

Teachers' Knowledge and Perceptions on ADHD and Overexcitabilities in Gifted Learners

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Abstract

The purpose of this study is to examine Jordanian teachers' knowledge and perceptions on overexcitability, and attention deficit hyperactivity disorder (ADHD) in gifted students. Twelve semi-structured in-depth interviews were conducted with secondary classroom teachers including one school counselor. The study was conducted at an independent co-educational secondary school for gifted and talented students in Jordan. The interviews explored issues related to the conceptions and characteristics of giftedness, ADHD and overexcitability, and the overlap between ADHD and overexcitability in gifted learners. The findings of the study are discussed and reported.

Keywords: Gifted; Overexcitabilities; ADHD; Teachers' Knowledge; Perceptions; Misconceptions; Psychomotor; imaginal; sensual; emotional; intellectual.

Introduction

Gifted students are sometimes extremely energetic, have a highly sensitive and emotional temperament and lifelike imaginations (Al-Hroub, 2007; 2010; 2018; Silverman 1993). Some students can display behavioral characteristics similar to those exhibited by children and adolescents who have been diagnosed with attention-deficit hyperactivity disorder (ADHD), leading to a possible misdiagnosis (Rinn & Reynolds, 2012). When a gifted individual is assessed for ADHD, his or her tendency to be overly excited should also be considered. It is difficult to discriminate a gifted child's overexcitability (OE) from ADHD symptoms (Kyuman Chae, Kim & Noh, 2003). Literature indicates a significant overlap between the symptoms of ADHD and overexcitability among gifted students (Rinn & Reynolds, 2012); however, little research has been conducted on this topic. Such research is limited in the Middle East, rendering it vital to study this issue in an Arab country such as Jordan. Below, we will review literature related to ADHD and overexcitability in gifted learners.

The Gifted and ADHD

Literature represents the analogous behaviors associated with both gifted students and students with attention deficit hyperactivity disorder (ADHD) (Baum, Olenchak & Owen, 1998; Hartnett et al., 2004; Rinn & Nelson, 2009; Webb, 2016). Baum et al. (1998) outlined a variety of perspectives from which to consider and interpret the behaviors of gifted students with ADHD. Hartnett et al. (2004) explained that children who are gifted and children with ADHD are frequently engaged in similar behaviors. Edwards (2009) explained that some gifted children are misdiagnosed with ADHD because giftedness and ADHD share similar characteristics. Rinn and Nelson (2009) found that due to the lack of pre-service training, several practitioners are unable to distinguish between giftedness and ADHD. Webb et al. (2016) characterized the analogous behaviors associated with both gifted students and students with ADHD that lead to confusion between different types of ADHD and giftedness whereby some of them overlap (See Table 1).

The Confusion of Overexcitability and ADHD in gifted learners

The concept of overexcitability branches from Dabrowski's (1964) theory of positive disintegration, which is a theory of personality development. Dabrowski used the term "overexcitability" to emphasize the intensification of mental activity as well as the differential types of responding,

experiencing, and acting distinguishable as characteristic forms of expression beyond the norm (Piechowski, 1986; Piechowski & Colangelo, 1984). In fact, when many of the characteristics and behaviors of gifted students mirror those of special education students, multiple instances where misdiagnosis occurs have been observed. It is possible that gifted students will have more than one type of overexcitability; if not many (Alias, Rahman & Rosadah, 2013). Dabrowski's theory states five different forms of overexcitability: psychomotor, sensual, imaginal, intellectual, and emotional (Piechowski, 1975, 1977). **Individuals with psychomotor overexcitability** appear very busy and restless. Signs of psychomotor can be either extreme energy or nervousness. Nervousness can be noticed when observing an individual act impulsively or display a psychomotor activity such as nail biting or spasms (Mendaglio & Tillier, 2006). **Individuals with sensual** overexcitability may have extreme reactions and may be described as picky eaters who hate certain foods with a passion. Such individuals also love to be the center of attention (Daniels & Piechowski, 2009). **Individuals with intellectual overexcitability** have a drive for probing questions and problem-solving. They seek out truth and knowledge and are very observant. When upset, such individuals may analyze things in-depth (Daniels & Piechowski, 2009). **Individuals with imaginal overexcitability** experience regular diversion, drifting attention, and fantasizing. These occur because of free play of the imagination (Mendaglio & Tillier, 2006). Such individuals are creative and love metaphors. They believe in pictures and magic and have a capacity for living in a world of fantasy (Daniels & Piechowski, 2009). Gifted individuals with imaginal OE often conduct their activities on their own (e.g., drawing or writing stories) rather than participate in class discussions (Lind, 2001). **Individuals with emotional overexcitability** have a strong capacity for building relationships. They may experience an extreme and broad range of emotions; they can be compassionate and caring, form strong attachments to others, be sensitive to and understand others as if they are living the experience. They may have concerns about death, love, loneliness, and care deeply about others (Daniels & Piechowski, 2009). Emotional OE is the most frequently observed form of overexcitability in individuals. Such individuals experience anxieties, fears, feelings of guilt and desperate tempers (Mendaglio & Tillier, 2006).

Table 1: Behaviors associated with ADHD and giftedness

Types	Behaviors associated with ADHD	Behaviors associated with Giftedness
Hyperactivity	More active, restless than normal children	High activity level; may need less sleep
Inattention	Poorly sustained attention in almost all situations	Poor attention, boredom, daydreaming in specific situations
Impulsivity	Impulsivity, poor ability to delay gratification	Judgment lags behind intellect

Webb (2016, p.45)

Signs of high psychomotor, intellectual, and emotional overexcitabilities in gifted students might lead to a misdiagnosis of ADHD and other behavioral disorders (Kyuman-Chae, Kim & Noh, 2003). Gifted students with ADHD may demonstrate behaviors such as daydreaming, excessive talking, the inability to be seated, and social immaturity; all prospective features of the diverse signs of overexcitability (Tieso, 2009). According to Hartnett and her colleagues (2004), "Both groups often possess high activity levels, have difficulty paying attention, act without much forethought, experience problems persisting on certain tasks, and have difficulty following rules" (p. 73).

Therefore, it is critical to differentiate symptoms of ADHD from overexcitability in gifted individuals (Kyuman-Chae et al., 2003).

Nelson, Rinn, and Hartnett (2006) concluded, "No known empirical data exists to examine the relationship between overexcitabilities and ADHD" (p.247). Rinn and Reynolds (2012) provided empirical support for a relationship between ADHD and overexcitabilities for intellectually gifted adolescents from a summer program in the United States. Teachers' perceptions of children with ADHD might vary according to the child's gender (Maniadaki, Sonuga-Barke, & Kakouros, 2003). Teachers' tend to be biased when it comes to diagnosing a

boy or a girl with ADHD, and this might be a result of unexplored knowledge of ADHD (Bauermeister et al. 2007). One of the major findings by Al-Hroub and El Khoury (2018) is that gender plays a role in giftedness in Lebanon, yet very limited research has been done to examine whether gifted students, no matter girls or boys, are misidentified with ADHD and may be instead exhibiting types of OE. Thus, this study aimed to fill a gap in the literature about the teachers' perceptions on the misdiagnosis of gifted Jordanian adolescents with ADHD or overexcitability. It also aims to add to Rinn and Nelson's study (2009) as it investigates the potential for teachers misidentifying gifted students with ADHD.

The current research

The purpose of this study is to investigate Jordanian teachers' ability to identify whether an adolescent gifted student exhibits ADHD or OE symptoms. The research question that guided this study was "What knowledge do teachers in Jordan have about ADHD and overexcitability symptoms in Gifted Students?"

Participants and method

Twelve faculty members including teachers and one counselor from the Jubilee Institute in Jordan were interviewed using open-ended questions. The interviewed teachers taught classes ranging from grades 9 to 12. The researchers randomly chose three teachers from each grade level to participate in the semi-structured interview. Open-ended questions allow participants to answer from different angles, giving them the opportunity to express their thoughts, feelings, and perceptions based on their specific situation (Al-Hroub, 2013, 2014, 2015). The interview was divided into four parts, namely: definitions of giftedness, characteristics of ADHD in gifted adolescents, the definition of OE, and a possible overlap along with any misconceptions between OE and ADHD. The research question "What knowledge do Jordanian teachers have about ADHD and overexcitability symptoms?" was answered in four different parts: (a) how Jubilee school teachers defined the term giftedness; (b) teachers' knowledge of the characteristics of ADHD in gifted adolescents; (c) the definition of overexcitability; and (d) whether teachers thought there was an overlap between OE and ADHD characteristics, in addition to the misconceptions they might have about characteristics of ADHD and/or OE in gifted adolescents.

Study Site

The study was done at the *Jubilee School for Gifted and Talented Students, known as the "Jubilee Institute"* in Jordan. The Jubilee Institute disseminates national and local educational standards through the extension of advanced curricula and training programs for public and private school teachers in Jordan and other Arab countries (Issa, 2013). The teaching staff consists of about 60 teachers, most of them working full time and others working part-time at the school. The teacher/student ratio is 1:6. There are around 550 students distributed over grades 9-12 at the school. Noted above, the Jubilee School applies a rigorous multiple-criteria system for admission. Criteria include (Issa, 2013): (a) academic distinction over the last three semesters (30%); (b) the highest scores in the Jubilee Scholastic Aptitude Test (JSAT), which measures verbal, mathematical, and logical reasoning abilities (30); (c) passing the 'Evaluation of Potential Creativity- EPoC' test (20); (d) meeting the behavioral characteristics of gifted individuals (10%); and (f) passing a personal interview (10%).

Results

Teachers' knowledge about 'giftedness'

Jordanian teachers were asked: "How do you decide whether a student in [your] school is gifted?" Their responses varied, but all agreed that academic achievement is inadequate to determine whether a student is gifted or not. Rather, they decide whether a student is gifted based on a combination of social, emotional, and cognitive aspects. Teachers noted that in addition to reviewing

students' grades from previous years, students must sit for tests and take part in one-on-one interviews.

Ziad, a grade 12 computer teacher, stated that students do not have to be gifted and talented in every way. Some of them might be gifted in sports, in arts, or even in sciences. Generally, in order to be accepted as a student in the Jubilee School, s/he must have a very high grade point average and must sit for an entrance examination and take part in an interview. Upon acceptance, the student is enrolled in the summer school program in order to examine his or her ability to adapt to the school's environment.

Manal, a grade 11 Arabic teacher and a supervisor in the Jubilee School mentioned that "special tests" are done to decide whether or not the child is gifted and talented. The schools or parents usually refer the children to the Jubilee Institute. Grades are one criterion, but not the only factor when considering whether to admit a child. She also added that when students are candidates for entry at the school, their names are announced in local newspapers, after which they are contacted for interviews.

When a grade 11 teacher, Sanaa, was asked about the definition of giftedness, she said, I guess that a gifted student here must have a wider and broader imagination than a student who is not gifted, aware of all the words s/he is saying, gives unexpected information and ideas, has a sense of responsibility, is aware of everything s/he is doing, is able to work in a group setting and is a leader, all of this is very important. In addition of course, to time management.

Issam, a grade 11 teacher answered that the school usually refers to specific standards to help it decide whether a student is gifted or not. The student sits for an examination and has a scheduled interview to help the committee decide on his/her acceptance.

Faten, a grade 9 teacher stated that teachers are not who decide whether a student is gifted or not; there are certain examinations and interviews that students take before the final decision is made. But in general, Faten believes that Jubilee School students differ from other students in regular schools in terms of the selection criteria for the gifted programs, meaning that it is not only grades that are taken into consideration, but the individual as a whole.

A grade 10 teacher, Farouq, stated that a gifted student in Jubilee School possesses a wide range of information, an ability to reflect, analyze and synthesize information, and has more than one answer or solution to any problem they are presented with.

Nadia, a grade 9 teacher, stated that the gifted student in Jubilee School quickly grasps information and generates creative answers. When she works with gifted students in the laboratory, she expects them to be creative when it comes to experimenting, analyzing and synthesizing information, as well as formulating new ideas from the experiments they are conducting.

Furthermore, Mo'az, a grade 9 teacher in the school said, "Usually giftedness comes from a student who has unique thoughts, unheard of by anyone else before; the student is also very intelligent and quickly grasps ideas."

Finally, Iman, a grade 9 teacher and counselor at the school, declared they usually arrange for students to sit for examinations that are prepared and revised by university professors. These examinations test students' academic abilities, after which they undertake subsequent tests to examine their social and cognitive abilities. Finally, students are called for an interview based upon which the decision on acceptance is made. Once accepted, an English examination is usually taken by the student. Although there is no passing or failing grade, those with the highest marks are considered priority students.

Teachers' knowledge about ADHD in gifted adolescents

Jordanian teachers were interviewed about the characteristics of ADHD in gifted adolescents. The findings revealed that at least five of the teachers interviewed were unsure what the term 'ADHD' meant. They claimed that gifted students have little self-control especially because they understand and quickly grasp concepts. They may become easily bored and distract others in the classroom, which worries teachers. Iyad, a grade 12 teacher stated, "Definitely, I notice ADHD being exhibited a lot in the classroom with gifted students. Some cannot sit still, others constantly feel the urge to change their seats, and sometimes you will see them sitting on the table."

Manal, who has been an Arabic teacher and a supervisor for 18 years in Jubilee School, remarked:

Yes, the gifted student grasps concepts quickly and depending on his/her interest, might pay attention to what I am saying. Sometimes the student might react this way because s/he already knows the information I am explaining; that is why we need to be careful when talking about gifted and talented students. Sometimes, the home environment also plays a role affecting students' hyperactivity and behavior as well.

Other teachers argued that the characteristics of ADHD are displayed to a lesser degree in gifted students. For instance, Farouq said, "Sometimes a student might be very polite in class, while other times there would be a student who is very energetic and would not stop talking and/or moving". So far, and for the past few years, Farouq has noticed a trend. The politer the students are, the more gifted and talented they tend to be. He has observed that gifted students listen the majority of the time and do not interrupt, in stark contrast to earlier claims about how disruptive these students are: they do, however, still participate and talk in class. It does not mean that they are always silent and never participate in class, but they are generally polite.

Similarly, Issam, a grade 11 teacher said, "I can tell you that not every energetic or hyper student I see is considered gifted. Some gifted students want to show everyone what they are capable of, so they get really excited trying to prove themselves in their environment." Issam added that, occasionally teachers understand these students, but at other times, they neglect such students whose behavior thus becomes extreme. In this case, students then may say, "I have something to say, but you are not listening to me".

Nadia, a grade 9 teacher, perceived herself to be a teacher with 'old-school thinking' and considered that the behavior she sees in gifted students is the exact opposite of what she has in mind when considering her idea of gifted. Nadia regarded herself as being 'old school' and views a gifted student as one who is quiet, a high achiever, a good listener, obeys the rules, and pays attention in the classroom. She was critical of modern schools that consider other characteristics of gifted students, such as being cool and "having a sense of humor". She had noticed that when one student makes a joke, classmates begin to copy this behavior especially when they know the student is gifted and talented. Nadia also believes that gifted and talented children cannot have ADHD.

In contrast, Iman, the school counselor, believed that some students cannot learn unless they are constantly moving, and teachers at Jubilee School can perfectly well deal with "very active" or "hyperactive" students using different strategies, which she provided for the teachers in her role as a counselor. Iman had also noticed that some gifted students at Jubilee School could not study unless they were provided with a peaceful environment. According to her, gifted students have different personality traits and characteristics.

Teachers' knowledge about Overexcitability in gifted adolescents

Teachers at the Jubilee Institute were asked about the meaning of 'overexcitability', to which the majority were unable to provide an accurate or clear answer. However, a noticeable finding is that when asked about the term 'overexcitability' in Arabic, which translates into 'al hasaseeya al fa'eqa الحساسية الفائقة', the teachers answered differently. They emphasized 'sensitivity الحساسية' and

overlooked hyperactivity as a potential aspect of this term; they just translated the term into Arabic and defined the Arabic term. None of the participating teachers was able to state or describe the five different types of OE. Some teachers suggested that they should receive training on ‘overexcitability’ since it relates to the identification and teaching of gifted and talented students at the school.

Khalifa, a grade 12 Arabic teacher, for instance, said that one of the gifted student’s characteristics is sensitivity. He also added that, if a teacher tries to give a gifted student criticism of any sort, s/he might react negatively towards the teacher. However, Khalifa was unable to identify or describe the types of overexcitability.

Ziad, another grade 12 teacher, gave a definition of OE from his understanding of the term in Arabic. He said, “The term implies that the student would be very sensitive and that the environment plays a major role in making this student overstressed and more sensitive”. Concerning the types of OE, Ziad said, “The term is not generally used in the school so I do not really know”.

Manal, a grade 11 teacher and supervisor, believed that OE exists in each person but at different levels, although she did not know the different types of OE. As one who talks to and deals with gifted students, Manal mentioned that, as teachers and supervisors, they continually have dialogues about gifted and talented students. One characteristic she pointed out was related to gifted and talented students being “perfectionists”, which in her opinion points to overexcitability. A student competing with others, or perhaps even with themselves qualifies them as a perfectionist. Due to this overexcitability, during the first two months of the academic year, the staff at the school work hard with students and new teachers to ease the students’ transition.

Sanaa, a grade 11 Arabic teacher, offered her opinion about OE from a different perspective: the example was taken from when students with OE were reading and writing in Arabic class while sharing their ideas and experiences. She stated,

Most of the time, students are stubborn and they stick to the ideas they have. They are also very sensitive to every comment or word the teacher says. Even when it is just a joke sometimes, some students take it personally. In return, these students are not sensitive towards others; they are sensitive about their own personality, belongings, and intelligence, etc.

Some teachers immediately tried to provide answers about the different types of OE, others, like Sanaa and Issam, stated that they have never heard of this term before.

Farouq, a grade 10 teacher who has been teaching for 19 years, gave examples of OE students even though he was not informed about the different types of OE. He assumed that every gifted student has extremely sensitive and overexcitable qualities. Farouq brought to attention a case in which a student asked him, “Why were you pointing at me?” The student had expressed anxiety when the teacher had not meant it in a negative way. Farouq believed that since these students are very intelligent, they understand the message you are trying to convey with one look. The teacher must be careful not to offend them when translating a thought or idea directly to them.

Overlapping characteristics of Overexcitability and ADHD in gifted students

Teachers’ Conceptions and Misconceptions

During the semi-structured interview, one of the questions asked was whether teachers considered if there was an overlap between the characteristics of OE and those of ADHD. Answers varied between yes and no, the majority agreeing that overlapping characteristics do exist.

When asked this question, Iman immediately answered, “You are talking to someone who is knowledgeable... of course there is an overlap”. However, she neither provided specific information nor examples of such an overlap. Khalifa, a grade 12 Arabic teacher, believed that a student with ADHD might show signs of OE characteristics, but not to a striking degree. Noha, a grade 10 German teacher, similarly thought that ADHD characteristics do not necessarily overlap with those of OE. Likewise, Iyad considered that these characteristics do not have a strong overlap. Meanwhile, grade 9 teacher, Nadia, assumed that students with ADHD characteristics care less about what they are

studying and do not automatically get overexcited. She gave the example of a hyperactive student she once had asked to stop performing a certain activity in class, and he told her, “Okay, sorry, miss” and continued the activity as if nothing had happened. She added, “Trust me, they are not sensitive towards what I say at all!”

Conversely, of the 12 teachers who were interviewed, seven believed that there are overlaps between ADHD and OE. Manal specified that 10 to 15 percent of students displaying OE characteristics might later be diagnosed with ADHD. Moa’az believed that there is an unquestionable overlap between characteristics of OE and those of ADHD.

Ziad, a grade 12 computer teacher, said that some students are confident and know that they are excelling, and in turn, they become more vibrant and active. That is how the teachers find out that these gifted and talented students are actually ‘hyper’ and sensitive to everything around them.

Issam, a grade 11 teacher, believed that there is a complex and strong overlap between the characteristics of excitable gifted children and those children with ADHD. Issam also recalled the time when grade 12 gifted and talented girls delayed their graduation by a year because of how sensitive they had become about leaving their comfort zone, which in turn affected their grades. Issam deemed it very important to discuss and explain such an interesting and outstanding topic. He also added that the terms and strategies are even more significant for teachers since they need to employ them with these gifted and talented students.

Discussion and conclusions

Teachers’ responses varied when it came to defining the term ‘giftedness’ at school, but the majority agreed that it was neither one teacher nor one grade level that determined whether a student was gifted or not, rather it was teachers who determined who was a gifted student taking into consideration a combination of social, emotional, and cognitive qualities.

Some teachers did not recognize the term ADHD. The school administration should attempt to address this major loophole. Workshops, seminars or even professional development programs should be implemented on a regular basis to ensure that the teaching team and faculty members know what behaviors or aspects they may encounter upon meeting a gifted adolescent. Berri and Al-Hroub (2016a; 2016c) also found that no common concept of ADHD was particularly agreed on amongst teachers, and many debates occurred during the focus group discussion in their study.

None of the participating teachers was able to state or describe the five different types of OE. Some teachers suggested that they should receive training on ‘overexcitability’ since it relates to the identification and teaching of gifted and talented students at the school.

During the semi-structured interview, one of the questions asked was whether teachers considered that an overlap existed between the characteristics of OE and ADHD. Answers varied between ‘yes’ and ‘no’, with more agreeing that there are overlapping characteristics.

From the interviews, it is obvious that teachers both lacked background knowledge on OE and did not have solid knowledge about the characteristics of ADHD, making it hard for them to identify the differences between these two terms. Therefore, the problem arises from their pre-service and in-service training.

Once teachers, counselors, administrators, and even parents become aware of these characteristics, it is hoped that they will immediately shift to be more tolerant, patient and understanding. Based on what research shows, many people might confuse the characteristics of ADHD with those of overexcitability. Teachers with limited knowledge of overexcitability may mistake their students’ disruptive behaviors for disciplinary problems (Rotigel, 2003), which could lead to a misdiagnosis, and/or mislabeling. The authors of this study consider it important that the

Jubilee Institute and all other schools take account of these research findings to serve their gifted students.

Since this study has helped conceptualize the current views on giftedness, the next research studies could include more ‘in-depth analysis of identification’ procedures in different schools levels. A further study is needed to learn about giftedness from students' and parents' perspectives as well, in addition to those of other school stakeholders (e.g. counselors and principals).

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