychological tests and attention tests, which are comparatively objective and capable of examining attention, are the third and fourth necessary diagnostic assessments. These are performed in order to obtain an objective, evidence-based diagnosis in practice.

In terms of treatment, our result of pharmacotherapy preference as the first option is consistent with the existing guideline that drug treatment should be the first line of treatment unless the person prefers a psychological approach [10].

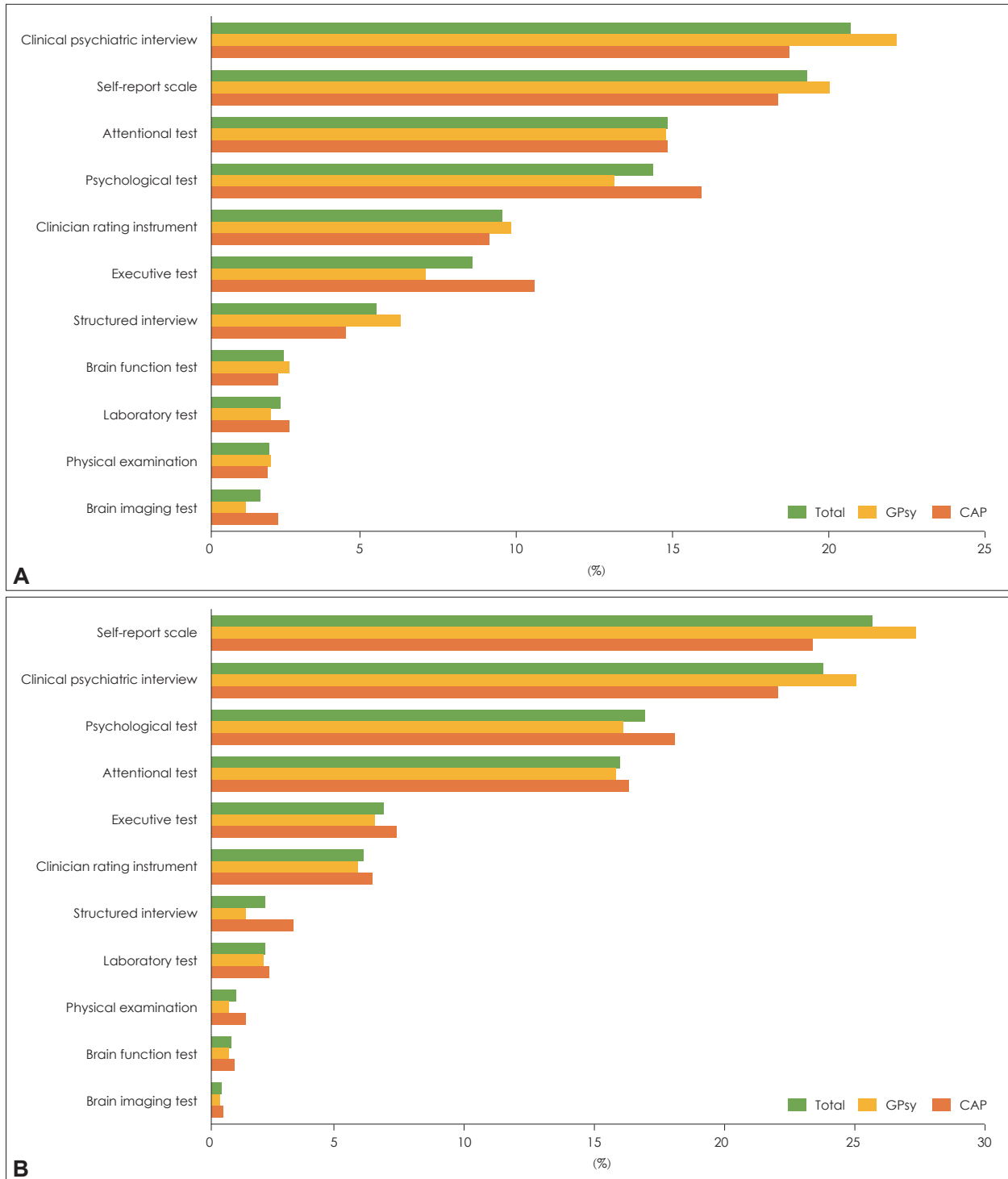
Average treatment duration and optimal treatment period is significantly shorter for GPsy than CAP, possibly due to the difference of opinion and in clinical experience on long-term course and prognosis.

To date, thorough psychiatric interview is important in diagnosis of adult ADHD [11]. Therefore, clinical experience

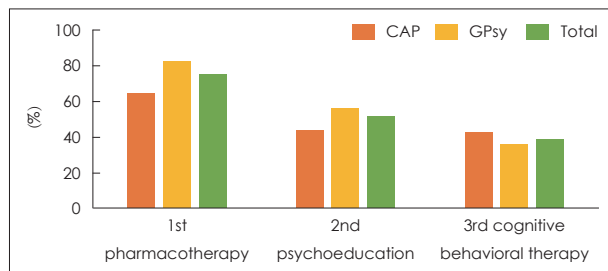
of the physician is important. CAP experience the growth and development of child and adolescent patients with ADHD, while accumulating experience, considering that many parents of child and adolescent patients are with ADHD. With regard to adult ADHD patients, communication between

GPsy and CAP is essential.

All GPsy need a long time to build up their experience; hence, it is necessary that psychiatrists of the CAP group share their knowledge on the long-term clinical course and their clinical experience. Utilization of valid and appropriate di-



**Fig. 1.** The diagnostic assessment methods. A: The diagnostic assessment methods in current practice (%). B: The diagnostic assessment methods in the text-book level knowledge (%). CAP: child and adolescent psychiatrists, GPsy: general psychiatrists.



**Fig. 2.** The preferred treatment options for attention-deficit/hyperactivity disorder in adults. CAP: child and adolescent psychiatrists, GPsy: general psychiatrists.

**Table 2.** The opinion for the optimal treatment period and average treatment duration

The optimal treatment period	CAP	GPsy	$\chi^2$	p	Total
6 months or less	0 (0.0)	3 (3.8)			3 (2.3)
6 months–1 year	3 (5.7)	22 (27.5)			25 (18.8)
2 years	16 (30.2)	18 (22.5)	15.078*	0.005	34 (25.6)
3 years and more	18 (34.0)	26 (32.5)			44 (33.1)
Other	16 (30.2)	11 (13.8)			27 (20.3)

The average treatment duration	CAP	GPsy	$\chi^2$	p	Total
≤1 month	0 (0.0)	1 (1.3)			1 (0.8)
≤3 months	1 (1.9)	6 (7.6)			7 (5.3)
≤6 months	0 (0.0)	23 (29.1)			23 (17.4)
6 months–1 year	27 (50.9)	32 (40.5)	33.987 <sup>†</sup>	0.000	59 (44.7)
2 years	12 (22.6)	14 (17.7)			26 (19.7)
≥3 years	12 (22.6)	1 (1.3)			13 (9.8)
other	1 (1.9)	2 (2.5)			3 (2.3)

Data are n (%) values. \* $p < 0.05$ , <sup>†</sup> $p < 0.01$ . CAP: child and adolescent psychiatrists, GPsy: general psychiatrists

agnostic tools such as Korean ADHD Rating Scale [12,13], which is a screening tool developed by WHO and standardized in Korea, Korean Adult ADHD Rating Scale [12], which has been developed and standardized in Korea, Diagnostic Interview for ADHD in Adults [12,14], which is a semi-structured diagnostic tool for assessing the presence or absence of symptoms by obtaining detailed examples of each item of diagnostic criteria, and Comprehensive Attention Test [12], which has adulthood norms, are needed to complement shortcomings in clinical practice. Current clinical interviews are disadvantaged due to the lack of objectivity, but can be complemented by using the above-mentioned tools when assessing individuals with ADHD.

## CONCLUSIONS

Regardless of whether the psychiatrists receive training for pediatric psychiatry, GPsy have a textbook-level knowledge about ADHD. However, GPsy may not be able to iden-

tify and interpret an adult ADHD patient's line of thought. CAP and GPsy may have different indices of suspicion in the initial stage of ADHD diagnosis in adults. Considering the duration of optimal pharmacotherapy, both groups agreed in theory, however, they demonstrated differences in opinions with regards to clinical practice.

Efforts should be made to narrow the gap between the expert opinions of the two groups in order to reduce the potential confusion that may be experienced by patients in clinical practice. As part of this effort, we intend to provide Continuous Medical Education that includes newly developed and updated diagnostic tools and current knowledge on adult ADHD, to improve the knowledge among experts and share clinical experiences to provide more advanced medical care. It is important to offer Continuing Medical Education program to doctors to aid their examination of adult ADHD patients and to collect the data for the long-term follow-up in adults with ADHD.

## Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

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