*Original Article*

# Perception, Attitude to Treatment, and Resilience in Adult ADHD

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***Objective:*** To describe perception, attitude to treatment, and resilience in adults with attention deficit hyperactivity disorder [ADHD] attending medical treatment at Ramathibodi Hospital, Bangkok, Thailand.

***Materials and Methods:*** One hundred twenty-six ADHD patients aged 20 years and older were identified by retrospective medical record review. The systematic random sampling for in-depth interview was performed. Subsequently, telephone interview performed by two interviewers, one psychiatrist and one clinical psychologist. Nine subjects were available for in-depth interview.

***Results:*** The diagnosis of ADHD caused wide range of psychological reactions, from feeling relief to mixed feeling that was unable to explain. Difficulties in academic performance and emotional control were commonly recognized by adult ADHD patients. History of suicidal idea and sleep problems were found in 44% of the subjects. Regarding resilience, families and friends were described as the most important factors contributing to patients' coping with ADHD. Interestingly, 67% of subjects were able to find some benefits of having ADHD, such as being full of energy and creativity.

***Conclusion:*** Although the diagnosis of ADHD caused variety of psychological reactions at the beginning, most patients developed coping strategies and were able to find some benefits of having ADHD.

***Keywords:*** ADHD, Adult, Perception, Attitude, Resilience

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Attention deficit hyperactivity disorder [ADHD] is a neurodevelopmental disorder that has mainly been studied in pediatric and adolescent population. However, ADHD has been recently considered as across lifespan condition[1-4]. According to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition [DSM-5], ADHD is characterized by persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with social, academic, and occupational functioning[5]. In USA, an epidemiological study demonstrated an estimated prevalence of ADHD in adults of 4.4%[6]. In Thailand, the prevalence of ADHD was 8.1% in school-age population. However, there is no epidemiological study regarding adult ADHD in Thailand[7].

Individuals with ADHD suffer not only from cognitive deficit but also emotional disturbance, interpersonal problems, underachievement, and other psychiatric comorbidities such as substance use disorders, anxiety disorders, and mood disorders[3,4,8]. Most clinicians believe that adults suffering from ADHD are exposed to more negative life experience than others[9]. Moreover, they tend to develop mal-adaptive coping strategies such as avoidance[10]. As a result, adults with ADHD tend to have low self-esteem and poor or biased self-perceptions[11-13].

In addition, many studies reported adherence problems in patients with ADHD[14-17]. According to landmark study, Multimodal Treatment of Attention Deficit Hyperactivity Disorder [MTA] study, 24.5% of the saliva samples indicated non-adherence during 14-month treatment period[14]. Although stimulant medication can reduce symptoms and lessen the degree of functional impairment of ADHD, the prevalence of medication discontinuation or non-adherence is between 13.2% and 64% in children and adults with ADHD[18]. Interestingly, O'Callaghan reported no association between stimulant adherence and quality of life; on the other hand, the doctor-patient relationship was a strong predictor of patient's quality of life[15]. These studies underscored the complex relationship between ADHD symptoms, treatment modalities, coping strategies, adherence, and doctor-patient

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relationship.

Moreover, the researchers tend to apply the concept of resilience with ADHD patients in the recent years. Mastoras et al found positive association between perceived social support and self-concept including global self-worth, self-reliance, perceptions of academic competence, and social acceptance[19]. Responsive and positive parenting style may improve outcomes in areas such as academic achievement and peer competence[20,21]. Furthermore, peer factors such as peer rejection, aggressive behavior, anxiety, co-morbidity, and treatment response may contribute to individual resilience[22].

ADHD has been considered as a psychiatric disorder that causes a variety of negative outcomes in several areas. Beginning from early childhood, ADHD continuously impacts individual life in many ways, until adulthood. However, less research has evaluated patients' perceptions regarding ADHD, impact of ADHD, attitude to treatment, effectiveness of treatment, and resilience in adult population. The present study aimed to identify patients' perception, impact of ADHD, attitude to treatment, and resilience in Thai adult ADHD.

## Materials and Methods

The present study was a descriptive study by retrospective medical chart review and randomized in-depth interview of patients aged 20 years or older who were diagnosed as attention-deficit/hyperactivity disorder by psychiatrists using the DSM-IV-TR criteria. All subjects, both inpatients and outpatients, attended medical treatment at Ramathibodi Hospital, Bangkok, Thailand between January 2011 and December 2015. According to the computerized medical databases of Ramathibodi Hospital, the authors found the list of patients who were diagnosed attention-deficit/hyperactivity disorder. Subsequently, their medical records were reviewed and a randomization for in-depth interviewing was performed.

The subjects included in the present study had to be diagnosed by psychiatrists based on the DSM-IV-TR criteria. The diagnosis of ADHD in the present study included both the diagnosis from the first psychiatric evaluation sessions and the follow-up sessions. All subjects were aged 20 years or older at the time of study. The patients with diagnosis of ADHD at only one session were excluded because of the instability of their diagnosis.

Regarding the medical record review, data collection procedures included demographic data, clinical presentation, psychiatric and physical co-morbidities, family history, suicidal history, and substance use history. Information was collected from present illness, history, both personal and family history, mental status examination, and results of psychological test. This process was performed by a 9-year-experienced psychiatrist.

Subsequently, the subjects who met the inclusion criteria were randomized by systematic random sampling for in-depth interview. The subjects on the interview list were contacted by telephone using the contact number from the hospital records. The subjects who were unable to be contacted after two attempts and who were reluctant to participate in the study were excluded. Each telephone interview was performed by two interviewers, one psychiatrist and one clinical psychologist. After each interview session, the two interviewers discussed and reached a consensus regarding the interview. The interview duration ranged from 30 minutes to 1 hour, depending on the condition of each conversation. The interviewers had an interview structure that included current clinical presentations, perceptions regarding ADHD, impact of ADHD on participant's life, attitude to treatment, effectiveness of treatment, and resilience. The interviews were performed between March and May 2016.

Descriptive statistics in terms of frequency and percentage were used. The statistics analysis was performed by statistical program SPSS version 18.0. Chi-square test and Mann Whitney U test were used to investigate the difference between medical records reviewed population and telephone interviewed population. A $p$-value smaller than 0.05 was considered as statistically significant. The present study was approved by the Ethics Committee of Ramathibodi Hospital, Mahidol University.

## Results

According to the computerized medical databases of Ramathibodi Hospital, the authors found 212 subjects diagnosed with attention-deficit/hyperactivity disorder and met the inclusion criteria regarding subject's age. After searching and reviewing the medical records, we were unable to find 11 hard copies, 70 subjects had wrong diagnostic coding, and five subjects met the exclusion criteria regarding instability of their diagnosis. As a result, there were 126 subjects for intensive medical records review and randomization for in-depth interview. Finally, 30 subjects were selected and contacted for telephone interview. Subsequently, 21 subjects could not be contacted after two attempts

thus, nine of the 30 subjects were interviewed over the telephone. There was no significant difference in demographic characteristics and general clinical presentations among medical records reviewed population and telephone interviewed population (Table 1).

Regarding perceptions, seven of nine subjects completely accepted that they had ADHD and only two subjects considered that they probably had ADHD. Furthermore, eight subjects described the significant impact of ADHD on their academic performance. For example, having problem with the task that need to work for an extended period, feeling underachieved, difficulty in further study because of lack of basic knowledge, difficulty in reading textbooks, feeling bored, and being not motivated to learn. Regarding work performance, half of subjects had current impact of ADHD on their performance such as difficulty to stay in focus on their work, difficulty to make task priority and order them when there is more than one task, changing job frequently, distraction, and making mistakes in detail. Moreover, half of subjects described themselves as having emotional regulation disturbance such as easily get angry or irritable. Nearly half of subjects (4 of 9 subjects) had difficulty in interpersonal relationship, for example, felt unaccepted by their family and peer, feeling inferior, avoiding participating in social events, and arguing with others. Interestingly, four subjects had sleep problems especially when they felt stressed. Moreover, three subjects had suicidal idea and one subject had a suicidal attempt related to negative emotions, interpersonal problems, and workplace stress.

When the subjects were first diagnosed ADHD, the diagnosis caused a variety of psychological reactions. One subject described that he felt very relieved because he knew the cause of his problems. In contrast, another described that he did not believe and refused the treatment. One subject felt terrible and worthless. Two subjects easily accepted the diagnosis and wanted to start the treatment. Four subjects felt slightly anxious or neutral regarding ADHD. Regarding treatments, six subjects continued their treatments with psychiatrists and believed that the medication helped them improve. Because of significant clinical improvement, two subjects were approved to stop the treatment by their psychiatrists. Another subject continued medical treatment with partial response and believed that medication improved some aspects of ADHD.

Before the subjects were diagnosed, they used several methods to cope with ADHD symptoms. For example, they ignored tasks that required sustained attention and focused on tasks that required less attention, avoided stand-up performances for group performances, and spent more effort and time than others on similar tasks. However, five subjects described themselves as having no strategy to cope or unable to cope with their ADHD symptoms. One subject said he extrovertly tried to ignore all of his problems, but he internally suffered and felt psychological pain deep down himself. After the subjects were informed of their ADHD diagnosis, four subjects believed that medication improved ADHD symptoms and intended to comply with medical treatment. Moreover, four subjects intended to increase self-regulation and tried to focus more on their tasks.

Regarding factors related to resilience, three subjects considered their families as the most important part to support them. Another three subjects considered their friends as the most important part. Interestingly, two subjects mentioned that Buddhism, especially mindfulness practice, was the key to their resilience.

**Table 1.** Demographic characteristics and general clinical presentations of study population

| Characteristics | Medical records reviewed population (n = 126), n (%) | Telephone interviewed population (n = 9), n (%) | Statistics *p*-value |
|---|---|---|---|
| Sex: male | 84 (66.7) | 6 (66.7) | 1.000 |
| Age (years), median (range) | 25 (20 to 58) | 26 (20 to 38) | 0.867 |
| Ethnicity: Thai | 116 (99.1) | 9 (100) | 0.929 |
| Educational level: bachelor's degree or higher | 28 (86.7) | 9 (100) | 0.854 |
| Marital status: single | 19 (61.3) | 7 (87.5) | 0.229 |
| Dominant symptom: inattention | 97 (87.4) | 8 (88.9) | 0.687 |
| Psychiatric co-morbidity | 49 (41.9) | 3 (33.3) | 0.735 |
| Treatment | | | 0.893 |
| Immediate-release methylphenidate | 76 (76.0) | 7 (77.8) | |
| Long-acting Methylphenidate | 16 (16.0) | 1 (11.1) | |
| Other drugs | 8 (8.0) | 1 (11.1) | |

One subject considered oneself as the key factor. When the subjects were asked about the benefit or positive parts of ADHD, four subjects were unable to find the positive part. In contrast, one subject believed that ADHD made him joyful, playful, friendly, and having lots of friends. Two subjects mentioned that they were energetic and diligent. Another two subjects believed that ADHD contributed to their creativity, fast problem-solving skills, and fluency in social conversation. Moreover, one subject thought ADHD made him really focus on the subjects that he was deeply interested because he usually ignored the subjects that he was not actually interested. As a result, he did not waste his energy and time on what he did not really want.

**Table 2.** Perception, attitude, and resilience of adult ADHD

| Topic | Frequency (n = 9) n (%) |
|---|---|
| Perceptions regarding ADHD | |
| Do you really believe that you have ADHD, right now? | |
| - Yes | 7 (77.8) |
| - Probably yes | 2 (22.2) |
| What did you feel when you were diagnosed ADHD? | |
| - Relief, knowing the root of many problems | 1 (11.1) |
| - Accept, looking for the treatments | 3 (33.3) |
| - Neutral, indifferent | 2 (22.2) |
| - Really bad, worthless | 1 (11.1) |
| - Against, resist, not believe in what was informed | 1 (11.1) |
| - Mixed feeling, difficult to explain | 1 (11.1) |
| Impact of ADHD | |
| - Difficulties in learning/studying | 8 (88.9) |
| - Difficulties in working | 5 (55.6) |
| - Difficulties in interpersonal relationship | 4 (44.4) |
| - Difficulties in emotional control | 6 (66.7) |
| - Sleep problems | 4 (44.4) |
| - History of suicidal ideation | 4 (44.4) |
| Attitude to treatment | |
| Do you think your current treatment is effective or useful? | |
| - Effective or useful | 7 (77.8) |
| - Partially effective or useful | 1 (11.1) |
| - No current treatment | 1 (11.1) |
| Do you still follow-up with your doctor? | |
| - Yes | 7 (77.8) |
| - No (no need for medication) | 2 (22.2) |
| Resilience | |
| Before knowing the diagnosis, what did you do to cope with the symptoms? | |
| - Good adjustment:<br>- Avoiding the tasks that require mental effort; however, volunteer for the tasks that require less mental effort<br>- Spending longer time than other in same tasks, putting more effort<br>- Inviting friends to be personal tutors | 3 (33.3) |
| - Poor adjustment:<br>- Suffer, hurt<br>- Rampage, rage<br>- Disorganized<br>- Try to ignore problems<br>- No strategy for coping with symptoms | 6 (66.7) |
| After knowing the diagnosis, how did you cope with the symptoms? | |
| - Taking prescribed medicine | 3 (33.3) |
| - Putting more effort on tasks | 2 (22.2) |
| - Try harder to control negative emotion | 1 (11.1) |
| - Self-observation regarding symptoms | 1 (11.1) |
| - Try to understand ADHD by finding some knowledge in the internet | 1 (11.1) |
| - Grow out of ADHD without strategy for coping with symptoms | 1 (11.1) |
| What is the most important factor to help you cope with your symptoms? | |
| - Families | 3 (33.3) |
| - Friends | 3 (33.3) |
| - Religious (Buddhism) | 2 (22.2) |
| - Myself | 1 (11.1) |
| Do you get any benefits from ADHD? | |
| - Full of energy | 2 (22.2) |
| - Creativity and imagination | 2 (22.2) |
| - Being extricable | 2 (22.2) |
| - Being funny, friendly, light-minded | 1 (11.1) |
| - Spending time on what you are really interested | 1 (11.1) |
| - No | 3 (33.3) |

ADHD = attention deficit hyperactivity disorder

## Discussion

The present study aimed to identify patient's perception, impact of ADHD, attitude to treatment, and resilience in Thai adult ADHD. The authors found the diagnosis of ADHD caused wide range of psychological reactions from feeling relief to mixed feeling that was unable to explain. Difficulties in academic performance and emotional control were commonly recognized by adult ADHD patients. Interestingly, 44% of the subjects reported history of suicidal idea and attempt, which probably reflected their stress and negative experience. Moreover, sleep problems were also common in this population. Regarding resilience, families and friends were described as the key factors contributing to patients' coping with ADHD. Interestingly, most subjects (67%) were able to find some benefits of having ADHD such as being full of energy and creativity.

Inattentiveness is an ADHD symptom that commonly persists to adulthood[4,8,23,24]. Attention directly associates with academic performance. Unsurprisingly, academic impairment, especially at high-level, was commonly mentioned by the adult ADHD. However, Gjervan et al reported that the relationship between ADHD inattentiveness and occupational outcome was mediated by both role-emotion function and social function[25]. In fact, there were complex relationships between ADHD symptoms and several areas of impairment. Symptom reduction alone may not be enough to improve the patient's quality of life.

Several studies reported the relationship between ADHD symptoms and suicidality[26-29]. Patros et al found ADHD symptoms both hyperactivity/impulsivity and inattentiveness significantly moderated the relationship between depressed mood and suicidal thoughts and suicide attempts in undergraduate students aged 18 to 24 years. However, ADHD

symptoms did not moderate the relationship between depressed mood and self-harm and need for medical attention[26]. In addition, Taylor et al reported the relationship between ADHD symptomatology and self-harm, suicidal ideation, and suicidal behaviors in adult ADHD aged 18 to 65 years. Psychosocial factors such as psychiatric comorbidity and emotion-focused coping style mediated these association[27]. Moreover, Ruchkin et al studied juvenile delinquents in Russia and found ADHD diagnosis was associated with an increased risk for both suicidal ideation and suicide attempts[28]. The present study found 44% of subjects reported history of suicidal ideation. The increasing suicidality in adult ADHD probably reflected their coping to stress and negative experience. However, comorbid conditions such as mood disorders and alcohol/drug dependence may contribute to this association.

Interestingly, the present study found 67% of subjects were able to find some benefits of having ADHD such as being full of energy and creativity. These perceptions regarding positive part of ADHD may reflect their coping to ADHD or resilience. However, they may not reflect the patients' outcome or function improvement. Some studies reported the tendency of the patients with ADHD to have unrealistically positive self-evaluations and exaggerated optimism about the future[12,13,30]. This tendency has been called the positive illusory bias or positively biased self-perceptions. The positive perceptions regarding ADHD that were found in this present study may be a part of the positive illusory bias. On the other hand, they probably reflected patients' useful and realistic perceptions of ADHD. Further study needs to prove the association between these positive perceptions and functional recovery.

The present study was the first study described patient's perception, impact of ADHD, attitude to treatment, and resilience in Thai adult ADHD population. Thailand has many cultural aspects that are different from western countries. For example, some patients reported that Buddhism, especially mindfulness practice, help coping with ADHD symptoms. In fact, the present study reported a perspective from Asian country. In addition, the interviews performed by two interviewers who discussed and finalized the consensus regarding each interview may reduce personal bias. However, the present study had some limitations. Firstly, a small study population provided only preliminary data as a pilot study. Further study with large sample size is needed for confirmation of these findings. In the present study, the authors contacted the subjects during office hours only and the contact telephone numbers might not have been updated. As a result, we were unable to contact 21 of 30 randomized subjects. Secondly, Ramathibodi Hospital is a tertiary care hospital in Bangkok, the capital of Thailand, so, the findings from the present study may not apply to the general Thai population. Finally, the present study relied on subjective data from telephone in-depth interview. However, further study using objective data from rating scales may improve reliability of the study.

## Conclusion

Although the authors know that ADHD causes many negative consequences to patient's life, less is known regarding patient's perception, impact of ADHD, attitude to treatment, and resilience in adult ADHD, especially in Thai population. The present study found the diagnosis of ADHD caused a variety of psychological reactions. However, most patients developed coping strategies and were able to find some benefits of having ADHD. Clinicians should consider working to build up resilience and positive, realistic, and useful perception regarding ADHD that may cause better adherence to treatment and improve patients' quality of life.

## What is already known on this topic?

ADHD is a neurodevelopmental disorder that has recently been considered as an across lifespan condition. Beginning from early childhood, ADHD continuously impacts individual life in many ways until adulthood. Several negative consequences such as academic failure and interpersonal problems have been reported in adult ADHD. However, less is known regarding patient's perception, attitude to treatment, and resilience in adult ADHD, especially in Thai population.

## What this study adds?

In Thai adult population, the diagnosis of ADHD caused a wide range of psychological reactions from feeling relief to mixed feeling that was unable to explain. History of suicidal ideation and sleep problems have been found in 44% of subjects. Regarding resilience, families and friends were described as the most important factors contributing to patients' coping with ADHD. Interestingly, 67% of subjects were able to find some benefits of having ADHD, such as being full of energy and creativity. Moreover, because Thailand is culturally different from western countries, some coping strategies such as Buddhism's mindfulness practice were reported in Thai adult ADHD.

## Potential conflicts of interest

The authors declare no conflict of interest.

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