

## Gender differences in school performance anxiety

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### Abstract

This study aimed to investigate gender differences in school performance anxiety. After defining the concept of anxiety and its symptoms, we examined the correlation between the students' views and the exposure to anxiety from a gender perspective. Furthermore, we analyzed the views and reactions of female and male students regarding social expectations on school performance while identifying and recording gender-related similarities and differences. Differences were recorded between senior high school female and male students regarding the anxiety prior to examinations, choice of studies and future profession. It is observed that girls sought school performance more actively than boys good, which increased their self-esteem and led to academic education. Moreover, social stereotypes pushed women toward higher education and not technical education.

**Keywords:** anxiety levels, social expectation, negative emotions.

### Introduction

Danish existentialist philosopher and theologian, Soren Kierkegaard, in his work "The Concept of Anxiety" (1844), describes anxiety for the first time, distinguishing it from fear. He defines anxiety as a vague concern, a feeling without a concrete object, broader and more undetermined than fear, which is directed at a specific object (Gron, 2008).

Lader & Marks (1971) define anxiety as an emotion arising from an imminent danger, a threat that is vague or disproportioned to the emotion it evokes. Anxiety stimulates the sympathetic nervous system, i.e., the part of the nervous system preparing the human body for physical response when threatened, as opposed to the parasympathetic system that relaxes the body. Negative emotions caused by stressful situations trigger the sympathetic system to increase hormonal secretion, which in turn increases fatty acids and releases glucose in the blood, thus providing the body with the required energy to cope with the new situation. Those body reactions increase the heart rate, alter the respiratory rate, cause perspiration, tremors, and stomach and head discomfort (Theofilou, 2016). When these physical symptoms remain at normal levels, anxiety is a rather motivating than suppressive factor. Physical response to an imminent threat ensures vigilance, increases performance and arises from the need of the body to maintain balance irrespective of the environmental changes (Polykandrioti, 2014).

Studies of the 20<sup>th</sup> and 21<sup>st</sup> century have reported anxiety disorders to be the most common disorders in general population, usually occurring in adolescence or early adulthood, while their causes are both psychological and biological. An anxiety disorder is a stress that persists when the threat no longer exists. Stress often increases, reaching levels disproportionate to the situations that caused it. The symptoms last for a minimum of 6 months and the disorder may deteriorate, if left untreated. The frequent co-occurrence of other disorders, such as substance use, impede diagnosis and treatment of anxiety disorder (Kilamperia, 2004).

According to the International Classification of Diseases (ICD-10, 2008), depending on the stress intensity and manifested symptoms, a person may have one of the following anxiety disorders:

- Agoraphobia
- Social phobias

- Specific (individual) phobias
- Panic disorder
- Generalized anxiety disorder
- Obsessive-compulsive disorder, among others.

### **Theoretical background**

Examination performance anxiety represents a distinct form of anxiety, studied systematically since the 1950's. Its most recent versions are based on the cognitive interference model, according to which anxiety causes reactions irrelevant to the solution of the school task, interfering and affecting the course of solution, and thus the performance quality (Metallidou, 1995). These reactions are combined with the concern for a potential failure. The stimulus triggering anxiety is related to the perception of evaluation, the underlying concern and fear of a current or future crisis (Zagklara, 2014). The main factor of adolescent anxiety is the feeling of not possessing the adequate skills to address the requirements of the examination. This subjective belief does not necessarily reflect the lack of skills to succeed, but rather the fear of not possessing them due to a lack of self-confidence ('Positivus', 2010). This experience is often a combination of the interpretation and meaning attributed to the event by individuals, based on their prior experience and emotional balance. Students with increased social anxiety often think: "If I fail, no one will appreciate me." They may cope with their problem by showing self-confidence, attribute their failure and responsibility to others, or blame themselves (Zagklara, 2014).

Another essential factor for examination performance anxiety, particularly during school final examinations in Greece, is competitiveness because of the limited available positions in higher education institutions, meaning that some students will not achieve their goal. Another fear is that, in case of failure, studying and effort made by the student will be lost. ('Positivus', 2010).

Furthermore, negative thoughts prior to the examination, such as how vast the material is or how many things students cannot remember, contribute markedly to stress. They usually wonder what will happen if they fail, or believe that their future will be lost and they will be a failure. Consequently, the catastrophic scenarios they produce deprive them from believing in themselves and focusing on their studies ('Positivus', 2010).

Students with examination anxiety, experience increased heart rate, nausea, frequent urination, increased perspiration, cold hands, dry mouth and muscle spasms before, during, or even after examination. These natural reactions combined with intense stress lead to concern, fear of failure and often panic. Adolescents failing to control these emotions, experience higher anxiety levels, further impeding their concentration. Therefore, examination stress leads to procrastination, inefficient studying and difficulty to organize and interpret the concepts they are taught (Zagklara, 2014).

Several gender differences have been reported in the stress levels, the reasons of its occurrence, the way it manifests itself and its management. Those differences are attributed to both biological and social factors.

Studies have shown that men and women react differently in stressful situations. Men become more self-centered, limit social interactions, potentially attempting to save energy to cope with the imminent danger. Conversely, women increase social interactions, develop increased compassion and seek social support more often. These differences are attributed to biological-hormonal factors.

However, the concept of gender represents a social construction as well, related to differences in socialization. According to the theory of roles, behavior is determined by the social roles we adopt. The variety of roles we attempt to respond to, induces internal conflicts. Moreover, those roles are associated to social expectations. Therefore, different gender roles lead to behavioral differences. In adolescence, social expectations require adopting behaviors

according to the traditional male and female roles. Thus, the psychological and behavioral differences between boys and girls begin to increase, differentiating the ways stress manifests itself. At this age stage, according to Freud, adolescents try to define their identity and acquire a sense of self. The rising conflict between personal desires and those of the society, increases adolescent anxiety irrespective of gender (Koureta, 2007).

Men reportedly experience less anxiety than women; similarly, adolescent boys experience less anxiety than girls, while girls admit feeling more anxious than boys. This may be explained by the fact that girls feel less confident for their skills to manage challenging situations and tend to social conformity to avoid the anxiety of being disapproved by others- (Koureta, 2007). Studies have shown that girls experience higher social anxiety than boys, while underestimating more their social skills (Nikolaou, 2005). Particularly, compared with adolescent boys, girls develop at least twice as often an anxiety disorder, which may be related to lower self-esteem. Additionally, female adults manifest twice as often their emotional issues compared with men, suggesting the underlying differences between men and women related to emotional disorders (anxiety among others) that occurred in adolescence and were not efficiently treated- (Palaiologou & Kotzia, 2013).

Numerous studies have focused on psychopathological disorders of adolescence, such as depression, destructive behavior, and substance use. A marked common finding is the observed differences between boys and girls. Particularly, a 1989 study has shown that adolescent girls experience more psychological problems combined with more health problems. The main issues observed are related to social relations and the body image. Moreover, a 1990 study has reported that, compared to boys, girls present more often various psychological problems such as negative mood, low self-esteem, anxiety, irritability, eating disorders and suicidal tendencies. Physical symptoms, including headache, stomach and chest pains, onychophagia, insomnia, visual problems, dizziness and vomiting, are also more common in girls (Takis, 2004).

### **Research data**

#### *Initial hypothesis*

This study was conducted following the initial hypothesis that the two genders address and behave differently in stressful situations. Compared to boys, girls were expected to show more intense stress symptoms, experience higher levels of anxiety more often, believe their future is more dependent on the final examinations and base their choices more on their close environment.

#### *Methods*

To conduct this study, a Google Drive form with a questionnaire was created and distributed to senior high school students in the city of Volos (Greece). The questionnaire was sent via e-mail and social media.

The form included an introduction stating the purposes of the study and the framework of its conduction, while highlighting the protection of the participants' anonymity at the submission of the questionnaire. All answers were mandatory; however, there were no correct/wrong answers. A total of 100 questionnaires were completed and analyzed.

After collecting the questionnaires and performing an initial analysis of the results, we carried out interviews with six students, three girls and three boys, from the 2<sup>nd</sup> grade of the 4<sup>th</sup> Senior High School of Volos. They were all asked to comment on a part of the study results and express their views regarding examinations, anxiety and potential differentiations observed between boys' and girls' behavior.

The questions included in the questionnaire were common for all students and were grouped according to the following themes:

- 1) Participant's gender
- 2) Participant's school grade

- 3) Relation of students with the school environment
- 4) Preparation for school requirements and examinations
- 5) Extracurricular activities not related to school requirements and examinations
- 6) Choice of future profession
- 7) Performance in the final examinations
- 8) Students' attitude toward school requirements and examinations
- 9) Ways of coping with negative emotions

**Results**

The students' views on **school environment** and their relations with it were similar in terms of gender. Regarding the students' relations with their classmates (questions 3b and 3d) and professors (question 3c), girls showed higher percentages. (Table 1)

**Table 1: Comparison of answers on school environment between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
3a	average	32,1	Average	37,9
3b	a lot	38,2	a lot	37,9
3c	a lot	44,1	a lot	36,4
3d	average	32,4	Average	36,4

Regarding the **students' preparation for school and examination requirements**, the only difference was observed at the level of satisfaction with the hours invested in the preparation. A high percentage of girls were more satisfied than boys (question 4c). (Table 2)

**Table 2: Comparison of answers on preparation for the school and examination requirements between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
4a	very unsatisfied	50	very unsatisfied	45,5
4b	neutral	29,4	Neutral	28,8
4c	neutral	32,4	Neutral	31,8
4d	very unsatisfied	64,7	very unsatisfied	37,9
4e	very unsatisfied	41,2	very unsatisfied	43,9

Girls reported being very satisfied with the time spent in **extracurricular activities**, as opposed to boys who were slightly or not at all satisfied (*question 5a: I am satisfied with the time spent in extracurricular activities*). Boys wished they had much more time for those activities, while girls, having already declared being satisfied with the hours spent, would like for this time to increase. (*Question 5c: I would like the hours I spent on extracurricular activities to be more*) (Table 3)

**Table 3: Comparison of answers on extracurricular activities between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
5a	much more	26,5	not at all - slightly	22,7 - 22,7
5b	not at all	64,7	not at all	63,6
5c	much more	23,5	Extremely	34,8
5d	extremely	38,2	Extremely	43,9

Male students were absolutely negative at the sub-question on whether parents determine the **choice of future profession** (question 6b), while female students' predominant answer ranged between "not at all" and "slightly". Moreover, the professional prestige and employment opportunities, among others, influenced less the girls' choice, while affecting moderately the boys' choice (question 6c). (Table 4)

**Table 4: Comparison of answers on choice of future profession between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
6a	extremely	61,8	Extremely	56,1
6b	not at all - slightly	41,2 - 41,2	not at all	48,5
6c	slightly	32,4	Moderately	25,8
6d	extremely	38,2	Extremely	38,4
6e	not at all	64,7	not at all	84,8
6f	extremely	55,9	Extremely	57,6

Regarding the **performance in the school final examinations**, girls were extremely concerned, while boys experienced moderate anxiety (question 7c). Additionally, answers recorded by both genders on whether their professional future depends on the final examinations (question 7a), girls did not associate them at all, while boys' answers ranged between "not at all" and "very". Our results showed that entrance examinations were not decisive for the course of students' life; however, girls considered their future slightly depended on the final examinations' outcome. Finally, in case of failure at the examinations, boys were not willing to study abroad or at a private institution, nor were they willing to work in any sector. Conversely, girls were slightly considering an alternative study option and moderately considering the possibility of seeking employment in a different sector (Table 5).

**Table 5: Comparison of answers on performance in the school final examinations between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
7a	not at all	32,4	not at all - very	24,2 - 24,2
7b	not at all - slightly	26,5 - 26,5	not at all	27,3

7c	extremely	38,2	Moderately	25,8
7d	not at all	58,8	not at all	54,5
7e	not at all	55,9	not at all	48,5
7f	not at all	35,3	not at all	36,4
7g	slightly	32,4	not at all	33,3
7h	not at all	38,2	not at all	36,4
7i	moderately	32,4	not at all	30,3

Regarding the **school and examination requirements**, girls felt slightly pressured from the school requirements, while boys did not feel any pressure (question 8a). This gender difference may be attributed to the fact that girls were extremely concerned about their performance at the examinations while boys were moderately concerned (question 8c). Girls believed their effort is moderately reflected in the school performance, while boys considered it is not at all reflected in the school performance (question 8d). However, the answers at the sub-question regarding negative emotions due to school requirements, were markedly opposed. Girls experienced extreme anxiety, frustration and desperation compared to the boys who did not experience unpleasant emotions (question 8f). (Table 6)

**Table 6: Comparison of answers on school and examination requirements between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
8a	slightly	29,4	not at all	31,8
8b	not at all	47,1	not at all	39,4
8c	extremely	47,1	Moderately	24,2
8d	moderately	38,2	not at all	27,3
8e	not at all	32,4	not at all	39,4
8f	extremely	32,4	not at all	34,8

Regarding the students' **ways of coping with negative emotions**, the only difference recorded between the two genders was in their effort to engage in whatever helps them feel good (well???) (question 9d). Therefore, boys always sought to avoid their problems by listening to music or having fun with friends, while girls were usually but not always engaging in similar activities. (Table 7)

**Table 7: Comparison of answers on ways of coping with negative emotions between girls and boys**

QUESTION	GIRLS		BOYS	
	MOST COMMON ANSWER	PERCENTAGE	MOST COMMON ANSWER	PERCENTAGE
9a	never - rarely	26,5 - 26,5	never – rarely	30,3 - 30,3
9b	usually	26,5	Usually	31,8
9c	never	38,2	Never	40,9
9d	usually	38,2	Always	53
9e	usually	47,1	Usually	34,8
9f	never	41,2	Never	33,3



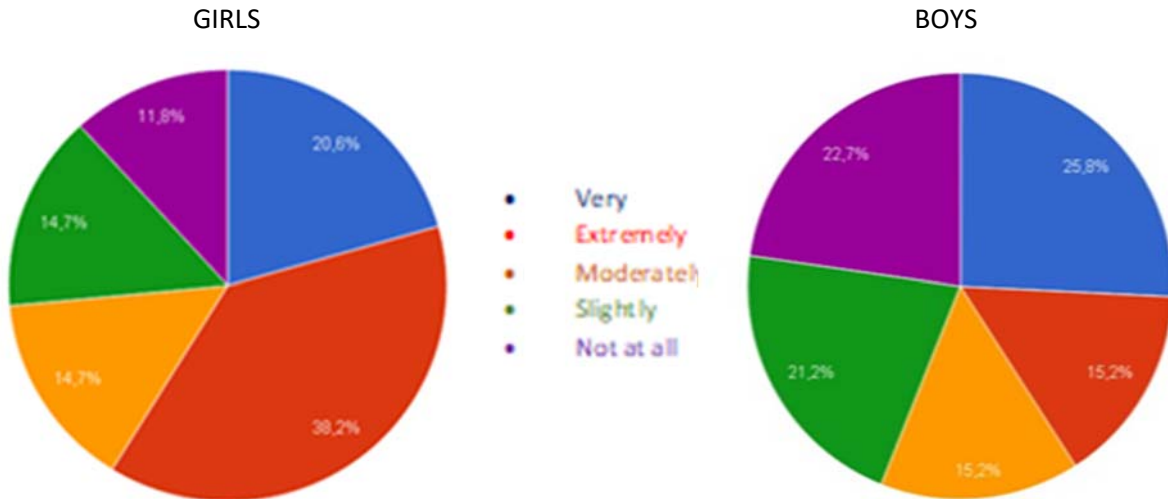
**Discussion - Conclusions**

The findings in the present study indicated that girls admitted experiencing higher levels of anxiety. Consequently, they expected to resolve their problems less compared to boys, they criticized the adequacy of their performance, considered their failures were due to lack of motivation and skills, presented higher social conformity and tended to succumb to peer pressure. Adopting a socially accepted attitude may effectively eliminate anxiety caused by fear of being disapproved from peers and adults (Koureta, 2007).

Studies have reported that boys show higher self-efficacy compared to girls, who consider themselves less competent in activities stereotypically associated with the male gender, while they are more likely to turn to others for assistance of approval (Von der Embse, 2018). Similar findings have been recorded regarding professional self-efficacy in typically male and female professions (Koureta, 2007). Boys tend to select professions ensuring financial security, namely technical professions. Conversely, girls select academic education because of its higher social prestige. The boys' success criterion is financial and professional security and growth, while girls choose their profession based on personal growth and success in life (Zagklara, 2014).

Although test anxiety can affect male and female adolescents and middle school and high school students, many studies worldwide suggest that female adolescents and middle school students are possibly at a greater risk of developing test anxiety (Lowe, 2021; Zile *et al.*, 2021, Torrano *et al.*, 2020). In this study differences were recorded between senior high school female and male students regarding the anxiety prior to examinations, choice of studies and future profession.

Girls stated feeling pressure because of school requirements, being extremely concerned about their performance in examinations and experiencing negative emotions due to examinations, while boys did not feel pressure, were moderately concerned and did not experience negative emotions. (Figure 1)



**Figure 1. Assessment from 7. To what extent do you believe are true the following sentences regarding your performance in the school final examinations? [I am concerned about my performance in them.]**

Furthermore, compared to boys, girls were more satisfied about the time spent in preparation for school and considered their effort was reflected in their school performance. We observed that girls sought more actively than boys good school performance, which increased their self-esteem and led to academic education. This is evident also in other studies (Milovanović, 2020). Moreover, social stereotypes pushed women toward higher education and not technical education.

Girls stated being satisfied with the time spent in extracurricular activities, though they would like this time to increase. They did not have enough time to engage in extracurricular

activities, “because of school requirements”, as one female student explained. Similarly, boys would like to have more time for extracurricular activities, although they were satisfied with the time, they already spent in them. This may be explained by the social roles, according to which, men do not feel anxious when doing what they like. Moreover, these results reflect the social expectation according to which, boys should be independent from their parents regarding the choice of profession while girls admit they are slightly influenced by their parents when deciding on their professional future. These findings agree with other studies (Lowe, 2021; Zile *et al.*, 2021)

Girls did not associate their success in the school final examinations with their professional future, but believed the course of their life was slightly associated with them, because it determined whether they would seek alternative study options or work in a different sector, two potential options in case of failure for the girls, but not for the boys. (Rodríguez *et al.*, 2014, Van Mier *et al.*, 2019, Milovanović, 2020).

The main hypothesis of our study according to which there are gender differences in anxiety before examinations was confirmed.

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