Gender Differences in Teachers' Recognition of Overexcitabilities among Gifted Adolescent: An Experimental Vignette Study of Twice-Exceptionality

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Abstract

The study aims to examine gender differences in schoolteachers' recognitions of overexcitabilities (OEs) among gifted adolescents in Jordan. The participants included 46 (32 female, 14 male) secondary school teachers who teach grades 9 to 12 at the Jubilee School for Gifted and Talented Students in Jordan. The researchers used Experimental Vignette Methodology to explore (EVM) Jordanian teachers' recognitions, and meanings about OEs. Teachers responded to questions of five distinctive vignettes representing the five forms of OE. The study findings indicate that those female teachers were considerably more capable of identifying Emotional, Imaginational, and Sensual OEs in gifted adolescents than male teachers. However, both genders of teachers recognized Emotional OE as the most intense behavior, and Imaginational OE as the least intense behavior. The results were reported and discussed.

Keywords: Overexcitabilities; gifted adolescents; twice-exceptionality; gender differences; vignettes; psychomotor; intellectual; imaginational; sensual; emotional.

Introduction

The school's primary purpose is to provide children with the opportunity to get involved with tasks that help them learn academic, social, and communication skills. Children have a wide range of interests and needs, and every student is a unique individual. Gifted children are more vulnerable due to the asynchronous development of the condition. They have heightened intensity, and their cognitive abilities exceed the norm (El Khoury & Al-Hroub, 2018; Silverman, 1993). In the past, children with special needs were removed from the general classroom and taught in segregated settings. Today, the general education classroom includes students with different abilities and interests (Al-Hroub, 2010, 2013, 2014; Powell & Tutt, 2007). Given the present context of school systems, all teachers are expected to meet student needs, and each child should be considered a unique and whole being. Gifted students are no exception; they ought to be integrated, and their needs fulfilled. Students are labeled as gifted when they have multiple abilities to solve problems or create products that are valued within one or more cultural setting (Gardner, 2000). In addition, gifted students might display unique behavioral characteristics in classrooms. Their desire for gross motor movement, such as moving their bodies around, is an example of such traits (Rinn & Reynolds, 2012).

Dabrowski, a Polish psychiatrist, developed his view of personality development, which he referred to as the Theory of Positive Disintegration (TBD) (Bouchet & Falk, 2001; Dobrowski, 1964). The characteristics of this theory are that some symptoms of mental illness (e.g., neurosis, anxiety) along with person's deficiencies (e.g., nervousness, maladjustment) are seen as positive signs that persons are developing their personality toward their "personality ideal" (Dabrowski, 1964; Dabrowski & Piechowski, 1977). Dobrowski noted that when stimulations are altered, overreactions seem to express themselves through some dimensions. Dobrowski named these reactions overexcitabilities (OEs) with psychomotor, sensual, intellectual, imaginational, and emotional forms. These reactions might last significantly longer, occur with higher frequency, and be expressed

stronger in the gifted child than in the average child (Dabrowski, 1964; Dabrowski & Piechowski, 1977). Table 1 shows the forms and descriptions of OEs.

Table 1: Forms and expressions of overexcitabilities.

OE Form	Expression
Psychomotor	• ***Surplus of energy*** **-** Rapid speech, marked excitation, intense physical activity (e.g., fast games and sports), pressure for action, (e.g., organizing), marked competitiveness. • ***Psychomotor expression of emotional tension*** **-** Compulsive talking and chattering, impulsive actions, nervous habits (tics, nail-biting), workaholism, acting out.
Sensual	• ***Enhanced sensory and aesthetic pleasure*** **-** Seeing, smelling, tasting, touching, hearing, and sex; delight in beautiful objects, sounds of words, music, form, color, balance. • ***Sensual expression of emotional tension*** **-** Overeating, sexual overindulgence, buying sprees, wanting to be in the limelight.
Intellectual	• ***Intensified activity of the mind*** **-** Thirst for knowledge, curiosity, concentration, capacity for sustained intellectual effort, avid reading; keen observation, detailed visual recall, thorough planning. • ***A penchant for probing questions and problem solving*** **-** Search for truth and understanding; forming new concepts; tenacity in problem-solving. • ***Reflective thought*** **-** Thinking about thinking, love of theory and analysis, preoccupation with logic, moral reasoning, introspection (but without self-judgment), conceptual and intuitive integration, independence of thought (sometimes very critical).
Imaginational	• ***Free play of the imagination*** **-** Frequent use of image and metaphor, facility for invention and fantasy, facility for detailed visualization, poetic and dramatic perception, animistic and magical thinking. • ***Capacity for living in a world of fantasy*** **-** Predilection for magic and fairy tales, creation of private worlds, imaginary companions, dramatization. • ***Spontaneous imagery*** as an expression of emotional tension, animistic imagery, mixing truth and fiction, elaborate dreams, illusions**.** • ***Low tolerance of boredom***
Emotional	• ***Feelings and emotions intensified*** **-** Positive feelings, negative feelings, extremes of emotion, complex emotions and feelings, identification with others' feelings, awareness of a whole range of feelings. • ***Strong somatic*** **-** expressions Tense stomach, sinking heart, blushing, flushing, pounding heart, sweaty palms. • ***Strong affective expressions*** **-** Inhibition (timidity, shyness); enthusiasm, ecstasy, euphoria, pride; strong affective memory; shame; feelings of unreality, fears, and anxieties, feelings of guilt, concern with death, depressive and suicidal moods. • ***Capacity for strong attachments, deep relationships*** **-** Strong emotional ties and attachments to persons, living things, places; attachments to animals; difficulty adjusting to new environments; compassion, responsiveness to others, sensitivity in relationships; loneliness. • ***Well-differentiated feelings toward self-Inner dialogue and self-judgment***

Source: (Piechowski, 1999)

There are are several limitations to Dabrowski's Theory of Positive Disintegration (TPD) behind OEs. First, it has limited empirical evidence to support the theoretical framework outside the gifted education and twice-exceptional field. Second, the validity of this theory should be further applied in cross-cultural studies to ensure its universal validity. Third,

Twice-Exceptionality: The case of overexcitability in gifted learners

There is a lack of empirical research related to the prevalence of OEs among gifted learners as compared to non-gifted learners (Mendaglio & Tillier, 2006). In a study by Bouchard (2004), the findings revealed that 76% of gifted children and 42% of non-gifted children showed similar OE

profiles. Interestingly, the two groups differed significantly on Psychomotor and Intellectual OEs, with higher Intellectual OE among gifted students, and higher Psychomotor OE among the non-gifted group. The findings related to Psychomotor OE was supported by Ackerman (1997). Research also indicated that intellectually-gifted adult learners show higher Emotional, Imaginational, and Intellectual OE profiles – big three - than non-gifted adult peers (e.g., Bouchet & Falk, 2001; Miller, Silverman, & Falk, 1994). However, there is a debate on whether OE is a valid construct (Al-Hroub & Krayem, in press). Research indicated that not all gifted display high OEs, even though many gifted learners do display such high OEs (Vuyk1 et al., 2016; Winkler & Voight, 2012).

Gender difference in teachers' recognition of OEs in gifted learners

Teacher recognition is one of the most widespread methods for identifying twice-exceptional learners but is also one of the most troublesome (Al-Hroub & Whitebread, 2008). Research indicated that teachers' perceptions of children with OEs or behavioral problems might vary according to gender stereotypes (Berri & Al-Hroub, 2016c; El Khoury & Al-Hroub, 2018; Maniadaki, Sonuga-Barke, & Kakouros, 2003). A gender gap in OEs exists, and studies emphasize the role that teachers play in identifying and seeking for OEs (Al-Hroub & Krayem, 2018). Studies have found that gifted males showed stronger Psychomotor, Intellectual, and Imaginational OEs than gifted females, whereas gifted females demonstrated stronger Emotional and Sensual OEs (Bouchet & Falk, 2001; Piirto & Fraas, 2012; Siu, 2010; Tieso, 2007; Treat, 2006). Other studies (e.g., Al-Hroub & Krayem, 2018; in press) revealed a significant gender difference in the Psychomotor OE in favor of boys and significant differences in the Sensual, Imaginational, and Emotional OEs in favor of girls. In contrast, no significant gender differences were found in Intellectual OEs.

Research design

The study aimed to examine gender differences stereotypes in schoolteachers' recognitions of overexcitabilities (OEs) in gifted adolescents in Jordan. The study explored teachers' recognition to be able to identify the manifestation and intensity of OEs in five cases of gifted students by using the experimental vignette methodology (EVM). The researchers used EVM to offer an in-depth analysis of the participants' responses. EVM consists of presenting participants with carefully developed and realistic scenarios to assess their perceptions and judgments, therapy, allowing us to manipulate and control independent variables (Aguinis & Bradley, 2014). According to Barter and Renold (1999), "Vignettes may be used for three main purposes in social research: to allow actions in context to be explored; to clarify people's judgments, and to provide a less personal and therefore less threatening way of exploring sensitive topics" (p. 1).

In the current study, EVM provided a valuable technique for exploring Jordanian teachers' judgments, and meanings about OEs, especially that such issues may not be readily measurable or appropriate through other means, such as interviews or focus group discussions. We employed EVM to fulfill three primary purposes:

1. interpretation of the manifestations of OEs in gifted learners;
2. clarification of teachers' recognition of OEs; and,
3. discussion of gender differences in teachers' recognition in comparison with the 'normality' of the vignette.

Method

Participants

The study was done at the *Jubilee School for Gifted and Talented Students,* known as *the "Jubilee Institute"* in Jordan. The teaching staff of the institute consists of about 60 teachers, most of them working full time and others working part-time at the school. Of the 60 teachers at Jubilee Institute, 46 agreed to participate in the study, consisting of 32 females and 14 males who teach grades 9 to 12. The prior attribute of the sample tested revealed that only five teachers out of the 46 had attended ADHD training.

Procedures

Permission to conduct the study was obtained from the school director. Informed consent was obtained from schoolteachers. They were given a full explanation of the study, assured anonymity of their responses, and confidentiality of all data collected. Ethical approval was obtained from the institutional review board (IRB) at the American University of Beirut.

Data collection took place at the Jubilee Institute in Jordan. Teachers were asked to read five vignettes and reflect on them based on what they have studied and the experience they have had with gifted students at their school. Teachers were assured that there are no right or wrong answers when responding to vignettes. This explanation was particularly essential to examine whether their views are consistent or not with the premise presented in the vignettes. Teachers were also given a demographic questionnaire to gather information such as gender, universities attended, and years of experience. The vignettes lasted approximately 20 to 25 minutes to complete.

Vignettes. Female and male teachers' expectations concerning their OE form was assessed using the teachers' responses to questions based on five vignettes representing *twice-exceptional* adolescents. They show high abilities and different forms of OE. The vignettes described five adolescents aged 16 and 17 who showed symptoms that meet the criteria for each of the five forms of OE. Two educational psychology experts in the field of gifted education were consulted to examine content validity. These vignettes enabled us to study not only teachers' recognition of the different forms of OE but also the underlying biases that teachers may show with regards to boys or girls in a Middle Eastern context, specifically in Jordan. For this study, we adopted and modified vignettes developed by Webb in 2016 to support this study. An identical set of six questions accompanied each vignette with only names changed to match the child in the vignette. Teachers provided a rating for questions 1-5 on a Likert-type scale from 1 to 3, with 1 (not at all), 2 (moderately), and 3 (extremely). These were 'How serious was X's behavior? How much would X's behavior hinder his academic progress?' 'How much of X's behavior is common in the Jordanian culture?' 'How ready are you to face X's behavior in your classroom?' 'How stressful would it be to have X as a student?' The last question was, "Is X's case considered a case of ADHD, emotional OE, imaginational OE, psychomotor OE, sensual OE, intellectual OE, or something else?"

The first vignette (V1-Psychomotor_OE) was about a 16-year-old adolescent with Psychomotor OE, who exhibited a surplus of energy, rapid speech, intense physical activity, and interrupted the teacher frequently. The student also showed carelessness and inattention to details, characteristics typical of psychomotor OE (see Appendix 1). ***The second vignette (V2-Emotional_OE)*** was about a 16-year-old adolescent with Emotional OE, who took everything to heart, exhibited strong emotions, and could feel a mixture of different emotions all at once, characteristics typical of emotional OE. ***The third vignette (V3-Imaginational_OE)*** was about a 17-year-old adolescent, who wandered into a kind of imaginary creative world and sometimes mixed up fact and fantasy, characteristics typical of the imaginational OE type. ***The fourth vignette (V4-Intellectual_OE)*** was about a 17-year-old adolescent, who possessed an endless amount of information on specific topics and jumped on to different facts every minute, while the teacher and the rest of the class were still contemplating the very first concept, characteristics typical of intellectual OE (see Appendix 2). ***The fifth vignette (V5-Sensual_OE),*** was about a 17-year-old adolescent who was easily distracted by extraneous stimuli, and sensitive to odors. This adolescent was sensitive to tags on clothes and refused to wear the shirts unless tags are cut from the back. The sixth and last question was addressed to discover if teachers were able to identify the vignettes as cases of OEs, ADHD, or something else.

Research findings

Teachers' recognition of OEs in five vignettes

Teachers' responses to the vignettes were calculated and presented to evaluate the effect of gender stereotypes on teachers' recognition of OEs in gifted adolescents. The teachers' answers

varied to the question: "Is X's case considered a case of ADHD, emotional OE, imaginational OE, psychomotor OE, sensual OE, intellectual OE or something else?". Some answers were consistent with the themes presented in the vignettes, whereas others were different from what was anticipated.

Table 1 shows that of 46 teachers, around one-fourth (26%) stated that Vignette 1 (V1-Psychomotor_OE) has Psychomotor OE. Twenty percent (20%) (9 female teachers) assumed that the behavior was a case of ADHD, while 33% had no idea or judgment on the case. Regarding Vignette 2 (V2-Emotional_OE), 52% answered that the student had Emotional OE, 13% confused it with Sensual OE, and 28% had no idea. As for Vignette 3 (V3-Imaginational_OE), most teachers (61%) were able to identify the characteristics of Imaginational OE. As for Vignette 4 (V4-Intellectual_OE), 44% of teachers' responses were consistent with the intellectual OE presented in the case. For Vignette 5 (V5-Sensual_OE), the findings show that 41% of the teachers were not able to identify the case as someone with the characteristics of sensual OE, whereas 37% had no idea or judgment whether the five vignettes are about OEs.

Table 1: Frequencies and percentages of teacher's responses to the five vignettes.

Form of OE and Teachers Responses	V1-Psychomotor OE		V2-Emotional OE		V3-Imaginational OE		V4-Intellectual OE		V5-Sensual OE	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
ADHD	9	19.6	-	-	1	2.2	-	-	-	-
Emotional OE	2	4.3	**24**	**52.2**	1	2.2	1	2.2	4	8.7
Imaginational OE	1	2.2	-	-	**28**	**60.9**	1	2.2	1	2.2
Sensual OE	-	-	6	13.0	-	-	1	2.2	**19**	**41.3**
Psychomotor OE	**12**	**26.1**	1	2.2	1	2.2	-	-	1	2.2
Intellectual OE	2	4.3	-	-	-	-	**20**	**43.5**	-	-
Something else	3	6.5	2	4.3	1	2.2	5	10.9	4	8.7
No Idea	15	32.6	13	28.3	14	30.4	18	39.1	17	37.0
ADHD and Psychomotor OE	2	4.3	-	-	-	-	-	-	-	-
Total	46	100.0	46	100.0	46	100.0	46	100.0	46	100.0

Table 2 shows a considerable gender difference in favor of female teachers in identifying Emotional, Imaginational, and Sensual OEs in gifted adolescent students. No substantial gender difference was noted regarding Psychomotor and Intellectual OEs.

Table 2: Gender differences in teachers responses to OEs five vignettes.

OE Forms and Teachers Responses	V1-Psychomotor OE		V2-Emotional OE		V3-Imaginational OE		V4-Intellectual OE		V5-Sensual OE	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Female Teachers	8	25	20	**62.5**	22	**68.8**	14	43.8	**15**	46.9
Male Teachers	4	28.6	**4**	**28.6**	6	**42.9**	6	42.9	**4**	28.6

Figure 1 illustrates the findings of Table 1 and Table 2. It is shown that teachers, in general, were more capable of identifying Imaginational and Emotional OEs in gifted children than other OE forms. Female teachers' judgment to recognize OEs showed this trend: (*Imaginational* >*Emotional* >

Intellectual > Sensual > Psychomotor), whereas no clear trend was demonstrated for male teachers. Interestingly, responses showed that both male and female teachers had difficulty in identifying Psychomotor OE.

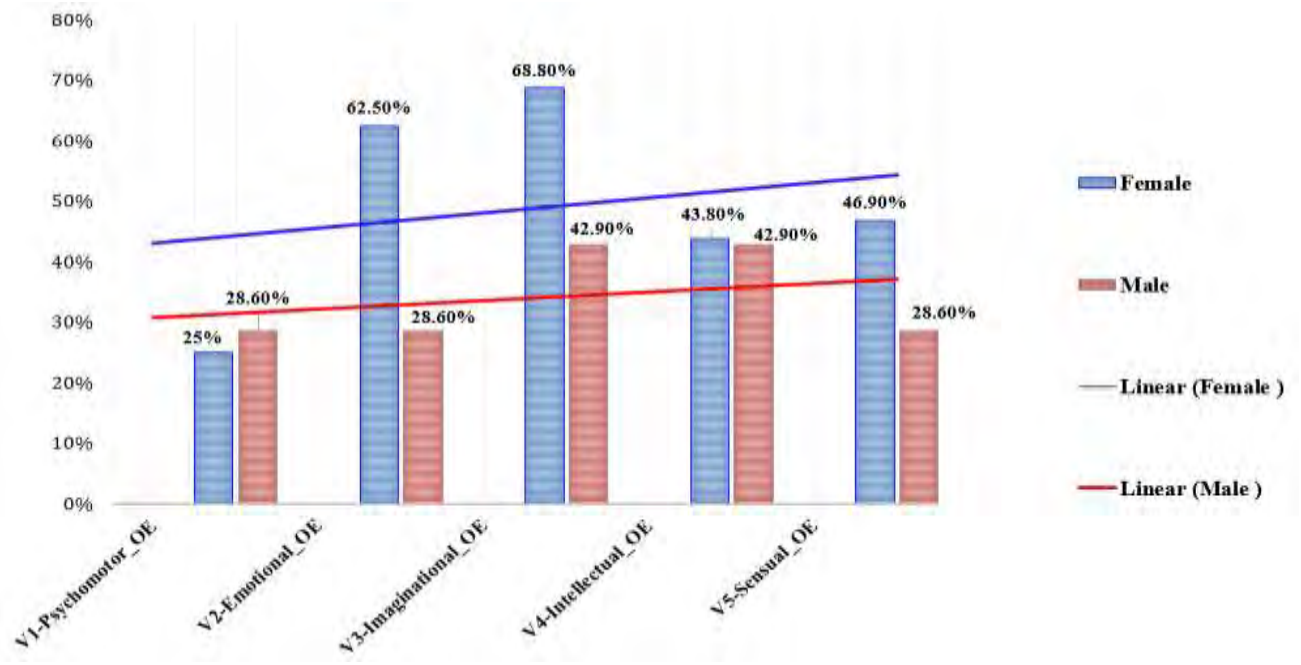

Figure 1: Teachers' recognition in identifications of OEs in five vignettes.

Intensities of OE forms in vignettes of gifted adolescents

Descriptive statistics were employed to report the teachers' mean responses to OE five vignettes (Table 3). The mean of each OE was compared, and it demonstrated that intensities are higher in Emotional OE (M = 2.49, SD = .626), Sensual (M = 2.29, SD = .695), and Psychomotor OE (M = 2.29, SD = .626), followed by Intellectual OE (M = 2.18, SD = .716), and Imaginational (M = 2.11, SD = .611) OEs. As for gender, differences were found in the OEs' rank ordering. Female teachers' recognition showed a trend of OEs (*Emotional > Psychomotor > Sensual > Intellectual = Imaginational)* that is different from male teachers' OEs trend *(Emotional > Sensual > Intellectual > Psychomotor > Imaginational)*. It is worth noting that both male and female teachers identified Emotional OE as the most serious and intense behavior. In contrast, Imaginational OE was perceived as the least intense behavior (relatively moderate).

Table 3: Teachers mean responses on 'how serious is the students' behavior?'

Five Vignettes	*N*	*Mean*	*SD*	Gender	*N*	*Mean*	*SD*
V1-Psychomotor - OE	45	2.29	.626	Female	31	2.32	.599
				Male	14	2.21	.699
V2-Emotional - OE	45	2.49	.626	Female	32	2.53	.567
				Male	13	2.38	.768
V3-Imaginational - OE	45	2.11	.611	Female	32	2.13	.609
				Male	13	2.08	.641
V4-Intellectual - OE	45	2.18	.716	Female	32	2.13	.660
				Male	13	2.31	.855
V5-Sensual - OE	45	2.29	.695	Female	32	2.22	.706
				Male	13	2.46	.660

Figure 2 illustrates the findings reported in Table 3 concerning teachers' answers on the question: "How serious is the student's behavior?"

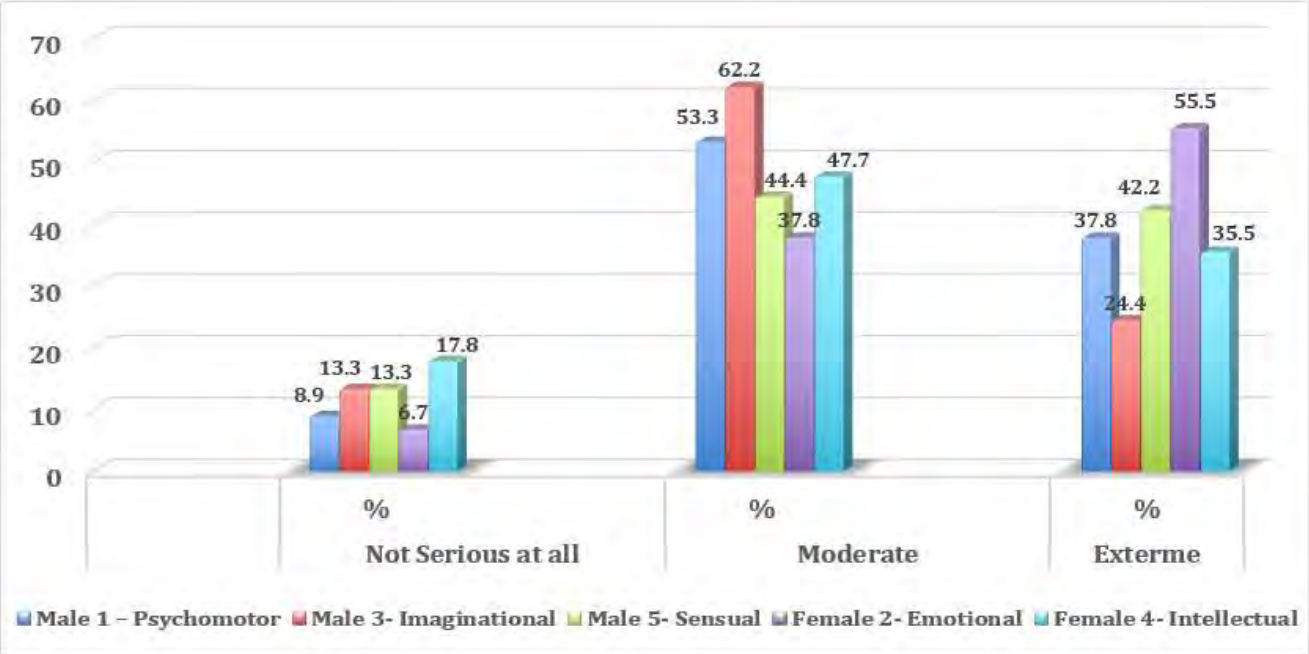

Figure 2: Percentages of teachers' responses to 'how serious is the students' behavior?'

Discussion and conclusions

From the vignettes, it was evident that Jordanian teachers lacked knowledge about OEs and the characteristics of ADHD. Most teachers were unable to identify the differences between Psychomotor OE and Hyperactivity. Also, most teachers showed poor judgment of OEs represented in the five vignettes. Therefore, the problem arises from their pre-service and in-service training, given that only five teachers out of the 46 had previously attended ADHD training, and none had received training on OE. Research (e.g., Shehab & Al-Hroub, 2019; Alias et al., 2013; Bouchard, 2004; Daniels & Piechowski, 2009) indicated that being aware and trained to deal with various forms of OE and ADHD enables teachers and parents to minimize conflict among gifted students and others.

The results of our study have both similarities and differences with previous research ***findings***. For example, the results are consistent with numerous research studies that confuse the characteristics of ADHD with those of Psychomotor OE (Al-Hroub & Krayem, 2018; in press; Rotigel, 2003). This confusion is due to the limited knowledge of OE that could lead to misdiagnosis or mislabeling (Al-Hroub & Krayem, 2018; press; Rotigel, 2003). Interestingly, only female teachers in our study showed this confusion. This confusion could be due to cultural reasons that makes females more vulnerable to social expectations.

It is worth noting that both female and male teachers ranked Emotional OE as the most severe form of OEs. It seems that emotional and behavioral problems are more of a concern to Jordanian teachers. Female teachers considered Psychomotor OE as the second most serious form, whereas male teachers were less concerned about it. Research, in the Middle East, indicated that teachers are usually more tolerant of psychomotor activity or hyperactivity in boys than in girls (Al-Hroub & Krayem; in press; Alkhateeb & Alhadidi, 2016; Berri & Al-Hroub, 2016a; 2016b)

However, since male teachers comprise 30% of the entire sample, this uneven distribution of males versus female teachers might have influenced the results. Interestingly, both male and female teachers' evaluative responses indicated that Imaginational OE (e.g., free play of imagination, capacity for living in a world of fantasy, and spontaneous imagery) is not a severe form rather an

essential quality in gifted children. Therefore, both genders ranked Imaginational OE a moderate intensity that does not reach a critical level to deal with.

Future research could develop assessment tools to better identify twice-exceptional students (e.g., gifted students with OEs) at Jordanian schools. Further Middle Eastern studies are needed to learn about OE from the perspectives of students, parents, and other school stakeholders (e.g., counselors and principals).

Limitations

There were some limitations to this study. First, the study sample was taken from only one Jordanian school catering to gifted adolescent students. Second, the number of female teachers was 2.3 more than that of males, which may have influenced the findings. Third, the study targetted secondary level teachers. A final limitation is related to the small sample size. However, this was beyond our control because the Jubilee Institute is the only school designated for gifted students in Jordan.

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Appendix 1

Sample Vignette – Boy 1

Sami is a 16-year old gifted boy. Sami's teacher describes him as showing a surplus of energy that is often manifested in rapid speech, intense physical activity, and a need for action. Sami has difficulty restraining his desire to talk in the classroom and interrupts his teacher frequently. When doing his work, he shows usually shows carelessness and persists to be messy and inattentive to details. Sami's teachers and parents often want to tell him to sit down and be quiet.

1. How serious is Sami's Behavior?

1----------2----------3
not at all moderately extremely

2. How much would Sami's behavioral hinder his academic progress?

1----------2----------3
not at all moderately extremely

3. How much of Sami's behavior is common in the Jordanian culture?

1----------2----------3
not at all moderately extremely

4. How ready are you to face Sami's behavior in your classroom?

1----------2----------3
not at all moderately extremely

5. How stressful would it be to have Sami as a student?

1----------2----------3
not at all moderately extremely

6. Is Sami's case considered as a case of ADHD, emotional overexcitability, Imaginational overexcitability, Psychomotor overexcitability, sensual overexcitability, or Intellectual overexcitability or something else? Please elaborate.

Appendix 2

Sample Vignette – Girl 2

Samar is a 17-year old girl. Samar is a good student with an endless amount of information on specific topics. Samar was in class when the teacher listed several famous individuals on the board. The teacher asked, "Who can tell me something about any one of these people?" Samar listened as others offered simple comments and generally accurate information about the people, but then felt very excited and compelled to add some less well-known details of one artist's life. After she gave an actual but little-known fact, the teacher said that she would have to check into it, because she was not sure it was correct. Minutes later, Samar asked the teacher a question that seemed irrelevant to the topic because she has been thinking of ways it might apply to other situations.

1. How serious is Samar's Behavior?

1----------2----------3
not at all moderately extremely

2. How much would Samar's behavioral hinder her academic progress?

1----------2----------3
not at all moderately extremely

3. How much of Samar's behavior is common in the Jordanian culture?

1----------2----------3
not at all moderately extremely

4. How stressful would it be to have Samar as a student?

1----------2----------3
not at all moderately extremely

5. Do you think that you need to provide Samar with more attention than others?

1----------2----------3
not at all moderately extremely

6. Is Samar's case considered as a case of ADHD, emotional overexcitability, Imaginational overexcitability, Psychomotor overexcitability, sensual overexcitability or Intellectual overexcitability or something else? Please elaborate.