

# Fear of Missing Out as a Mediating Variable between Social Anxiety and Internet Gaming Disorder among Adolescents in Bisha Governorate Schools

Uhuud F. Al-Assaf<sup>1\*</sup>, Nadia M. Ghoneim<sup>2</sup>, and Sotouhi S. Al-Lawwaj<sup>1</sup>

<sup>1</sup>Department of Psychology, Faculty of Education, University of Bisha, Bisha, Saudi Arabia

<sup>2</sup>Department of Psychology, Faculty of Humanistic Studies, Al-Azhar University, Tafhna AL Ashraf, Egypt

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**Abstract:** In this study, we investigated the mediating role of fear of missing out in the relationship between social anxiety and Internet gaming disorder among adolescents in Bisha Governorate schools. The participants in the main study were (700) male and female adolescent students in Bisha Governorate. The results revealed that there were direct positive effects of social anxiety on both internet gaming disorder and fear of missing out, and there were direct positive effects of fear of missing out on internet gaming disorder. There were also statistically significant differences between male and female students in social anxiety in favor of the females. However, there was no statistically significant difference between the mean scores of the sample members in the total score of the social anxiety scale due to the secondary school year variable (first, second, and third grades). Furthermore, it was revealed that there were statistically significant differences between males and females in fear of missing out in favor of the male students. However, there was no statistically significant difference between the mean scores of the sample members in the total score of the social anxiety scale due to the secondary school year variable (first, second, or third grade). Finally, the results showed that there were statistically significant differences between the responses of the sample members in the total score of the internet disorder scale according to the secondary school year variable (first, second, and third grades) in favor of the third grade.

**Keywords:** Fear of Missing Out, Social Anxiety, Internet Gaming Disorder, Adolescents.

## 1-Introduction

Internet gaming emerged as a form of technological advancements and was characterized by profound influence and spread [1]. It has become an essential part of daily life for most individuals. Furthermore, it has rapidly spread throughout the Arab and Gulf societies, with few homes or stores being without it. The average Saudi spends around \$400 or more per month on electronic entertainment games. The study also estimated that the Saudi market comprises of approximately 3 million electronic games per year, in addition to about 1.8 million PlayStation devices [8].

The Kingdom of Saudi Arabia is one of the Middle Eastern countries with the highest number of electronic game users. According to Boston Consulting Group, the estimated number of users is 23.5 million across various platforms, which is roughly 67% of the population, spending a little over one billion US dollars (3.8 billion Saudi Riyals). The number of internet users in Saudi Arabia was estimated to be 36.3 million at the start of 2023, which is approximately 500,000 more users compared to the previous year [15].

It is believed that gaming has developed to the point that it can be considered a mental disorder. The World Health Organization (WHO) has officially recognized this condition as "Gaming Disorder" [14], [29], [33] and [42].

The American Psychiatric Association (2013) has included "Internet Gaming Disorder" in its 5TH Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Similarly, the World Health Organization (WHO) has included "Gaming Disorder" in the 11TH Revision of the International Classification of Diseases (ICD-11) [29], [33] and [45].

Nine diagnostic criteria for internet Gaming Disorder (IGD). These criteria include preoccupation with games, withdrawal from other gaming activities, reckless disregard for the effects of gaming, harmful use of gaming as a means of repressing negative emotional experiences, social or professional disturbances due to playing games, trying and failing to control online gaming time, intentionally concealing problems related to internet gaming, and becoming

\*Corresponding author e-mail: [uhuud2017@gmail.com](mailto:uhuud2017@gmail.com)

irritable and moody if they cannot access the internet [14], [34] and [43].

Internet gaming disorder is a widespread issue that can result in serious health and developmental problems due to excessive use. Those who are affected by gaming disorder often have weaknesses such as impulsiveness and risk-taking, as well as psychological symptoms like anxiety and depression [25] and [30]. Children and adolescents who experience gaming disorder may also suffer from mental health problems, hyperactivity, depression, and episodes of violent behavior [16]. In addition to mental health issues, excessive gaming can have negative physical effects such as back pain, spinal problems, muscle tension, and nervous spasms [14].

Social anxiety is the core of generalized anxiety disorder, which is the origin and center of all disorders, not only in mental illnesses but also in normal and abnormal behaviors of individuals. It was found that individuals with anxiety disorders tend to be alone with someone of the opposite sex more online, have excessive smartphone use, and are prone to online gaming addiction [5], [13], [25] and [30].

Online gaming disorder can be seen as a substitute for real-life social activities. Online games often include social interactions, which could be an attractive option for those who experience anxiety or distress in social situations [27] and [43]. For socially anxious players who prefer online more than face-to-face communication, playing internet-based games is a safe way to make friends and establish relationships [17]. Online gaming is a widely popular form of entertainment for millions of people worldwide. This is because it allows individuals to create new relationships, imitate others' behaviors, and temporarily escape from reality [29]. Thus, social anxiety is a key predictor of internet gaming disorder [34].

According to the Cambridge Dictionary, FoMO is the fear of missing out on exciting events, especially due to social media. The fear of missing out is a global phenomenon experienced by many individuals [12]. It is a construct that includes unmet social needs and results from depression and social anxiety, leading to frequent checking of communication platforms [18].

Accordingly, FoMO is a psychological construct primarily linked to anxiety as a part of negative emotion [12] and [20]. Studies have shown that individuals with a high level of FoMO may also be more likely to experience social anxiety disorder and other types of disorders [12] and [38].

Individuals who fear missing out tend to engage in compensatory online gaming and other digital activities [20] and [23]. Fear of missing out was found to be a mediator of the relationship between social anxiety and excessive use of Facebook [18] and [21].

Adolescents often experience negative emotions which they may attempt to cope with by playing online games. The study also found that among adolescents with internet gaming disorder, the fear of missing out is associated with higher levels of anxiety and depression [43]. The fear of missing out is a phenomenon that is often considered a factor that influences the relationship between a person's characteristics and the adverse effects of social networks on their psychological and mental health [24].

Subsequently, this study sought to investigate whether fear of missing out mediates the relationship between social anxiety and internet gaming disorder among adolescents attending schools in Bisha Governorate. The research model assumes that there are direct, significant, and positive relationships between social anxiety and internet gaming disorder. Additionally, it considers the presence of fear of missing out as an intervening mediating variable that leads to an indirect relationship between social anxiety and internet gaming disorder.

## 2- Theoretical Framework

### Fear of Missing Out (FoMO)

The term "fear of missing out" (FoMO) first appeared in the media in 2010, around the same time as the rise of social networking. It quickly gained widespread use to describe a phenomenon observed on social networking sites worldwide [26]. In 2013, British psychologists coined the term (FoMO) as the universal fear of missing out on rewarding experiences that others may have [11]. The term "fear of missing out" was officially added to the Oxford dictionary in 2013. It became a widely used term due to the rise of social networks and the increased availability of smartphones, which made it easy to access social platforms and interfere in other people's business. This led people to compare their own lives with others, and the psychological and social consequences of excessive use of social networks started to become more evident [46]. Przybylski and his colleagues coined the term "fear of missing out" was initially introduced in psychology [36]. Through their first experimental study on this topic. It focused on the excessive use of social networks, where individuals experience a sense of fear and regret for missing out on interesting experiences shared by others on these platforms [43].

## **Fear of Missing Out and Social Anxiety**

Since the fear of missing out is a psychological construct that is mainly connected to anxiety and social anxiety, researchers have examined the relationship between the fear of missing out and anxiety in samples of adolescents and adults using a correlational approach. A positive relationship between the fear of missing out and the severity of anxiety and social anxiety [12], [16] and [18]. The fear of missing out is a type of social anxiety that stems from the perception that others are experiencing more satisfying lives than oneself [3], [20] and [38]. The fear of missing out is described as a concerning condition [20].

## **Fear of Missing Out and Internet Gaming Disorder**

A positive correlation between fear of missing out and internet gaming disorder; impulsivity partially mediated this relationship, while the effect of gender was more significant. Such results helped deepen understanding of the connection between fear of missing out on events and electronic gaming disorder [31], [32] and [41].

## **Relationship between Social Anxiety and Internet Gaming Disorder**

Social anxiety is a prevalent mental disorder among individuals who suffer from internet gaming disorder. This mental health disorder has an annual incidence rate of 1-4% and a lifetime prevalence of 4-7%, making it a vital indicator for predicting internet gaming disorder [33]. Online gaming disorder and anxiety are closely associated, particularly social anxiety. Most players who experience social anxiety believe that they can maintain their safety and control their environment through the game, compensating for their lack of social interaction in the real world [15] and [43]. One of the diagnostic criteria for internet gaming disorder in DSM-5 is using online games as a coping mechanism to alleviate negative moods or escape from stressful situations. Individuals who experience social anxiety may turn to online gaming to alleviate feelings of social anxiety and improve their emotional state. Therefore, social anxiety may contribute to the development of online gaming disorder [5] and [44].

## **Fear of Missing Out, Social Anxiety and Internet Gaming Disorder**

There is a paucity of studies examining the mediating effects of fear of missing out, social anxiety, and internet gaming disorder. Social identity strongly was found to affect internet gaming addiction, with fear of missing out as a mediating factor [22]. There is a correlation between anxiety, depression, and internet gaming disorder; anxiety predicts internet gaming disorder to a greater extent. In addition, the fear of missing out plays a mediating role in the relationship between anxiety and depression [43]. Thus, fear of missing out significantly mediates the relationship between anxiety and internet use addiction [21], [22] and [41].

## **3- Hypotheses**

1. There is no statistically significant direct effect of social anxiety on internet gaming disorder among adolescents in Bisha Governorate schools.
2. There is no statistically significant direct effect of social anxiety on fear of missing out among adolescents in Bisha Governorate schools.
3. 3-There is no statistically significant direct effect of fear of missing out on internet gaming disorder among adolescents in Bisha Governorate schools.
4. There is no indirect effect of social anxiety on internet gaming disorder through fear of missing out as a mediating variable among adolescents in Bisha Governorate schools.
5. There is no statistically significant difference in the mean scores of the participants in social anxiety due to the gender or year of study.
6. There is no statistically significant difference in the mean scores of the participants in fear of missing out due to the gender or year of study.
7. There is no statistically significant difference in the mean scores of the participants in internet gaming disorder due to the gender or year of study.

## **4- Methods**

The current study adopted the descriptive, correlational, and comparative research method to validate the research hypotheses. This method is appropriate for understanding the direct and indirect effects between the three variables, as well as differences among research participants according to certain variables.

## 5- Population:

Population for this study comprises all male and female adolescent students studying in the three grades of secondary school in Bisha Governorate schools, during the first semester of the academic year (1445 AH - 2023 AD). The total number of students in this population is (18,700).

**Participants in the pilot study:** The study included (121) male and female students in the secondary stage from Bisha Governorate who participated in the exploratory research. This sample was used to verify the psychometric properties of the instruments, which include Fear of Missing Out, Social Anxiety, and internet Gaming Disorder scales.

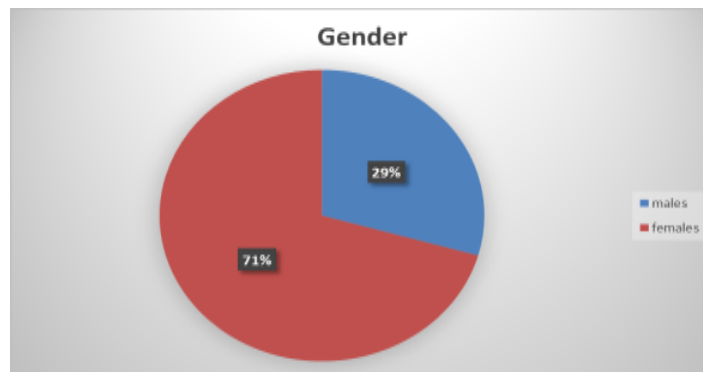
**Participants in the main study:** The sample size was determined using the simple random sampling method. This method involves randomly selecting sample members to ensure sampling equivalence. The Steven K. Thompson equation was used to calculate the minimum random sample size, which was found to be 377 male and female students out of a total study population of 18,700 male and female adolescent students in Bisha Governorate schools [39].

The researchers electronically published and distributed the instruments to the target population on October 18th, 2023, while considering the variables and characteristics of the original community. They received 700 complete responses, and the tables and figures below show the total number of participants in the study sample, along with basic data and their distribution based on study classification variables and sample characteristics.

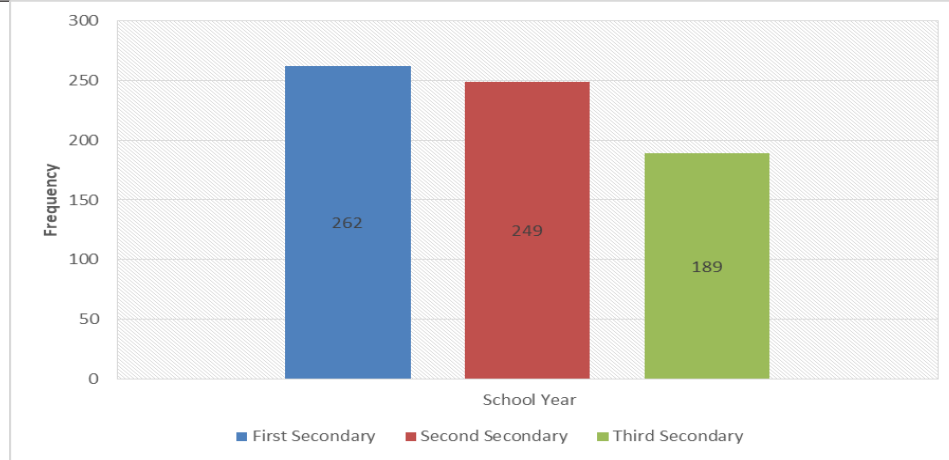
**Table 1:** Distribution of the participants due to their characteristics (n=700) male and female students

Variables	Categories	Frequencies	percentiles
Gender	Male	206	<b>%29.4</b>
	Female	494	<b>70.6%</b>
	Total	700	<b>%100</b>
Secondary School Year	First Year	262	<b>37.4%</b>
	Second Year	249	<b>35.6%</b>
	Third Year	189	<b>27.0%</b>
	Total	700	<b>%100</b>

The above table indicates that 29.4% of the participants are male students, while 70.6% are female students. This shows that the majority of the sample participants are female. The same information is also depicted in Figure (1), which shows the distribution of the study sample in terms of gender.



**Fig. 1:** the distribution of participants in terms of gender



**Fig. 2:** Distribution of the participants in terms of academic year

Similarly, figure (2) illustrates that 37.4% of the participants are from the first year of secondary school, 35.6% are from the second year, and 27% are from the third year. This suggests that the majority of the participants are from the first year of secondary school.

## 6- Measurements

### A- Fear of Missing Out Scale (FoMO):

The scale aimed to measure the fear of missing out among adolescent students in schools located in Bisha Governorate, Kingdom of Saudi Arabia. The initial form consists of 15 items, each with five alternatives (always, often, sometimes, rarely, never). Students select only one alternative that applies to them by placing a mark (√) under the appropriate choice for each phrase. The statements are then scored by awarding five marks for the answer "always," four marks for the answer "often," three marks for the answer "sometimes," two marks for the answer "rarely," and one mark for the answer "never." The researchers took into account the psychometric properties when formulating the scale's items.

#### The psychometric properties of FoMO

**First:** The validity of the scale relied on two types: the jury' validity and the validity of the discriminant comparison validity. Internal consistency was also calculated, from which it became clear that the values of the correlation coefficients ranged between (0.536-0.757), and all of these values were statistically acceptable, and the number of items of the scale in the final form became (15) items.

**Second:** The researchers used Cronbach's Alpha and test - retest methods to the exploratory sample twice, with an interval of (18) days, to ensure the reliability of the scale. The reliability coefficient using the Cronbach's Alpha method reached (0.884) for the total items of the scale, while the reliability coefficient with the test - retest method reached (0.843), and this indicates that the fear of missing out scale has a high degree of reliability that can be relied upon in the field application of the study.

### B- Social Anxiety Scale

The researchers used the Social Anxiety Scale [2], which consists of 23 items to measure social anxiety for their current research.

**Psychometric properties of the Social Anxiety Scale in its original form:** The validity of the scale was assessed by calculating the internal consistency of the Social Anxiety Scale. The researchers estimated the correlation coefficient of each item with the total score of the scale. The reliability was calculated by Split half, and the reliability coefficient reached (0.887).

**Psychometric properties of the social anxiety scale in the current research:** The researchers adopted two types of validity: the discriminant comparison validity and self-validity of the scale. The internal consistency was calculated, and the values of the correlation coefficients ranged between (0.320-0.832.) All of these values were statistically acceptable, and the number of items in the scale became the final form containing (23) items, verifying the internal consistency of the scale. To measure the reliability of the Social Anxiety Scale, the researchers utilized Cronbach's Alpha and test-retest methods as the scale was administered to the sample twice with a two-week interval. The reliability coefficient with the Cronbach's Alpha method reached (0.827) for the total items of the scale, while the reliability coefficient with the test-retest method reached (0.811). This indicated that the social anxiety scale has a high degree of reliability that

can be relied upon in the field administration of the study.

After calculating the validity and reliability of the social anxiety scale, its final form consisted of (23) items. The scale was completed by responding on 5-Point Likert Scale: always, often, sometimes, rarely, never. A score of (5) is given for answering always, (4) for answering often, (3) for answering sometimes, (2) for answering rarely, (1) for answering never, with the exception of negative items, which were assigned the opposite: numbers 3, 6, 9, 13, 15. A high score on the scale indicated high social anxiety among adolescent students, while a low score indicated the opposite direction.

### C- The Internet Gaming Disorder Scale

The internet gaming disorder Scale was used to measure internet gaming disorder among adolescent students in Bisha schools in the Kingdom of Saudi Arabia. The scale consists of (17) items, each with five alternatives (always, often, sometimes, rarely, never). Students choose only one alternative that applies to them in front of each item of the scale by placing a check (✓) under the appropriate choice. The statements are then scored, with five marks for the answer "always," four marks for "often, three marks for "sometimes," two marks for "rarely" and one mark for "never".

The scale's psychometric properties were evaluated in terms of validity, and reliability. Two types of validity were considered: judges' validity and discriminant comparison validity. Internal consistency was also calculated, and the values of the correlation coefficients ranged between (0.378) and (0.824,) all of which were statistically acceptable. The number of items in the final form was (17), and the internal consistency of the scale was verified.

To measure the scale's reliability, the researchers used Cronbach's Alpha and test-retest methods to the exploratory sample twice with a two-week interval. The reliability coefficient using the Cronbach's Alpha method was (0.924) for the total items of the scale, while the reliability coefficient using test-retest method was (0.931). These results indicate that the internet gaming disorder scale has a high degree of reliability that can be relied upon in the field application of the study.

### 7- Statistical Analysis:

The researchers utilized a path analysis method with the AMOS statistical program to identify the direct and indirect effects of the research variables. Additionally, they employed the *t*-test for two independent samples, the one-way analysis of variance test, the Mann-Whitney test, and the Kruskal-Walls test using the SPSS statistical program to detect differences between sample categories based on gender, and year of study [9].

### 8- Results and Discussion

**Results of the first hypothesis:** It states that: "There is no statistically significant direct effect of internet gaming disorder among adolescents in Bisha Governorate schools". To validate this hypothesis, the path analysis method was used to calculate the direct effects, unstandardized and standardized regression coefficients, standard error, and critical value equivalent to the "*t*" value, and their significance, as shown in table (2).

**Table 2:** Direct effects and unstandardized and standardized regression coefficients of social anxiety on internet gaming disorder (n=700)

Variables and effect direction		unstandardized regression coefficients	Standardized error	critical value	standardized regression coefficients	Sig. levels
from	to					
Social anxiety	internet gaming disorder	0.334	0.035	9.437	0.303	0.000***

Critical value = *t*. value \*\*\* significance at (0.001)

It is evident from table (2) that the nonstandard regression coefficients for social anxiety in internet gaming disorder have a value of (0.334,) while the standard regression coefficients are equal to (0.303). These values are statistically significant at the level of 0.001, which indicates the presence of positive direct effects of social anxiety in internet gaming disorder. This means that the null hypothesis is rejected, and the alternative hypothesis is accepted. It implies that there were direct, statistically significant effects of social anxiety on internet gaming disorder among adolescents in Bisha Governorate schools. This result is consistent with a plethora of studies where it was found that individuals with anxiety disorders are more likely to engage in online conversations with individuals of the opposite sex that are not permitted, excessively use smartphones, and develop addiction to online games [13], [25] and [30].

The current result also agrees with the studies of [27] and [43], which suggest that online gaming disorder provides an alternate social life and helps avoid distress and anxiety associated with social interactions because online gaming includes social games. The current researchers explain this finding as online gaming is considered a safe place where students can make friends and establish alternative relationships away from socially disturbing communication. Therefore, students prefer online communication more than face-to-face confrontation. Online gaming is an essential

leisure activity for many individuals, and it provides an environment in which an individual can form new relationships, assume a false identity online, and escape from the reality in which they live.

**Results of the second hypothesis:** It states that: There is a statistically significant direct effect of social anxiety on fear of missing out among adolescents in Bisha Governorate schools. To validate this hypothesis, the path analysis method was used to calculate the direct effects, unstandardized and standardized regression coefficients, standard error, and critical value equivalent to the “t” value, and their significance, as shown in table (3).

**Table 3:** Direct effects and unstandardized and standardized regression coefficients of social anxiety on fear of missing out (n=700)

Variables and effect direction		Unstandardized regression coefficients	Standardized error	Critical value	Standardized regression coefficients	Sig. levels
from	to					
Social anxiety	internet gaming disorder	0.388	0.031	12.509	0.428	0.000***

Critical value = t. value \*\*\* significance at (0.001)

Table (3) indicates that the non-standard regression coefficient for social anxiety in fear of missing out is (0.388). The standard regression coefficients are (0.428,) which are statistically significant at the level of (0.001). This implies a positive and direct effect of social anxiety on fear of missing out. Thus, we can reject the null hypothesis and accept the alternative hypothesis, which means that there were statistically significant direct effects of social anxiety on the fear of missing out among adolescents in Bisha Governorate schools.

This finding is in agreement with the many studies, which showed that there is a positive correlation between the fear of missing out and the severity of anxiety and social anxiety [12], [16] and [17]. The researchers explain that the fear of missing out is a form of social anxiety which leads the individual to constantly monitor their social media for fear of missing out. As a result, the individual seeks to be a follower of everything others do to live a more satisfying life than those around them. Therefore, the fear of missing out is a worrisome condition which is consistent with a number of studies [3], [20] and [38].

**Results of the third hypothesis:** It states that: “There is no statistically significant direct effect of fear of missing out on internet gaming disorder among adolescents in Bisha Governorate schools”. To validate this hypothesis, the path analysis method was used to calculate the direct effects, unstandardized and standardized regression coefficients, standard error, and critical value equivalent to the “t” value, and their significance, as shown in table (4).

**Table 4:** Direct effects and unstandardized and standardized regression coefficients of fear of missing out on internet gaming disorder (n=700)

Variables and effect direction		unstandardized regression coefficients	Standardized error	critical value	standardized regression coefficients	Sig. levels
from	to					
fear of missing out	internet gaming disorder	0.545	0.039	13.957	0.449	0.000***

Critical value = t. value \*\*\* significance at (0.001)

It is evident from table (4) that the non-standard regression coefficient for fear of missing events in internet gaming disorder is (0.545), and the standard regression coefficient is (0.449). These values are statistically significant at the (0.001)level, which indicates that there are positive direct effects of fear of missing events in internet gaming disorder. This means that we can reject the null hypothesis and accept the alternative hypothesis, which states that there are statistically significant direct effects of fear of missing events in internet gaming disorder among adolescents in schools in Bisha Governorate.

This result showed a positive relationship between fear of missing out and electronic gaming disorder which is consistent with the findings of many studies [31] and [32], which also indicated a relationship between fear of missing events and electronic gaming disorder. The researchers suggest that people continue to follow experiences, events, and benefits that others and friends obtain, which may lead to social comparisons and a decreased feeling of happiness and satisfaction with their own experiences and events. This preoccupation with what others has instead of accomplishing their academic and social tasks may result in students using electronic games to evaluate themselves. This addiction to using electronic games increases when students online communicate with others and share events and experiences with them in order to feel a sense of belongingness, connection, and approval.

**Results of the fourth hypothesis:** It states that: “There are no statistically significant indirect effects of social anxiety on internet gaming disorder through fear of missing out as a mediating variable among adolescents in Bisha

Governorate schools. To validate this hypothesis, the Bootstrap method (within the path analysis) was used to calculate the indirect effects, unstandardized and standardized regression coefficients, as shown in table (5).

**Table 5:** Indirect effects and unstandardized and standardized regression coefficients of social anxiety on internet gaming disorder through fear of missing out (n=700)

Variables and effect direction from  to		Unstandardized regression coefficients	Standardized regression coefficients	Sig. levels	Confidence interval (95%)	
					lower	upper
Social anxiety	internet gaming disorder	0.043	0.089	0.000***	0,010	0,038

\*\*\* significance at (0.01)

\* significance at (0.05)

It appears from table (5) that the non-standard regression coefficients for social anxiety in internet gaming disorder through fear of missing out as a mediating variable is (0.043), and the standard regression coefficients are (0.089). These values are statistically significant at the (0.01) and level of confidence (95%). This suggests that there are indirect effects of social anxiety on internet gaming disorder through fear of missing out on events as a mediating variable, which indicates the presence of a complementary partial mediation of the fear of missing out variable. Thus, the null hypothesis was rejected, and the alternative hypothesis was accepted signifying that "There are statistically significant indirect effects of social anxiety on internet gaming disorder through fear of missing out as a mediating variable among adolescents in schools in Bisha Governorate."

This result is consistent with a number of studies that suggests individuals with anxiety disorders are more likely to engage in online conversations with individuals of the opposite sex that are not permitted, excessively use smartphones, and become addicted to online games [13 – 25 - 30]. This finding aligns with a plethora of research which suggests that online gaming disorders can substitute for real-life social experiences. Additionally, it allows individuals to avoid the distress and anxiety commonly associated with social interactions, as many online games offer social features [27] and [43]. Online gaming provides a safe environment for socially anxious players to make friends and establish relationships online rather than personal relationships [16]. Online gaming is a popular entertainment activity for millions worldwide [35]. It allows individuals to form new relationships, assume a false identity online, and escape from reality. Social media usage is an important indicator of internet gaming disorder [34].

The researchers believe that social anxiety is an important indicator of internet gaming disorder. internet gaming addiction negatively affects psychological and social adjustment, especially among adolescents. It increases isolation among students, which causes severe social anxiety at this stage that is reflected in the physical and psychological aspects.

**Results of the fifth hypothesis:** It states that "There is no statistically significant difference in the mean scores of the participants in social anxiety due to the gender or year of study. To validate this hypothesis, the researchers utilized the following statistical methods.

**First:** The significance of the differences among the study sample in social anxiety due to the gender,

**Table 6:** *t*-test results for the significance of differences among the mean scores of the study sample on the social anxiety scale due to gender

Variables	Groups	N	Mean	St. Deviation	T. value	Sig. level
Social anxiety scale total score	male	206	59.9223	13.17588	3.261-	0.001 significant
	female	494	63.5607	13.56778		

Based on the above table, it is evident that the value of "t" is statistically significant at a significance level of less than (0.01) for the total score of the social anxiety scale, as it reached (3.261). This indicates that there are significant differences between males and females in social anxiety, and females are more subjected to it. This result contradicts the findings of many studies, which showed that males have higher levels of social anxiety [6] and [10].

The researchers attribute this difference to the social upbringing and cultural norms of Gulf society. Females are expected to be more reserved and shyer, while males are given more freedom to express themselves. This social and cultural impact affects females differently, making them more anxious than males [7].

**Second:** The significance of the differences among the study sample in social anxiety due to the secondary school year (first, second or third grade).

**Table 7:** F-value significant results of the one-way analysis of variance for the total score of the social anxiety scale due to the variable of the school year (n= 700)

Variable	Variance Sources	Sum of Squares	df	Mean Square	F	Sig.
Social anxiety	Between groups	633.032	2	316.516	1.728	.178



<b>scale total score</b>	within groups	127633.898	697	183.119	Insignificant
	total	128266.930	699		

According to table (7), the (F) value obtained for the total score of the social anxiety scale was (1.728), which is a non-statistically significant value. This indicates that there are no significant differences between the mean scores of the sample members in the total score of the Social Anxiety Scale due to the school year variable (First, second or third grade) in secondary school. Therefore, this sub-hypothesis is validated.

Results of the sixth hypothesis: It states that “There is no statistically significant difference in the mean scores of the participants in fear of missing out due to the gender or year of study”. To validate this hypothesis, the researchers utilized the following statistical methods.

**First:** The significance of the differences among the study sample in fear of missing out due to gender (males - females).

**Table 8:** *t*-test results for the significance of differences among the mean scores of the study sample on the fear of missing out scale due to gender.

Variable	Groups	N	Mean	St. Deviation	T. Value	Sig. level
<b>Fear of missing out scale total score</b>	Male	206	37.2282	13.36217	5.229	.000 significant
	Female	494	31.6660	11.43461		

The previous table indicates that the value of "t" is statistically significant at a significance level of less than (0.01) for the total score of the fear of missing out scale. It reached (5.229), which shows that there are significant differences between males and females in the fear of missing out, with males being more susceptible to it. This means that the hypothesis stating there are no gender differences in the fear of missing out is not true.

This result is in contrast to another study which found no differences between males and females in the fear of missing out [4]. On the other hand, it was found that females are more likely to experience the fear of missing out [36]. The researchers explain this by stating that females in Saudi society tend not to share their news on social media or follow others' news on social media. In contrast, males have more opportunities to interact and socialize with each other without limitations.

**Second:** The significance of the differences among the study sample in fear of missing out according to the school year (first, second or third grade) of secondary school.

**Table 9:** F-value significant results of the one-way analysis of variance for the total score of the fear of missing out scale due to the variable of the school year (n= 700)

Variable	Variance Sources	Sum of Squares	df	Mean Square	F	Sig.
<b>Fear of missing out scale total score</b>	Between groups	274.149	2	137.074	.907	.404 insignificant
	within groups	105285.645	697	151.055		
	total	105559.794	699			

According to table (9), the (F) value obtained for the total score of the social anxiety scale was (0.907), which is a non-statistically significant value. This indicates that there are no significant differences between the mean scores of the sample members in the total score of the fear of missing out Scale due to the school year variable (First, second or third grade) in secondary school. Therefore, this part of the hypothesis is validated.

**Results of the seventh hypothesis:** It states that “There is no statistically significant difference in the mean scores of the participants in internet gaming disorder due to the gender or year of study”. To validate this hypothesis, the researchers utilized the following statistical methods.

**First:** The significance of the differences among the study sample in internet gaming disorder due to gender (males - females).

**Table 10:** T-test results for the significance of differences among the mean scores of the study sample on the internet gaming disorder scale due to gender

Variable	Groups	N	Mean	St. Deviation	T. value	Sig.
<b>Internet gaming disorder scale total score</b>	males	206	39.1553	16.44192	4.466	0.000 significant
	females	494	33.3259	13.90817		

It is evident from the above table that the value of (t) is statistically for the total score of the internet gaming disorder scale, reaching (4.466). This indicates that there are significant differences between males and females in internet gaming disorder, with males having higher scores. Thus, it can be concluded that the sub-hypothesis stating that there is no difference between males and females in internet gaming disorder is not true.

This finding is consistent with the results of previous studies [35] and [40], which also found differences in internet gaming disorder based on gender, with males having higher scores.

**Second:** The significance of the differences among the study sample in internet gaming disorder due to the school year (first, second or third grade) of secondary school.

**Table 11:** F-value Significant results of the one-way analysis of variance for the total score of the internet gaming disorder scale due to the variable of the school year (n= 700)

Variable	Variance Sources	Sum of Squares	df	Mean Square	F	Sig
Internet gaming disorder scale total score	Between groups	1933.678	2	966.839	4.382	.013 significant
	within groups	153790.120	697	220.646		
	total	155723.799	699			

According to table (11), the (F) value obtained for the total score of the internet gaming disorder Scale was (4.382), which is a statistically significant value. This indicates that there are significant differences between the mean scores of the sample members in the total score of the internet gaming disorder due to the school year variable (First, second, or third grade) in secondary school. Therefore, this sub-hypothesis is not validated.

To identify the direction of the differences between sample members in the internet Gaming Disorder Scale, the Scheffé test was used. The results obtained from the test are presented below in table (12)

**Table 12:** Scheffé test to determine the direction of differences in total scores of the internet gaming disorder scale based on the variable of school year (n=700 )

School Year	Mean	1 <sup>st</sup> grade	2 <sup>nd</sup> grade	3 <sup>rd</sup> grade
the 1 <sup>st</sup> grade	33.961	-----		
2 <sup>nd</sup> grade	34.104	-.14259-	-----	
3 <sup>rd</sup> grade	37.772	3.81065-	3.66807-	

According to table (12), there are differences in the total score of the internet disorder scale among the adolescent sample members based on their school year (first, second, or third grade). The mean score of the third-grade students (37.772) was higher compared to the other grades. The researchers suggest that this finding could be due to the fact that third-grade students have a greater ability to form virtual friendships through online gaming. These virtual connections may help satisfy their psychological needs for independence and identity.

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