Understanding and Management of Attention Deficit Hyperactivity Disorder: Psychological Case Study

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Abstract

This case study examines the importance of psychological assessment and interventions to handle impulsivity and inattention behavior of 8 years old boy. Case study finds are based on clinical interview, family sessions, teachers recommendation plans, psychological assessment, and individual intervention plans. The child attended the sessions for 12 weeks. The interventions have a significant effect on the behavior outcome and family understanding about the child, emotional, cognitive and social issues. Child behavior was significantly improved in the classroom by engaging in activities and providing positive verbal support and appreciation by teachers. Study shows the significant importance of psychological management to manage childhood problems. The early detection of issues and management can help the children to learn effectively in school and society. The implications of the study are important for healthy development and early childhood education.

Keywords*:* Attention deficit hyperactive disorder, psychological intervention, assessment, management.

Introduction

A psychotherapy case report is a piece of research that makes a contribution, however modest, to current psychological knowledge. The case study methodology is a set of principles for deriving clinically useful or socially relevant knowledge from the material of cases. Historically, case study research has been marginalized in psychology and been overshadowed by quantitative methods relying on group comparisons of scores on specific variables. Yet without a case-based strategy of research, it is not possible to derive meaningful principles on which to base everyday practice (Edwards, Dattilio& Bromley, 2004). Case studies are in-depth investigations of a single person, group, event or community. Typically, data are gathered from a variety of sources and by using several different methods like observation and interview and therapy intervention (Gulsecen 2006). Mcleods (2016) reported that case studies are often conducted in clinical medicine and involve collecting and reporting descriptive information about a particular person or specific environment, such as a school. In psychology, case studies are often confined to the study of a particular individual (Bromley, 1998).

Attention-deficit/hyperactivity disorder (ADHD), a behavioral disorder characterized by functional impairments in the areas of impulsivity, hyperactivity, and/or inattention, is one of the most frequently identified psychological disorders of school-age children and adolescents (Langberg, Froehlich, Loren, Martin, & Epstein, 2008). Current prevalence estimates suggest that as many as 3% – 7% of children in the United States evidence clinically significant symptoms of the disorder (Stein et al., 2009). ADHD is widely regarded as a chronic and biologically based disorder characterized by specific deficits in executive functioning that persist into adulthood (Barkley, 2006). Youth with ADHD are at greater risk for the development of co-morbid psychiatric problems, including conduct problems, substance abuse, and mood disorders, and are also likely to evidence significant difficulties in the areas of academic performance and interpersonal skills (American Academy of Child and Adolescent Psychiatry, 2007).

Attention Deficit Hyperactivity Disorder (ADHD) is not a disease or the result of damage to the brain but it a dysfunction that means the brain doesn't function in the way it should. The exact cause is not clear.

ADHD symptoms include trouble paying attention, trouble sitting still for even a short time and acting before thinking. (Christina 2015)Attention Deficit Disorders require an in-depth examination of a child's medical, social, and family history (Diamond et al, 1996). Difficult behaviors and academic concerns may develop secondary to medical problems, language delays, learning disabilities, delayed cognition, and mood disorders. These issues must be explored to create a comprehensive diagnostic and treatment plan. (Jon, 2014)

A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by (1) and/or (2): 1. Inattention: Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities. Diagnostic Statistical Manual, DSM V, (2013) included the symptoms of hyperactivity, impulsivity, and inattention with criteria of (0= Not a problem), (1= Mild problem), (2= Severe problem).

DSM-V diagnostic criteria for ADHD: symptoms of inattention, hyperactivity and impulsivity

Symptoms of inattention	Symptoms of hyperactivity and impulsivity
Often fails to give close attention to detail or makes mistakes	Often fidgets with or taps hands and feet, or squirms in seat
Often has difficulty sustaining attention in tasks or activities	Often leaves seat in situations when remaining seated is expected
Often does not seem to listen when spoken to directly	Often runs and climbs in situations where it is inappropriate (in adolescents or adults, may be limited to feeling restless)
Often does not follow through on instructions and fails to finish schoolwork or workplace duties	Often unable to play or engage in leisure activities quietly
Often has difficulty organizing tasks and activities	Is often 'on the go', acting as if 'driven by a motor'
Often avoids, dislikes or is reluctant to engage in tasks that require sustained mental effort	Often talks excessively
Often loses things necessary for tasks or activities	Often blurts out answers before a question has been completed
Is easily distracted by extraneous stimuli	Often has difficulty waiting their turn
Is often forgetful in daily activities	Often interrupts or intrudes on others

(DSM V 2013)

The exact etiology of ADHD is unknown, but it is thought to be caused by the combination of environmental, genetic, and biological factors. (Stein et al, 2013)

Objectives:

1. To assess the behavior's problems
2. To evaluate therapeutic management
3. To increase family involvement in the management plan

Methodology:

This research case study is based on a single case study including clinical assessment, family, and teachers reports and engagement in therapeutic plans for 12 weeks, 1/session per week. The client was assessed by multiple sources:

The client was assessed through the following psychological methods:

1- Clinical interview
2- Family information
3- School reports

Psychological assessment tools:

1-IQ assessment Test, P-Toni
2-Thematic Appreciation Test
3-Human Figure drawing test
4- ADHD scale

The client was assessed during the first week of January 2019, after three weeks of assessment Client received psychological sessions for 12 weeks, 1/per week of 50 minutes, based on psychological interventions behavior modification, and encouragement to participate in social engagement. Psychological interventions also included, token economy, play therapy, expressive art activities, home-based appreciation and reinforcement for positive behavior, school-based engagement and performance with reinforcement of positive appraisal from teachers, reducing the time of gadgets use by increasing more time to play outside with family members. The client has been assessed three-time pre, follow up and post-assessment by administering the checklist of inattention and impulsivity scale of (10=item) based on ADHD scale. The item on the behavior checklist scale was rated on 5 points Likert scale, Never=0, sometime=1, most of the time=2, frequently=3, and always=4. Pre-assessment was done after the overall assessment procedure of diagnosing, follow up assessment was completed after 6 weeks of intervention and then after 12 weeks, the post-assessment was completed. The pre and post results analysis proved the effectiveness of therapeutic interventions.

Procedure:

Referral source: Client was referred for assessment and management by the general physician in the 1st week of January 2019**.**

Informed Consent: Informed consent was obtained from the parents and the child for psychological assessment and interventions. Parents were informed about the therapeutic plans to improve the child's behavior. Parental and child permission was taken for the case study publication without including any of their personal information. Parents were informed that no personal information will be revealed in the case study.

Relevant Background Information: Parents informed that child's problems were significantly effecting for the last 4 years. Parents reported that the early millstones were normal, expect delayed speaking, and he started speaking at the age of 5 years. There were no other specific developmental issues recorded. Presently he is 8 years old, studying in Malaysian Government primary school in level 1 grade. His mother revealed that he has problems focusing on his studies. He did not follow the instruction of his teacher and not cooperate with teachers in any classroom activities. His school performance is declining and he has been labeled as a problematic child in his school. He was repeating the same class the second time. He is eldest among his five siblings, his mother is a school teacher. Both parents are working, so throughout his development, he has a lack of parental support and quality time. He liked to play games. He frequently has fighting behavior with his other siblings. Client behaves most of the time stubborn to get what he wants as compared to other siblings. According to the mother, he has a poor social relationship, as he has difficulty to communicate with other kids. Teacher's Feedback: According to school reports by teachers, he hardly follows instruction. He is inattentive in the classroom activities and spends most the time roaming around and disturb other kids by using their books and pencils. Most of the teachers already declared him a problematic kid.

Current Mental Status/Behavioural Observations: He was cooperative during the assessment. His thought process was occupied with imaginative stories. His mood was pleasant.

Presenting Problem: Disturbed behavior at school, low performance, lack of interest in activities, unable to follow instruction, behavior tantrum problem since last 4 years.

Assessment Test Results

TONI 4 (Test of Nonverbal Intelligence Fourth Edition
Raw Score: 40
Index Score: 126
Percentile Range: 92-98
Descriptive Term: Superior
Age Equivalent: 16-0

GARS 3 (Gilliam Autism Rating Scale Third Edition)
Sum of Scaled Scores: 60
Percentile Range: 50
Autism Index: 100
Severity Level: 2 (Requiring minimal Support)

ADHD (Attention Deficit Hyperactive Disorder Test)
Sum of Score: 40 ADHD Quotient: 117
Degree of severity: Above Average (Inattention (120)
Required special support for Attention

Children Thematic Appreciation Test
Most of the stories were about the Client's imagination and his emotional expressions
He builds a connection with the stories from different pictures cards.
Frequently mentioned feelings dizziness, bleeding, and death. He perceived the feelings of sadness, discomfort, disturbed interaction and relationship among the characteries of the stories based on picture cards.
Client stated about the ghost, the zombie in a few picture cards.
Never mention the happy and comfortables feeling or thoughts about any picture card

Current Diagnostic Impression:

Inattention issues, difficulty to express emotional response and cognitive style are distorted and having Autisms symptoms with needed substantial Support. His Intellectual capacities are above average in the range of intelligence. He obtained the severity level of the score on the ADHD scale.
The client is suffering from **Attention Deficit Hyperactivity Disorder**

Results and Discussion:

The therapeutic intervention was based on behaviors, cognitive and social involvement and improvement. Client received face to face therapy sessions 12 weeks, 50 mints 1/session per week.

Table 1One-Sample Test to compare the mean of pre-test, follow and post-test score with 10 variables of behavior scale

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Pre assessment	4.583	9	.001	.70000	.3544	1.0456
Follow up	13.500	9	.000	1.80000	1.4984	2.1016
Post assessment	21.604	9	.000	3.30000	2.9544	3.6456

Table 2

		Psychological Interventions				
Pre Assessment - Psychological Interventions		Behavior modification	Social skills training	Play therapy	Expressive therapy	Total
Pre assessment	Never	1	0	1	1	3
	Sometime	1	2	1	3	7
Total		2	2	2	4	10

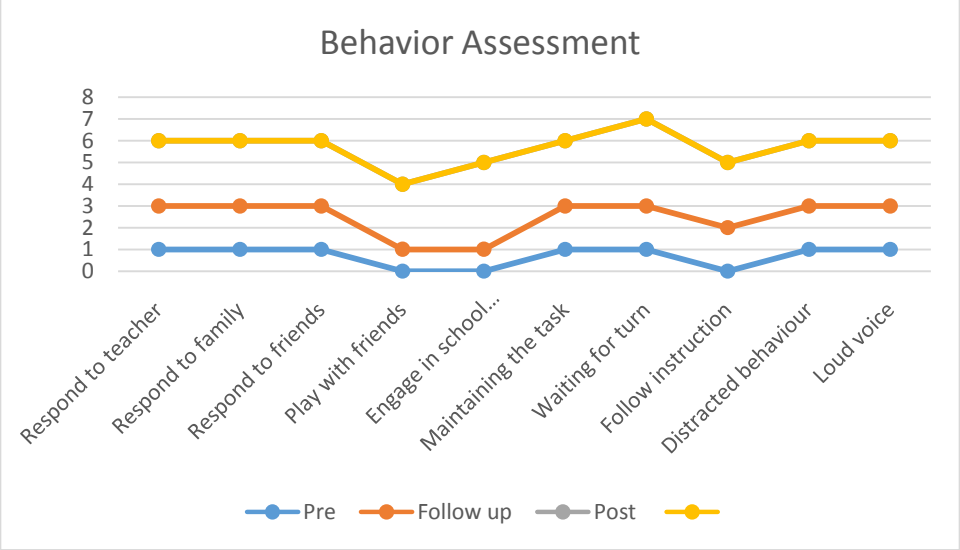
		Psychological Interventions				
Follow up		Behavior modification	Social skills training	Play therapy	Expressive therapy	Total
Follow up	Sometimes	1	0	1	0	2
	Most of the time	1	2	1	4	8
Total		2	2	2	4	10

		Psychological Interventions				
Post assessment		Behavior modification	Social skills training	play therapy	Expressive therapy	Total
Post assessment	Frequently	1	2	2	2	7
	Always	1	0	0	2	3
Total		2	2	2	4	10

Table 3 Psychological Interventions repeated measure

Psychological Interventions	time	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Behaviour modification	1	.500	.382	-.434	1.434
	2	1.500	.289	.794	2.206
	3	3.500	.354	2.635	4.365
Social skills training	1	1.000	.382	.066	1.934
	2	2.000	.289	1.294	2.706
	3	3.000	.354	2.135	3.865
Play therapy	1	.500	.382	-.434	1.434
	2	1.500	.289	.794	2.206
	3	3.000	.354	2.135	3.865
Expressive therapy	1	.750	.270	.089	1.411
	2	2.000	.204	1.501	2.499
	3	3.500	.250	2.888	4.112

Figure 1



Results revealed that the individual and family-based intervention highlighted the improvement in the Client's behavior to increase social conversation in a friendly manner. Client received individual therapy session based on activities expressive art, play, fixable toys, puzzle games, had toys, making stories from pictures and sharing about his daily activities in each therapy session. The sessions were based on behavior modification, social skills training, play therapy, and expressive therapy interventions. Table 1 results indicated that there was a significant mean difference (mean=4.583) pre-assessment, follow up (mean=13.500) and post-assessment (mean=21.604)

Table 2 indicated that there was a significant difference of results in scale from never to some time score in pre-assessment, and follow up indicated that there was reported score on some time to most of the time, and post-assessment indicated that the client score on behavior checklist was most reported on frequently to always. The client has positive changes in the checklist of behavior domains on the checklist as compare to pre-assessment, follow up assessment and post-assessment. Table 3 and figure 1, reported that the intervention significantly increased the score on the behavior checklist domains, which shows that the client have reported positive changes in the behavior of involvement with family and friends. The client has reported positive engagement in classroom activities and play activities with other peers. Behaviour related to the task, like managing the task, waiting for a turn, following instruction, reduced distracted behavior and loud voices behavior. There is a wide range of therapies which fall under the term "behavioral interventions" (Cognitive Behavioural Therapy, Meta Cognitive Therapy, Psychosocial Therapy, Organizational Skill Training, and Multimodal Psychosocial Treatment), (Robb, 2017). This review, however, does not individually explore the efficacy of the different interventions, rather, the different behavior interventions were reviewed under the heading of "Behavioural Interventions". There were very few studies looking into the effect of CBT (Cognitive Behaviour Therapy) in un-medicated ADHD patients (Solanto et al, 2010).

Follow up with the client family and teachers to record the progress report, and involvement of teachers and parents improved clients functioning academically and socially. Therapeutic processes such as developing a strong working alliance and engaging parents and students are key elements of treatment delivery and receipt in school-based mental health programming and should be explicitly trained and monitored. (Breaux et al, 2018) Parents and teacher were recommended to follow the behavior intervention to increase the better behavior outcome. Education to parents was provided in begging of interventions, as understanding the problem is better in management (Gureasko et al, 2006). Education of family about ADHD should include an explanation of the symptoms of the disorder and how it can affect learning, behavior, social skills and family functioning. Better understanding enhanced Client level of self-esteem, as the family and teacher handle the problem in positive ay rather than labeling the behavior problems.

These findings support clinical practice guidelines and suggest that parenting interventions are effective. There is a need to ensure the availability of parenting interventions in community settings (Coates et al, 2015). Parental and teachers involvement helped to improve and keep follow up for good progress. Parents and teachers were very cooperative to increase the positive behavior of the client.

Cognitive level or thinking skills, Language abilities, and Age-appropriate skills needed to complete daily activities. (National Institute of Mental Health 2017) Psychological intervention includes using token economy systems to motivate a child to achieve a goal identified in a behavioral contract (Barkley, 2015). A child can earn points for each homework assignment completed on time (Owens et al 2012). In some cases, students also lose points for each homework assignment not completed on time. After earning a specified number of points, the student receives a tangible reward, such as extra time on a computer or a "free" period on Friday afternoon. (McLeod, 2016)

Behavior therapy requires both time and effort, but it can lead to improved functioning at home, at school, and socially (CDC, 2016). American Association of Psychology (2011) defines "behavior therapy" as follows: Behaviour therapy represents a broad set of specific interventions that have a common goal of modifying the physical and social environment to alter or change behavior. Although behavior therapy shares a set of principles, individual programs introduce different techniques and strategies to achieve the same ends. Psychological sessions enhanced sitting behavior, social greeting, and task accomplishment through engaging the client in social interaction and playing with siblings during the sessions. Behavior therapy helps children learn to better control their own behavior, which leads to improved functioning at school, home, and relationships (CDC, 2016). Although learning and practicing new behaviors requires time and effort, it has lasting benefits for children. Research suggests the benefits of psychological interventions reliant on skill-building and conditioning, academic organization and planning skills development, social skills training. During the therapy sessions, Client established behavioral or academic goals. The client was facilitated to choose different activities to participate like coloring, drawing, using clay to make different objects to express his skills. With family and teacher, the therapist chooses several target situations and breakdown the situation (task) into smaller units. Tokens (points, stickers) provided immediately.

Follow-up**:** Every week client attended the session based on different behavioral, cognitive and social activities. Client's family and teacher were contacted regularly after two weeks to follow up on the improvement reports. Client's family and teacher followed the recommendations and actively participated in intervention for the improvement of child behavior and performance at home and school.

Treatment Outcome**:** Therapeutic interventions positively changed the child behavior problems an inattention from severe to moderate problems within 12 weeks. Clients received positive feedback from school and healthy encouragement from parents.

Discussion and Implications:

ADHD is a multifaceted, behavioral and neurological disorder that is associated with deficits in multiple areas of functioning. Psychological behavioral strategies are effective in decreasing ADHD symptoms over the long term. Empirical studies of psychological interventions have supported the efficacy of two major approaches: behavioral (both antecedent-based and consequent-based) and academic interventions. Furthermore, some promising interventions for addressing social relationship difficulties among students with this disorder have been developed. Parental involvement and education are highly significant in the management of ADHD symptoms. School-based professionals are urged to implement empirically supported strategies through individualizing interventions based on assessment. Furthermore, a long-term approach to treatment across school years will necessitate ongoing, consistent communication among parents, teachers, physicians, and other health professionals. Through the long-term implementation of evidence-based strategies, it is hoped that the deficits characteristic of ADHD will be minimized and the likelihood of school success for these students will be optimized.

Recommendations:

Need supportive interventions to work on ADHD symptoms in the school system. Further researches are required to increase the efficacy of the psychological intervention. Need to highlight the individual teaching plan in classroom activities with support and behavior modification techniques.

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