

# Winners Of Science Competitions: Psychological Challenges Facing Gifted Individuals

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**Abstract:** The purpose of the study was to determine the most psychological challenges facing talented individuals who won medals in science competitions in terms of how common these challenges are to this population and what specific challenges are present in this group. Furthermore, the researcher aimed to examine any differences between male and female talented individuals in terms of types and average psychological challenges. The total sample of the study was 112 (75 male and 37 female) talented individuals who had won medals in science competitions. This study utilized a quantitative method using data collected by survey; the researcher used different data analyses, including frequency, means, standard deviation, percentage, chi-square, and t-test, to answer the research questions. Results showed that around 70% of talented individuals had encountered two or more psychological challenges during their achievement path. The most common psychological challenges faced among gifted individuals were stress (39.3%), perfectionism (37.5%), self-criticism (32.1%), and low self-esteem (32.1%). Another critical challenge, like depression, was present in this group (14.3%). Further, the results showed no gender differences in the type and average of psychological challenges faced by talented individuals. A critical implication of the current study was to integrate psychological guidance and counseling in gifted programs across developmental paths through systematic intervention to ensure the mental health of talented individuals. Researchers are encouraged to conduct future studies in different settings, context levels, and regions for comparison and cross-validation of these results.

**Keywords:** Giftedness and talented; scientific competitions; gifted education; higher education.

## Introduction

### Background

Being labeled as gifted has many advantages. However, it also creates serious challenges related to different domains, such as academic, social, psychological, and mental health. The burden of labeling has received little attention in gifted psychology literature

(Peterson, 2007) because scholars have paid more attention to achievements of gifted individuals and less attention to their social and emotional needs (Yoo & Moon, 2006). One possible reason for not researching these concerns may be that gifted individuals are not likely to discuss their psychological concerns with adults, not do they seek consultation due to

stigmatism which may result in putting them at risk (Peterson & Ray, 2006).

In educational literature, developing a challenge in one dimension, whether psychological, social, or emotional, may exacerbate this challenge and turn it into a chronic problem that needs a long-term treatment program (Lewis, 2016). This neglect of a single problem in one dimension may lead to the creation of new problems in other dimensions. Indeed, for example, when the problem of low self-esteem arises for a gifted individual, this may lead to the creation of problems in other dimensions such as the academic dimension, where it may manifest as poor achievement, developmental issue, or withdrawal from the academic environment or at least low self-actualization, according to Maslow's theory of needs. This would result in the individual not being able to cope with these challenges and fulfil his or her highest potential (Maslow, 1943; 1954).

Academically, gifted students encounter distinct challenges such as feeling unchallenged, isolated, and disengaged due to the discrepancy between their intellectual abilities and the curriculum, leading to underachievement (Reis & McCoach, 2000) and lack of motivation. For instance, perfectionism can lead to anxiety and procrastination (Cross & Coleman, 2014). Such inclination of gifted individuals can lead to intense desire and internal pressure to achieve at the highest level possible, oftentimes setting unrealistically high standards for themselves. To overcome these obstacles, educators and parents are encouraged to provide appropriate educational opportunities for gifted students along with

social and emotional support (Colangelo & Assouline, 2009).

According to Peterson (2001), individuals with exceptional abilities may also face various psychological challenges, such as heightened sensitivity, anxiety, and depression. Due to their heightened awareness and emotional intensity, intellectual overexcitability, asynchronous development, and high expectations, they may struggle to cope with stressors (Silverman, 2002). Educators and parents should also be aware of the unique emotional needs of gifted students and provide them with appropriate support and understanding, and it is crucial to provide accessible counseling and mental health support for gifted students, as emphasized by scholars (Neihart et al., 2016; Peterson, 2007).

## **Literature Review**

### **Definition of Giftedness**

The field of giftedness has been studied since the second half of the 19th century, when Francis Galton conducted the first study in this field in England and published his book titled *Hereditary Genius* (Gallagher, 1994). Since that time, numerous definitions of giftedness have been proposed by researchers and institutions, such as Marland (1972), Renzulli (1986), Sternberg (1985), and Maker (1993). However, no consensus has been established to date (Yaman & Sökmez, 2020). Although an intelligence quotient (IQ) score is a sign of high ability, "many psychologists refuse to use a high value of IQ as the sole criterion for the diagnosis of giftedness", there is necessity of a comprehensive strategy for developing a holistic, cohesive psycho

pedagogical definition of giftedness (Paliy, 2015, p. 183).

Subotnik et al., (2011) differentiated between two terms, latent potential and demonstrated potential. Latent potential refers to the inherent abilities or aptitudes that an individual possesses but has not yet demonstrated. This potential can be assessed with different scientific instruments, such as IQ and personality tests. Conversely, demonstrated potential refers to an individual's actual abilities as evidenced by their observable actions and accomplishments.

Developing demonstrated potential typically requires access to resources and a supportive environment. Similarly, Gagné (2000) defines giftedness as exceptional natural abilities or aptitudes in specific domains, such as intellectual, creative, academic, artistic, or leadership abilities. Talent refers to the development of these abilities into advanced levels of performance through systematic training, practice, and learning experiences. Examples of demonstrated potential can be seen in individuals who excel and achieve an exceptional result in specific domains, such as music, science, and mathematics (Gagné, 2000; Subotnik et al., 2011).

In this study, I defined gifted individuals as those who had demonstrated exceptional ability in STEM fields by winning one or more medals (gold, silver, or bronze) in national or international science competitions. These competitions served as a measure of their high demonstrated abilities and achievements, which were reviewed and assessed by panel of experts in the related fields.

### **Psychological Challenges Among Gifted Individuals**

There are several educational, contextual, and social factors that may be responsible for the emergence of psychological challenges among gifted individuals, including the following: (a) the lack of consideration for gifted students' needs by the educational system, which places intervention's focus elsewhere rather than on holistic development (Rinn, 2012). For example, if a teacher lacks experience in teaching gifted students and does not modify the curriculum to meet their needs or understand the psychological impact on their achievement, the students may present maladjustment behaviors in the classroom or develop problematic behaviors (Cummins, 2014); (b) psychological difficulties are always present in competitive contexts used as a means for talent development, and those who do not meet their goals may suffer consequently; and (c) family and society pressures may increase once an individual is labeled as gifted (Freeman, 2013).

A modern framework in positive psychology offers a holistic view of gifted individuals, focusing on their well-being, positive traits, and social contexts (Pfeiffer, 2018). Although gifted individuals demonstrate similarities in mental capabilities, they differ in their psychological characteristics (Olszewski-Kubilius & Thomson, 2015) due to differences in economic, cultural, and environmental backgrounds. Despite this, researchers have monitored several psychological challenges facing gifted individuals, including emotional intensity, over-excitability, low motivation, anxiety,

stress, social isolation, high expectations from parents and teachers, rejection by peers, and perfectionism (Cross, 2012; Neihart, 1999, 2012; Olszewski-Kubilius & Thomson, 2015). For example, in one study on Malaysian gifted students, Ishak and Bakar (2010) found that gifted students aged 13 to 15 faced many challenges, including perfectionism, competitiveness, low self-esteem, anxiety, and identity formation issues. Girls in Ishak and Bakar's study sought to receive more counseling services related to their psychological challenges than boys, and female students were more open to sharing their concerns than male students. Yaman and Sökmez (2020) monitored some psychological and socioemotional challenges faced by a gifted Turkish student, including peer relationship problems, issues in family communication, and perfectionism. They interviewed his parents and teachers and collected anecdotal data about him. The findings revealed that the child struggled with social and emotional issues in relation to his family and friends. In essence, the child experienced difficulties in developing connections with his peers and communicating with his family due to his perfectionism and focus on achieving success. While trying to satisfy his parents' expectations, he neglected his own emotions and needs, which hindered his social and emotional development. Although the child excelled academically, he faced obstacles in the socioemotional aspects of his life.

Stress is considered one of the most common characteristics accompanying the concept of giftedness. For example, in a longitudinal study, Peterson et al. (2009)

found that high expectations from self or others may lead to stress for gifted students. Students in this study emphasized that "college admission and Advanced Placement tests (AP), difficult classes, large projects, acceleration, and academic competition with peers" led them to experience stress (p. 40). Stress is more likely to be reported by gifted high school students ( $M = 6.8$ ) compared to middle ( $M = 5.8$ ) or elementary ( $M = 2.7$ ) schools (Peterson et al., 2009). In one study, Alfaiz (2023) found that approximately 62% of gifted students in general education faced some sort of stress.

Perfectionism is another common characteristic among gifted students (Orange, 1997). Dixon et al. (2004) found that approximately 42% of gifted youth experience perfectionism, whereas Chan (2012) reported that 29% of gifted Chinese adolescents experienced unhealthy perfectionism (e.g., procrastination, difficulty accepting feedback). Female students are often more prone to perfectionism than male students (Kramer, 1988; Baker, 1996; Chan, 2007). However, several studies reported no gender difference in perfectionism (Tsui & Mazzocco, 2007; Chan, 2012).

Another common challenge among gifted students is self-criticism (Freeman, 2013). Gifted students face various pressures related to their environment, including their homes, schools, and society, due to their high IQ scores and high-performance expectations. This can lead to a tendency toward self-criticism as they set high standards for themselves. In general education, Alfaiz (2023) found that

approximately 48% of gifted students struggled with self-criticism.

Gifted individuals may struggle with low self-esteem even though they have high IQ scores due to social challenges they experience like social isolation and peer rejection (Kostogianni & Andronikof, 2009). Some may not be aware of their exact potential or may compare themselves with other gifted individuals who excel in a specific domain (Aljughaiman, 2019). Alfaiz (2023) found that approximately 53% of gifted students in general education faced some sort of low self-esteem based on their parents' perspectives.

### **Intervention for Psychological Challenges**

Gifted individuals encounter psychological challenges during their academic and life journeys require proper guidance and counseling. Thus, it is essential to develop a plan in advance to help gifted individuals to deal with these challenges. Researchers have pointed out some justifications of the importance of intervention: (a) enhancing mental health among the gifted through developing an intervention plan helps to prevent more complex psychological problems, such as depression and anxiety (Peterson, 2009); (b) expanding the potential of gifted individuals by providing them with appropriate support and resources will help these individuals reach their full potential (Renzulli, 2012); and (c) developing a nurturing environment will promote inclusivity, acceptance, understanding, and appreciation of the distinctive needs and abilities of gifted students (Silverman, 2009). Various studies found that gifted students seek to receive counseling

services to cope with problems such as underachievement, stress, low motivation, and relationships with their parents and peers (Moon & Hall, 1998; Neihart, 1999, Piechowski, 1999, Moon et al., 1997, Peterson, 2003). These interventions are essential to gifted students' development, achievement, and mental health growth.

### **Theoretical Framework**

The well-being and mental health of gifted students can be significantly affected by psychological challenges, which can negatively impact their academic performance and overall life satisfaction. To understand the impact of these challenges, theoretical perspectives such as Maslow's hierarchy of needs (1943, 1954) which still intact and the ideas of scholars in the field of giftedness similar to Genge's Model (2010) and conceptual framework of rethinking giftedness of Subotnik et al. (2011) formed the framework of the current study. According to Maslow's hierarchy of needs (1943, 1954), individuals must first fulfill their physiological, safety, belonging, and self-esteem needs before achieving self-actualization. In the context of education, students who feel safe, secure, and emotionally supported are more likely to be motivated and engaged in their learning, which will lead to growth, empowerment, and self-actualization (Côté-Lussier & Fitzpatrick, 2016).

Psychological challenges may be attributed to the discrepancy between gifted individuals' characteristics and the surrounding environment, whether in their social, cultural, or educational environments (Olszewski-Kubilius & Thomson, 2015). It may also arise due to a

conflict between social, physical, and mental development of students, so gifted students need guidance and support (Aljughaiman, 2019). The psychological challenges may create complex problems that negatively affect gifted students' success, hinder their social lives (Blaas, 2014), and reduce self-esteem (Yaman & Sökmez, 2020). However, it is possible to help gifted individuals develop emotional and psychological skills through proper interventions including counseling, training, modeling, and fostering ability to overcome these challenges (Subotnik et al., 2011).

### **The Significance of the Study**

Limited research exists on the psychological challenges faced by talented students who won science competitions (Udvari, 2000; Blaas, 2014; Höffler, 2017; Kao, 2011). Udvari (2000) highlights the need for further investigation into the competitive behavior of gifted children, while Blaas (2014) emphasizes the psychological challenges, difficulties, and underachievement experienced by this group. Höffler (2017) and Kao (2011) both call for more research on the motivation and self-concepts of participants in science competitions, and the competition-related experiences of gifted students. These studies collectively underscore the need for more comprehensive research on the psychological challenges faced by gifted students in science competitions.

Furthermore, most research in gifted education focuses on the K-12 education (Robinson, 1997), whereas limited research has been conducted beyond this

age group (Hébert, 2006). Gifted individuals at the college level have special needs and experience intellectual and social challenges, that differ from their average peers (Rinn & Plucker, 2004). In their study, Yoo and Moon (2006) found that gifted adolescents sought consultation for socioemotional concerns such as perfectionism, hypersensitivity, and overconforming to rules or rigidly enforcing rules, compared to gifted younger children. The current study is significant for a number of reasons: (a) identifying the most prevalent psychological challenges among winners of science competitions, (b) identifying psychological challenges among high academic and career achievements individuals, (c) identifying priority psychological challenges for interventions and provisions, and (d) supporting programs' directors to take psychological challenges into consideration before university life in gifted programs. The study's findings have the potential to inform policy, practice, and program development in gifted education, ultimately enhancing the well-being, academic achievement, and long-term success of gifted individuals in STEM fields and beyond.

### **Purpose and Research Questions**

The purpose of the study was to determine the most psychological challenges facing gifted individuals who won medals in science competitions in terms of how common these challenges to this population and what specific challenges are present in this group. Moreover, the study aimed to examine any differences between male and female gifted individuals in terms of type and number of

psychological challenges. Intervention could be facilitated on one hand by considering the nature of psychological challenges encountered, and on the other hand, the level of intervention for both genders could be determined by trends and patterns among both genders. The questions that guided the study were as follows:

1. What are the prevalence and type of psychological challenges that gifted individuals face during their development?
2. What are the differences between male and female gifted individuals regarding the psychological problems they encounter during their development?
3. Do male and female gifted individuals differ on the average number of challenges they face?

## Methods

### Research Design

The objective of this study was to investigate the prevalence of psychological challenges faced by gifted individuals who were winners of science contests. The researcher used a quantitative method to answer the research questions and highlight the trends and patterns in psychological challenges between both genders. By employing a quantitative research design, this study aims to provide a high-level understanding of the psychological challenges faced by winners of science competitions to generate actionable insights and inform

interventions to support the well-being and mental health of those talented individuals.

### Participants

The participants in this study consisted of 112 gifted individuals (75 males, 37 females) who had won at least one international or national science competition or fair (e.g., Junior Science Olympiad, Physics Olympiad, Chemistry Olympiad, International Science & Engineering Fair [ISEF], etc.). The sample was drawn from a pool of more than 1,500 eligible candidates received an online invitation to join a hackathon in giftedness and creativity. Students who won one or more medals were considered gifted individuals as eminent (Subotnik et al., 2011). Individuals were asked to attach evidence of their achievements. Approximately 15.2% of participants won only one medal, 40.2% two medals, 23.2% three medals, 10.7% four medals, 3.6% five medals, and 7.1% six medals. The sampling procedure was based on a convenience sample. Their age ranged from 19 to 31 years ( $M = 22.84$ ,  $SD = 2.32$ ). They represented 34 countries from four continents: North America ( $n_1 = 22$ ), Europe ( $n_2 = 30$ ), Asia ( $n_3 = 12$ ), and the Middle East ( $n_4 = 48$ ). The majority of individuals were university students (74.1%), and the rest were employees. Most participants were either enrolled in or had graduated from top universities according to QS rank (44 participants were from the top 100 universities).

### Measurements

#### Psychological Challenges

The researcher surveyed most of the psychological challenges facing gifted students (Aljughaiman, 2019; Cross, 2012; Farmer, 1993; Delisle & Galbraith, 2002; Neihart, 1999, 2012; Yeung et al., 2005; Yaman & Sökmez, 2020). He reported 17 prominent challenges articulated in the literature. These challenges included the following: stress, perfectionism, self-criticism, fear of failure, low self-confidence, anxiety, unreasonable expectations, high expectations from others, low self-esteem, depression, indecisiveness, low motivation, sensitivity to criticism, weak emotional regulation, low independence, guilt, and hyperexcitability. Participants were presented with a list of these challenges and were asked to select the most prominent psychological challenges they had faced during their developmental path. Participants could select more than one challenge from the list. Individuals' responses were coded one if they indicated experiencing such a challenge or zero if not. The reliability estimates of the survey, as indicated by Cronbach's alpha, was .83.

## Procedure

### Data Collection

Data were collected from participants through a survey which contained

information about the individuals' demographics, education, and medals won in national or international competitions (gold, silver, bronze, or equivalent). Additionally, the survey included a list of psychological challenges. The participants were asked to select any challenges they faced from the list during their schooling years (see Table 1). Participants agreed voluntarily to participate in the study and consented an e-form.

### Data Analysis

Several hypotheses were developed corresponding to the research questions: (a) Talented individuals experience a high prevalence and wide range of psychological challenges during their developmental stages; (b) Male and female gifted individuals encounter the same types of psychological problems during their development; (c) Gifted male and female encounter roughly the same number of difficulties on average. Descriptive and inferential statistical procedures and techniques were used to answer the research questions, including frequency, means, standard deviation, percentage, chi-square, and t-test. The alpha level for all analyses was specified at 0.05 to control for type I error and type II error was controlled at  $(1-\beta) = .80$ .

**Table 1: Rank of Psychological Challenges and Chi Square Results of Gender Differences on these Challenges (N=112, df=1)**

Psychological Challenge	f	Percentage	M	SD	$\chi^2$	P
Stress	44	39.3%	.39	.49	.049	.826
Perfectionism	42	37.5%	.38	.49	.132	.717
Self-criticism	36	32.1%	.32	.17	4.430 <sup>a</sup>	.035
Low self-esteem	36	32.1%	.15	.36	.019	1.00*



Psychological Challenge	f	Percentage	M	SD	$\chi^2$	P
Fear of failure	27	24.1%	.24	.43	.257	.612
Anxiety	27	24.1%	.24	.43	.813	.367
Unreasonable expectations	22	19.6%	.2	.40	2.731	.098
Low self-confidence	20	17.9%	.06	.24	1.870	.171
Sensitivity to criticism	17	15.2%	.15	.36	.119	.730
High expectations from others	17	15.2%	.15	.36	.119	.730
Depression	16	14.3%	.14	.35	1.722	.189
Low motivation	14	12.5%	.13	.33	.974	.381*
Reluctant to make a decision	12	10.7%	.11	.31	.001	1.00*
Guilt	12	10.7%	.05	.23	.000	.987
Weak emotional regulation	8	7.1%	.07	.26	.251	1.00*
Low independence	7	6.3%	.06	.24	3.684	.055
Hyperexcitability	5	4.5%	.04	.21	.115	1.00*

\*Fisher's Exact Test was used when  $\chi^2$  assumption was violated

## Results

### Question 1: What are the prevalence and type of psychological challenges that gifted individuals face during their development?

Nearly 67.9% of the gifted individuals indicated that they suffered from one or more psychological challenges during their schooling years. The four most frequent psychological challenges were stress (39.3%), perfectionism (37.5%), and self-criticism and low self-esteem (32.1%). The least common were low independence (6.3%) and hyperexcitability (4.5%). Around 14.3% of the sample experienced critical psychological problems like depression, and approximately 32.1% of the sample did not indicate any psychological challenges. Table 1 shows the frequencies of psychological challenges across the sample. On average, gifted individuals indicated that they experienced more than two different psychological challenges during their developmental path ( $M = 2.69$ ,

$SD = 2.78$ ). Moreover, around 50% of the sample experienced three psychological challenges during their developmental path.

### Question 2: What are the differences between male and female gifted individuals with regard to the psychological problems they encounter during their development?

$H_0: O = E$ ,  $H_1: O \neq E$

The author examined the nondirectional null hypothesis that there was no apparent relationship between gender and psychological challenges in gifted individuals. A chi-square test of independence was performed to examine the relationship between gender and psychological challenges faced by gifted individuals. Table 1 consisted of all  $\chi^2$  results across all psychological challenges. The results showed that there were no significant associations between gender and psychological challenges except in self-criticism, which was more prevalent in males. In other words, male gifted individuals were more inclined to criticize themselves than were female individuals. Gifted females were more likely to experience the same challenges as males.

**Question 3: Do male and female gifted individuals differ on the average number of challenges they face?**

$$H_0: \mu_m = \mu_f, H_1: \mu_m \neq \mu_f$$

The researcher examined the nondirectional null hypothesis that there was no mean difference between male and female gifted individuals in the number of psychological challenges they face during their development. An independent sample t-test was performed to compare the average number of psychological problems between male and female gifted individuals. The results showed that there was no significant difference in the average number of challenges between male and female individuals (see Table 2). The result indicated that both males and females experience, on average, the same number of psychological challenges.

**Table 2:** Difference between Male and Female on Average Number of Psychological Challenges (N=112)

Gender	n	Mean	SD	t	df	p
Male	75	2.91	2.69	1.189	110	.237
Female	37	2.24	2.95			

**Discussion**

The researcher surveyed gifted individuals who won medals in science competitions regarding the most prominent psychological challenges they faced during their development. The top three psychological challenges facing gifted individuals were stress, perfectionism, and self-criticism. According to the author, although talented and gifted people experience psychological difficulties throughout their developmental journey,

science contestants may experience more severe difficulties when they compete nationally or internationally because they feel as though their abilities are being tested and they want to impress others with their exceptional performance. Moreover, there is a connection between the psychological difficulties and gifted individuals. Gifted people often face a perfect storm of psychological difficulties, such as stress, perfectionism, and self-criticism, due to their high expectations

from others, fear of failing, extreme sensitivity, and sense of isolation. The result of the current study is in alignment with previous research findings. Two of the three characteristics (stress and perfectionism) were reported in other studies (Orange, 1997; Dixon et al., 2004; Chan, 2012; Peterson et al., 2009). Stress is associated with age (Peterson et al., 2009) because gifted individuals become aware of the challenges of being intelligent individuals and need to prove it to others. In Peterson's study, gifted individuals in high school showed a high stress level compared with elementary and middle-school students. In the context of perfectionism, previous research has found that between 29 and 42 % of gifted students encounter this difficulty (Dixon et al., 2004; Chan, 2012). The present study found that a comparable proportion of the participants, 40.6%, also struggled with perfectionism. Self-criticism was identified as a prominent obstacle in the present investigation, as reported by 32.1% of the participants.

In the current study, all psychological challenges surveyed were reported with varying degrees of prevalence among the study sample. The other 14 psychological problems were found among gifted individuals ranged, in descending order, from 24.1% to 4.5% (see Table 1): fear of failure (24.1%), anxiety (24.1%), unreasonable expectations (19.6%), low self-confidence (17.9%), sensitivity to criticism (15.2%), high expectations from others (15.2%), depression (14.3%), low motivation (12.5%), reluctant to make a decision (10.7%), guilt (10.7%), weak emotional regulation (7.1%), low independence (6.3%), and

hyperexcitability (4.5%). It should be noted that these challenges are critical for gifted counseling and reported in other studies (Aljughaiman, 2019; Cross, 2012; Farmer, 1993; Delisle & Galbraith, 2002; Neihart, 1999, 2012; Yaman & Sökmez, 2020; Yeung et al., 2005). Worth noting that the gifted individuals in the current study were drawn from a pool of medal winners at national and international level (gold, silver, and bronze), therefore the findings are not surprising considering the participants' unique characteristics.

Furthermore, except for self-criticism, which was more common in males, the data indicated no significant correlations between gender and type of psychological difficulties. In other words, gifted males are more likely than gifted females to be critical of themselves. On the other hand, talented women were more likely to face the same difficulties as men. With regards to the differences in the number of challenges encountered by gender, the results showed no statistical differences between the sexes with regard to the average number of psychological problems. Other studies support these findings indicating that no sex difference in perfectionism among gifted individuals. However, several studies found that females are often more likely to experience perfectionism than males (Kramer, 1988; Baker, 1996; Chan, 2012).

In summary, gifted individuals who won science competitions universally experienced psychological challenges that might impact their mental health. According to the current study, nearly 68% of the science contests' winners experience two or more psychological challenges,

39.3% of gifted individuals face stress, 37.5% struggle with perfectionism, and 32.1% struggle with self-criticism and low self-esteem. While these challenges may be more intense for individuals who compete in national or international contests where their abilities are on the line, they are also prevalent in the gifted population to varying degrees. The study also found that gifted population face other challenges with varying prevalence, including fear of failure, low self-confidence, anxiety, unreasonable expectations, high expectations from others, depression, indecisiveness, low motivation, sensitivity to criticism, weak emotional regulation, low independence, guilt, and hyperexcitability. These challenges were less prevalent than stress, perfectionism, self-criticism and low self-esteem for this sample. The results showed no statistical differences between the sexes regarding types and average of psychological challenges. The findings highlighted the importance of identifying psychological challenges to help gifted individuals succeed in development journey and to prepare various stakeholders in gifted education to be aware of these challenges when deal with gifted students.

### **Limitations**

There were several limitations to the current study. First, the pool of participants came from gifted individuals who won national or international medals (gold, silver, or bronze), so these results may be interpreted with caution. Second, the sample included participants from different cultures and backgrounds who voluntarily joined the study, so the results

may be affected by students' culture of upbringing and norms. Third, the sample included participants from universities of different rankings, so their responses could be affected by the educational demand, attainment, and stress they encountered. Fourth, most of the participants came from the Middle East region, so the results may be affected by this factor due to language barriers, social norms, limited resources and education inefficient systems.

### **Conclusion**

The study surveyed gifted individuals who won medals in science competitions regarding psychological challenges they faced during their development path, with stress, perfectionism, and self-criticism emerging as the top three challenges. These findings align with previous research indicating that stress and perfectionism are prevalent among gifted individuals. The study also highlights the impact of participation in national or international competitions in exacerbating these challenges, as individuals feel the need to prove their abilities to others. Additionally, the study identified a range of other psychological problems among gifted individuals, including fear of failure, low self-confidence, anxiety, and depression. These challenges reported in the current study are consistent with existing literature on giftedness and underscore the importance of addressing the multifaceted needs of gifted individuals. Interestingly, the study found no statistical differences between the gender in terms of types and average number of psychological problems surveyed except in self-criticism favoring males, contradicting some previous findings. While some studies have

suggested that females may be more likely to experience perfectionism, this study did not find evidence to support such differences. Overall, the study contributes valuable insights into the psychological challenges faced by gifted individuals, emphasizing the need for targeted interventions and support strategies to promote their well-being and success.

### **Recommendations and Implications**

Maslow's theory (1943; 1954) proposed that individuals, including the gifted, must go through a progression of satisfying different needs, to ultimately arrive at self-actualization. In this state, they can fully realize their special potential and harness their exceptional talents in a balanced and meaningful way. Thus, several recommendations and implications were considered. First, parents, educators, counselors, higher education institutions, and employers must be aware of gifted individuals' challenges and prepare intervention programs for those who suffer from psychological problems (Ishak & Bakar, 2010). They are encouraged to provide a supportive environment for gifted individuals to deal with their psychological problems (Masten & Coasworth, 1998). Second, gifted individuals should participate in counseling programs to cope with the psychological challenges they may encounter due to being labeled as gifted (Yaman & Sökmez, 2020). Counseling is important in enhancing the well-being and achievement of gifted college students by addressing their unique emotional, social, and academic needs. By providing tailored support, guidance, and counseling services can foster personal growth and resilience,

ultimately contributing to the overall success and prosperity of talented students in their achievement endeavors. Third, male and female gifted individuals may benefit from similar psychological interventions and support services. Fourth, supportive programs should be included in both local and international competitions to help gifted individuals overcome some of the difficulties they may face. Finally, it is important for service providers to recognize the unique needs of gifted students and provide a supportive, challenging academic environment that fosters their intellectual and emotional growth (Yaman & Sökmez, 2020).

The author exhorts other investigators to carry out additional study. First, the sample for our study consisted of talented people who had previously graduated, won national or international competitions, or were enrolled in college. This allowed later researchers to perform additional research in various contexts, such as high school and workplace. Second, the author used an online survey to collect data; therefore, further in-depth interviews might be required to obtain additional insights. Third, teachers and psychologists who run programs for gifted people might serve as a sample in a later study to track the psychological difficulties those people face. Fourth, further research exploring the underlying factors contributing to these challenges and their impact on gifted individuals' development is warranted to inform effective interventions and support services. Lastly, it is recommended that researchers assess how counseling affects the prosperity and success of gifted individuals.

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