THE RELATIONSHIP BETWEEN ATTENTION DEFICIT HYPERACTIVITY DISORDER AND TEST ANXIETY AMONG ADOLESCENTS IN MIDDLE SCHOOLS IN ARAB SOCIETY IN ISRAEL

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Abstract: *Attention Deficit Hyperactivity Disorder (ADHD) is a common neuro-psychiatric disorder that begins in childhood, when its symptoms generally appear in the first years of schooling. ADHD is characterized by inattention, distractibility, impulsiveness, and hyperactivity, influencing children and adolescents of school age. This research study addresses the examination of the relationship between ADHD and test anxiety among students with ADHD in Arab society in Israel. Different research studies indicate the relationship between test anxiety and ADHD and show that students with ADHD display higher test anxiety than do students without ADHD. This research study contributes to teachers and other role-holders in the school in the understanding of the implications of test anxiety on students with ADHD and provides an opportunity to research in-depth the influence of test anxiety on the level of ADHD. Furthermore, the insights of the present research study will serve the different role-holders in the school, and especially the educational counselors who will use it as a basis for the building of intervention programs to treat test anxiety in the school among students in general and students with ADHD in particular.*

Keywords: *ADHD, test anxiety, Arab society, adolescents*

Introduction

Adolescents experience different changes during adolescence. These changes influence different aspects among the adolescents, when one of these aspects is the degree of stress they experience in this period. Research studies show that different pressures increase among adolescents and influence their manner of conduct and their responses, which sometimes are expressed in different complaints, especially various anxieties. While other research studies show that a significant proportion of adolescents suffer from attention and concentration problems and hyperactivity, this may influence the formation of various behaviors among them and influence their anxiety levels, namely test anxiety.

Test anxiety is defined as an emotional and physical response to an unfamiliar threat or unidentified danger. The anxiety may be expressed in a feeling of discomfort, in a feeling of lack of stability or physical symptoms, such as shortness of breath, a feeling of suffocation, and dizziness (Ravhon-Demati & Ben Shalom, 2016). Attention Deficit Hyperactivity Disorder (ADHD) is a common neuro-psychiatric disorder that begins in childhood and its symptoms appear generally in the first years of schooling. ADHD is characterized by inattention, lack of attentiveness, impulsiveness, and hyperactivity, influencing children and adolescents of school age (Ayaz, 2018).

Different research studies have addressed the system of relationships between ADHD and test anxiety and the influence of test anxiety on students with ADHD. The research of Canu, Elizondo, and Broman-Fulks (2017) examined the dimension of test anxiety in mathematics and the functioning of students with ADHD as opposed to regular students and found that students with ADHD suffered from deficient functioning in mathematics and exhibited higher test anxiety than did regular students. It was further found that students with ADHD experienced a higher anxiety in mathematics and negative influences after the completion of the task in mathematics as opposed to those their age without ADHD.

One of the research studies that addressed this issue in Arab society in Israel was the research work of Zubeidat, Dallasheh, Fernández-Parra, Sierra, and Salinas (2018). The research study presented seven common factors of first order problematic behaviors among

boys and girls: anxiety/depression, somatic complaints, delinquent behavior, aggressive behavior, attention problems, cognitive problems, and relationship problems. The innovation in the present research study that was based on the data of different research works carried out in the Western states focuses on the lack of the holding of research studies of this type in Arab society in Israel, and thus the present research study is an innovative research work that examines this system of relationships between test anxiety and ADHD among students in Arab society in Israel. Its uniqueness is that it is a first research in this issue.

The rationale of the present research study is an exploratory epidemiological research in Arab society in the population of adolescents, a topic that has barely been investigated in Arab society previously. Therefore, this research study examines and maps behavioral, psychological, emotional, and cognitive problems in the period of adolescence among Arab adolescents in Israel and presents profound insights into the system of relationships between test anxiety and ADHD among adolescents in Arab society in Israel. Therefore, the research of the topic among Arab adolescents may reveal different aspects about the phenomenon of ADHD and test anxiety among them.

Test Anxiety

It is possible to define anxiety as a subjective feeling of fear or threat against the present or future that is accompanied by a number of autonomous signs and somatic symptoms such as heartbeats, perspiration, and shaking. When this situation is expressed during a test, it is called test anxiety or exam anxiety (Patil & Aithala, 2017). Test anxiety is perceived by most of the researchers as having a stratified structure that has a cognitive component and an emotional component. The cognitive component is expressed in the fear of possible failure, while the affective component is reflected in the increase of the activity of the autonomous nervous system, in perspiration, in stomachaches, in increased heartbeat, in weakness, and in other symptoms (Yaffe & Nazari, 2016).

Test anxiety is a specific situational (state) anxiety that arises in situations of assessment and examination, especially among people who have high trait anxiety. Test anxiety belongs to a broader group of problems that are characterized by feelings of

anxiety, problems that in their most severe form can be diagnosed as psychological disorders (Ravhon-Demati & Ben Shalom, 2016).

Ringeisen and Raufelder (2015) address the constellation of symptoms that characterize test anxiety, which are divided into four types:

1. The physical symptoms that derive from the relationship between what occurs in the body and the situation of anxiety and include stomachaches, nausea, diarrhea, headaches, dizziness, accelerated pulse, perspiration, pressure in the chest, etc.
2. The behavioral symptoms address the increased influence of anxiety on the learning habits and test behavior. Harm to the learning practices includes exaggerated and obsessive learning, avoidance of learning, postponement of the work and homework, giving up on tests, and neglect of continuous learning.
3. The emotional symptoms are expressed in emotions of fear, distress, tension, unquiet, increased worry, and frustration – before and during the test.
4. The cognitive symptoms include the phenomenon of blacking out, difficulty in remembering the material, difficulty in understanding what is required in the exam, difficulty in organizing the material, and difficulty in expressing the knowledge in a clear and understandable way

The classification of the different factors following which test anxiety is created is described in the research of Cassady and Finch (2014). They note that test anxiety is linked to different factors, such as fear of failure, situations of stress, mistaken negative thoughts, and additional background factors that harm the learning and performance and include personality, family, social, emotional, cognitive, physiological, and behavioral variables.

Similarly, Ravhon-Demati and Ben Shalom (2016) maintain that test anxiety is caused due to the following factors:

1. Family factors: The parents pose for the child requirements and expect achievements, but the child does not meet them.
2. Behavioral factors: The student receives a low score relative to his expectations or the environment's expectations and is punished explicitly or implicitly.

3. Personality factors: The student has low self-esteem, low self-confidence, and tendency to worry.
4. Cognitive factors: These are expressed in low ability, learning disabilities, ineffective recall strategies, difficulty with organization, mistaken time estimation, and difficulties with attention and concentration.
5. Developmental factors: These factors are connected to the stress and load that the student experiences in his surroundings, such as the family home, the school, or the immediate environment.

The research literature mentions various intervention programs aimed at reducing test anxiety. These programs focus on three aspects: affective-physiological, cognitive, and behavioral. Accordingly, Zeidner (2014) classifies the methods of intervention accepted in test anxiety into three main categories: emotion-aimed interventions, interventions focused on the cognitive aspect, and interventions directed at learning skills. The purpose of emotion-directed treatments is to reduce the emotional arousal that appears in the presence of any situation of evaluation, and most rely on behavioral learning principles. Cognitive interventions in test anxiety are intended to reshape the erroneous fundamental assumptions and negative and dysfunctional approaches that are at the basis of the non-adaptive thinking in the student who suffers from the phenomenon. Cognitive approaches were proved to be effective in dealing with different internal disorders, especially affective disorders and anxieties among children and adolescents (Yaffe & Nazari, 2016).

Attention Deficit Hyperactivity Disorder (ADHD)

Attention Deficit Hyperactive Disorders (ADHD) is a common neuro-psychiatric disorder that begins in childhood and its symptoms appear generally in the first years of schooling. ADHD is characterized by inattention, lack of attentiveness, impulsiveness, and hyperactivity, influencing children and adolescents of school age (Ayaz, 2018). This disorder influences the child's developmental stage and may lead to scholastic, behavioral, and social problems in the areas of the school, the family, and the relations with the peer group (Shriki, Weiser, Polk, Weiss, Rizo, & Gross-Tzur, 2010).

Attention Deficit Hyperactivity Disorder is expressed in broad learning and social contexts according to the developmental stage and framework of belonging of the child or the adolescent. The diagnosis occurs for the most part when the individual is of school age, and in most cases this disorder continues also through adulthood. Attention Deficit Disorder (ADD) is characterized by short spans of attention and concertation, behaviors of dreaming and drifting, and high sensitivity to stimuli, which cause multiple distractions. These children suffer from disruptions in thinking and ability to decide, find it difficult to acquire learning and social skills, and are characterized by attention problems and impulsiveness but not hyperactivity (Goth-Owens, Martinez-Torteya, Martel, & Nigg, 2010).

The prominent characteristics of this disorder are: impulsiveness, attention difficulties, and hyperactivity. The impulsiveness is expressed in hastiness, lack of attention to small details, speaking before thinking, difficulty with processing information and expressing knowledge. The difficulties with attention and concentration are expressed in the difficulty with concentrating over time and filtering stimuli or alternatively with excessive concentration, which is the difficulty with paying attention to things that are not at the center of the attention. The hyperactivity is expressed in unquiet and excessive movements. Because of its different characteristics, ADHD is expressed differently in each and every person (Purper-Ouakil, Ramoz, Lepagnol-Bestel, Gorwood, & Simonneau, 2011).

ADHD was found to be related to different factors. Uchida, Spencer, Faraone, and Biederman (2018) noted that ADHD among boys and girls is associated with family factors, psychiatric factors that include, among others, moods, anxieties, and functional deficiencies. One of the family factors is linked to the period of pregnancy, in which the mother needs to protect herself from diseases and the like. One of the symptoms causing the risk of ADHD is smoking among pregnant mothers, which is found to be a major cause of ADHD.

The theoretical and research literature reports different methods of therapy of children with ADHD, such as medical, behavioral, cognitive-behavioral, family, and art therapies. Since ADHD was found to be associated with the brain imbalance of neurotransmitters and in particular dopamine and norepinephrine, stimulant drugs and

especially Methylphenidate (Ritalin) are one of the primary treatment approaches offered to people with ADHD in order to preserve the brain balance (Shmueli & Gross, 2005). The behavioral therapy addresses the fact that many children who suffer from ADHD are lacking in skills in a number of executive areas (McConaughy, Volpe, Antshel, Gordon, & Eiraldi, 2011). Cognitive-behavioral therapy focuses on the way in which the child interprets his experiences and the way in which these thoughts influence in the end his behavior and emotions. This intervention in the school environment provides a work setting for the development of skills of coping and strategies that can prevent the awakening of future problems (Allen, 2011). „ CBT can also be used in children, but:It is recommended to adapt CBT in children and adolescents to in terms of the pace of application. Limitations must be taken into account, with regard to the development of metacognitions, as well as the famous clumsiness in emotion labelling. The consultant should be more active and use more behavioral techniques than the approach to adults. Young people who fall into the targeted counselling group often suffer from deficits in social and interpersonal skills solving problems conditioned by the level of development which the consultant must consider. Their coping strategies are ineffective. Training in social skills has its reasonable place as part of the multimodal model for achieving positive change. It is recommended to operant techniques are used to reward prosocial behavior and discourages antisocial behavior.“ (Krasteva-Ivanova M, 2021)

It is important that these techniques are supplemented with instructions, discussions, strategies for modeling, rehearsals of models of behavior that performs the role of effective feedback. Family therapy, as noted by Katzanelson and Brant (2017), was found to be of equal or greater effectiveness in comparison to individualized psychodynamic therapy of the child, especially in cases of coping with emotional problems and problems in the reciprocal relationships with the family members. The objectives of family therapy are the reduction of the intensities of the symptoms (expression of needs related to the disorder, expression of family problems, expression of behavioral problems), easing of the general mood, and the inculcation of practices of communication suitable to problem solving.

Relationship between Test Anxiety and ADHD

Students with ADHD display symptoms of anxiety in various situations, all the more so during a test. Jarrett (2016) examined different dimensions among students with ADHD, such as anxiety symptoms and functioning in the framework of the job or the studies, and focused on the examination of the influence of the disorder and the anxiety on the functioning and performance among students with ADHD. The research findings indicated that functioning and deficient performance in the framework of the studies were found associated to be with lack of attention, ADHD, and anxiety. The findings indicated also that students with ADHD and anxiety exhibited greater deficiencies in the self-regulation of emotion and self-organization / problem solving in comparison to students with only ADHD or only anxiety. Students with ADHD displayed greater deficiencies in self-motivation and self-restraint as opposed to students with anxiety. It appears that those who suffer from ADHD exhibit greater difficulties with self-restraint of the emotion and self-organization / problem solving, an area that appears to overlap significantly with the working memory.

The functioning and cognitive performance in different tasks among students with ADHD were found to be associated with different levels of anxiety and behavior disorders, thus influencing their performances in different areas and their performances during tests (Ter-Stepanian, Grizenko, Cornish, Talwar, Mbekou, Schmitz, & Joober, 2017). Anxiety was also found to be linked to different mental and emotional symptoms that influence academic performances, in particular during tests, according to Bashir, Albadaway, and Cumber (2019), who examined different situations of anxiety and their impact on their level of depression and wellbeing and their academic performances. The research findings showed that relationships were found between depression and test anxiety. It was also found that the level of education, the student's sex, and the performances are significant predicts of situations of test anxiety.

The research study of Nelson, Lindstrom, and Foels (2014) examined test anxiety among students with and without ADHD. The findings show that, relative to students without ADHD, students with ADHD reported higher test anxiety as well as specific aspects of test anxiety, cognitive and emotional aspects (worry and hypersensitivity), which were higher among students with ADHD than among students without ADHD. It was also found that higher symptoms of worry were found among girls than among boys without and without ADHD.

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