

Research Article

Self-compassion, Self-esteem and Test-anxiety Among Students Preparing for the University Admission Exam

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Abstract

Introduction: There is a paucity of information on the contribution of self-compassion and self-esteem to strategies used to cope with anxiety difficulties in times of distress, such as preparing for university entrance examinations for students in Greece. This study applied tests to better understand adolescents' views on their motivations to participate in the nationwide examinations for entrance into Greece's state universities, their coping strategies during their preparation, and their reaction to a potential failure. It was expected that students' anxiety would be related to self-compassion and self-esteem regarding their gender. **Methods:** This cross-sectional, mixed methods study was based on statistical and thematic analysis conducted on data consisting of the information respondents were asked to provide regarding their studies (favorite lesson, where they like to study, orientation, and first time participation in exams) and their attitudes towards the exams. One hundred thirty-two (132) High School senior students participating in the Pan-Hellenic Examinations (81 females and 51 males) ($M = 3.11$, $SD = 0.76$), aged from 17 to 18 years old, where volunteered for the present study. **Results:** Most of the participants (75%) believe that they are going to succeed in the exams and showed greater test-anxiety ($t = 2.580$, $df = 129$, $p = .011$), but also greater self-esteem ($t = 4.106$, $df = 129$, $p = .001$), greater self-compassion ($t = 3.013$, $df = 129$, $p = .003$), greater self-kindness, ($t = 2.299$, $df = 129$, $p = .000$), greater common humanity ($t = 2.416$, $df = 129$, $p = .017$), and greater mindfulness ($t = 2.466$, $df = 129$, $p = .015$), than participants who answered that they are not going to succeed. Those who predicted their failure showed greater self-judgment (with no statistical significance, ($p > 0.005$), greater isolation ($t = -2.713$, $df = 129$, $p = .032$), and greater over-identification ($t = -2.013$, $df = 129$, $p = .046$) than their counterparts. Overall, male participants ($M = 3.4$, $SD = .74$) exhibited higher test-anxiety scores than female participants ($M = 2.93$, $SD = .74$). **Conclusions:** Gender differences significantly influence self-compassion and self-esteem having a vast impact on anxiety.

Keywords

Adolescents, Test-anxiety, Self-esteem, Self-compassion, Gender

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1. Introduction

The Greek educational system regarding admission to university requires successful performance in the national so-called Panhellenic exams. The latter, as having been formed by the Greek Ministry of Education, consists of mainly four subjects, the content of which depends on the trajectory students choose to follow for their academic start. The examination process and questions are all the same for students who have to compete with all their counterparts in the nation [1]. As a result, admission exams are considered highly demanding and challenging for students, who, during their senior year, must prepare as best as possible for their final examinations. In order to achieve a good performance and secure a place at the school of their first choice, besides from high school classes, students attend additional intense classes in private coaching schools, also called “frontistirio”. The latter usually adds extra requirements and studying hours for students, but also an economic burden for their families [2].

Thus, senior year can prove to be very stressful for students [3], who believe that their future depends on their performance in the nationwide exams and that they should make career and life choices according to this performance. What is more, some adolescents might feel they have to make their parents proud through getting admitted to a highly prestigious school, which means that failing the exams, also means failing to meet their family’s expectations [4].

For the above reasons and others, which will be described further in this study, test-anxiety is prevalent and needs the immediate attention of the broader scientific community [5]. So far, extensive research has not been conducted regarding test-anxiety in Greek senior students sitting the Panhellenic exams, so the present study aims to shed some light on the topic.

At first, an introduction regarding test-anxiety will be analysed, trying to explore at the same time if there are any gender differences. Secondly, the concepts of self-compassion and self-esteem will be introduced in terms of searching whether literature has confirmed their contribution to stress anxiety coping strategies. Moving on to the study details, the methodology and the tools used during the survey will be analysed, and later on, the results will be introduced and discussed. Lastly, conclusions from the study will be presented, followed by limitations and suggestions for further research.

1.1. Test-anxiety

Anxiety disorders are considered among the most predominant and challenging issues in recent psychiatric literature, which can impair quality of life to a great extent [6]. Gender differences in anxiety disorders have been extensively studied, showing that women are more likely to suffer from anxiety disorders. For instance, Burani and Nelson [7] stated that females are disproportionately more affected by several

anxiety disorders, such as panic disorder and social anxiety, with agoraphobic avoidance compared to males. In addition, other scholars concur with the above statement that women suffer more from Generalised Anxiety Disorder (GAD), Specific Phobias (SP), and Panic Disorder (PD) than men [8]. Adolescents are not excluded from this category, with anxiety symptoms in this age group having increased over the last few years [9].

Unfortunately, test-anxiety comes to add in the literature, although it has not yet been classified as a separate anxiety disorder. In fact, research on test-anxiety started during the second decade of the 20th century, acquiring its own definition in 1952 [10]. The term lost interest from scholars during the 80s but regained attention over the last decades [10]. Test-anxiety is related to assessments in situations when a person undergoes evaluation, which is considered as demanding or threatening [11]. Test-anxiety includes two dimensions, one regarding cognitions (worry) and the other regarding emotions (emotionality) [12]. The first one includes intrusive thoughts about the task ahead (for instance, worrying about failing the exam), and the second one pertains to physiological changes due to arousal (such as increased pulse) [13]. Thoughts and emotions trigger these assessments regarding an upcoming examination.

Hence, people might react to this threat in different ways, such as avoiding exposure, making new efforts, or expecting negative results [11, 14]. This process might lead to increased negative beliefs about performance and, therefore, augment perceived threat and anxiety [11]. As a result, research has shown that test-anxiety can lead to weaker performances. Conversely, a reduction in test-anxiety can improve academic performance [11, 15]. There have been reported some gender differences regarding test-anxiety. In particular, Von der Embse et al. [16] suggest that women experience higher levels of test-anxiety than men, regardless of age. In addition, Finlayson found similar results in younger ages, with girls facing greater levels of test-anxiety than boys [13, 16]. Furthermore, San et al. found that senior high school girls experience significantly higher levels of test-anxiety compared to their male classmates [17].

1.2. Self-compassion and Self-esteem

Therefore, someone might wonder “What can I do?”. Is there anything that can protect students from test-anxiety? In fact, research shows that self-compassion has been linked to lower levels of fear of failure and higher levels of perceived competence [18]. On the other hand, lack of self-compassion has been linked to test-anxiety [19]. So, what is self-compassion and what are its ties to the topic in question? As a term, self-compassion was first introduced by Neff in 2003, who discerned three main elements in this concept [20]. The first one is “self-kindness”, which means being gentle to

ourselves, showing understanding and sympathy, while at the same time removing self-judgement during hard periods. The second one is called “common humanity” and includes looking at our misfortunes or problems through a lens of a greater human experience, rather than isolating ourselves as being the only ones dealing with such challenges. It basically means moving away from a self-centred spectrum and keeping our experience interconnected with other peoples’ similar issues. Last but not least, Neff detected mindfulness as the third element of self-compassion, which implies being aware of our thoughts and feelings without over-identifying with them [20].

Having analysed the three main components, Neff proceeded to contrast them with their opposites, which are self-criticism, isolation, and over-identification, respectively [21, 22]. Although self-compassion includes distancing ourselves and keeping a kind profile, it does not imply passiveness. On the contrary, self-compassion aims to rectify actions accompanied by gentle intentions [23]. Neff, in her initial studies, found that women experience lower levels of self-compassion than men but also higher levels of self-judgement, isolation, and over-identification [22]. Research on the topic added to these first assessments, with similar results, indicating that self-compassion is more common among men [23, 24]. However, there has been some evidence, indicating that teenage boys tend to experience higher levels of isolation than girls [25]. During adolescence, there is a tendency on behalf of teenage girls to become more self-conscious than teenage boys, which might inhibit self-compassion [26]. However, there have been studies that have not found any significance between gender and self-compassion [23]. The present study will try to add to this question and discover if there are any connections between gender and self-compassion, which shows the direct practicality of the matter.

In general, self-compassion has proved to improve mental well-being regardless of gender [23]. A study by McEwan et al. demonstrated that increased levels of self-compassion were accompanied by decreased levels of test-anxiety in undergraduate students with above the average high test-anxiety [15]. Research has shown that self-compassion can be an important factor in reducing self-judgement, isolation, and over-identification [27].

Moreover, self-compassion is positively connected to self-esteem [24, 26]. Self-esteem basically tells us how people think of themselves [28]. Nevertheless, self-esteem has been found to have a strong relationship with anxiety, and, respectively, low self-esteem might be a predicting factor for anxiety [28]. In addition, regarding test-anxiety, there has been evidence that shows that self-esteem might also be a predicting factor for test-anxiety [16]. As far as gender differences are concerned, research proposes that men experience higher levels of self-esteem than women [23]. However, there have been conflicting results in various studies regarding gender differences in self-esteem. More specifically, Bhamani et al.

analysed in their review that researchers on this topic have not yet agreed upon a common result [29]. On the one hand, due to drastic changes in their appearance, adolescent girls might experience lower levels of self-esteem than boys [29]. Other studies have suggested that teenage girls note higher levels of academic self-esteem, whereas boys score better in personal and social self-esteem [30].

As far as self-esteem and test-anxiety are concerned, Sari et al. found a negative correlation between the two terms in their study, meaning that as self-esteem rises, test-anxiety tends to decline [17]. The research team also found that test-anxiety levels influence performance among senior high school students. In fact, when students succeeded in exams, their self-esteem tended to improve as well [17].

Furthermore, other components have been identified as contributing to performance levels. For instance, self-efficacy can influence students’ motivation to succeed in their exams [31]. More specifically, self-efficacy refers to a person’s ability to execute tasks successfully. For instance, Pouratashi et al. found that students with higher self-efficacy levels tend to experience higher levels of motivation about an upcoming examination. As a result, they adopt healthier and more effective strategies during preparation, such as relaxation and better practice [32]. The latter contributed to less test-anxiety levels and therefore, a better performance in the examination [33].

The main aim of the research is to explore if gender differences significantly influence self-compassion and self-esteem, having a vast impact on test-anxiety. Specifically, the main hypothesis is gender differences will be present regarding the levels of test-anxiety, self-judgement, isolation, over-identification, self-compassion, and self-esteem. On top of that, higher self-compassion levels are expected to result in lower levels of test-anxiety.

2. Methods

2.1. Participants-procedure

This cross-sectional, mixed methods study based on a convenience sample was conducted during the summer preparation for the exams in private preparatory institutions. Inclusion criteria were: (i) consent to participate, (ii) participating in the Panhellenic exams, (iii) being over 17 years old, and (iv) being able to understand informed consent documents and complete the questionnaires). The study group consisted of 132 High School students attending the senior year in High School and participating in the Pan-Hellenic Examinations. The sample was sourced from intense classes in private coaching schools, also called “frontistirio” due to ease of access and consent of those responsible of contacting the study. In addition, students who are intensively preparing for exams, provide a suitable context for studying exam anxiety. 68% of participants were girls, suggesting an overrepresentation of the female gender in the sample. Ethical approval was granted before the study initiation from the Committee for

Bioethics and Ethics of the Medical School of the Aristotle University of Thessaloniki (under protocol number 4/14.2.2023- 75/17.2.2023). The questionnaire was anonymous, and all personal information processed was considered confidential and kept with the utmost confidentiality, under the European Data Regulation 2016/679 [(General Data Protection Regulation (GDPR)] for the protection of personal data. The completion time was approximately twelve minutes.

2.2. Measures and Instruments

Respondents were asked to provide information about their gender and their studies (favorite lesson, where they like to study, orientation, and first-time participation in exams).

The following open questions were also included to assess their beliefs and attitudes towards the exams:

Question 1. What relaxes me after studying?

Question 2. Who do I turn to when I need help with my anxiety?

Question 3. What motivated me to take the exams?

Question 4. How do I handle it if I fail to get into the school I want?

Finally, a closed question (answered yes or no) was used to investigate adolescents' predictions about the likelihood of success or failure.

Question 5. Do I believe that I will achieve my goal?

Westside Test-anxiety Scale: The Westside Test-anxiety Scale [33] is a brief, ten-item instrument, designed to identify students with anxiety difficulties. It contains 10 items and utilizes a 5-point Likert-type scale, with responses ranging from 1 (not at all true) to 5 (extremely true). Some items include: *"The closer I am to a major exam, the harder it is for me to concentrate on the material"*, and *"When I study, I worry that I will not remember the material on the exam"*. The total score is generated by summing the items and dividing by 10. Scores between 1.0 - 1.9 indicate "comfortably low test-anxiety"; Scores between 2.0-2.5 equal "normal or average test-anxiety"; between 2.5 - 2.9 "high normal test-anxiety"; between 3.0 - 3.5 "moderate test-anxiety", and between 3.5 - 3.9 "high test-anxiety". Higher scores indicate more severe anxiety symptoms, with scores on the upper end (4.0-5.0) indicating extremely high anxiety. The present study produced an alpha of $\alpha = 0.80$ for the WTAS.

Self-esteem: The Single-Item Self-Esteem Scale [34] is a one-item measure of global self-esteem. It contains a single item (i.e., "I have high self-esteem") and utilizes a 7-point Likert scale, with responses ranging from 1 (not very true of me) to 7 (very true of me). SISE showed strong convergent validity with the Rosenberg Self-Esteem Scale (RSE) and nearly identical correlations with a variety of criteria measures such as self-evaluations, self-evaluative biases, social desirableness, personality, psychological and physical health, peer rating of group behavior, academic outcomes, and demographic factors. (Robins et al. 2001).

Self-Compassion Scale: The Self-Compassion Scale [35, 36]

assesses self-compassion during distress. The SCS consists of 26 items and utilizes a 5-point Likert-type scale, with responses ranging from 1 (almost never) to 5 (almost always). It contains six subscales: self-kindness with five items (i.e. *"When I'm going through a tough time, I give myself the caring and tenderness I need"*), self-judgment with five items (i.e., *"I'm disapproving and judgmental about my flaws and inadequacies"*), common humanity with four items (i.e., *"When things are going badly for me, I see the difficulties as part of life that everyone goes through"*), isolation with 4 items (i.e. *"When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world"*), mindfulness with four items (i.e. *"When something upsets me I try to keep my emotions in balance"*) and over-identification with four items (i.e. *"When I'm feeling down I tend to obsess and fixate on everything that's wrong"*).

The present study produced an alpha of $\alpha = 0.88$ for the SCS, with the reported alpha scores for each subscale being as follows: self-kindness ($\alpha = 0.76$), self-judgment ($\alpha = 0.74$), common humanity ($\alpha = 0.63$), isolation ($\alpha = 0.63$), mindfulness ($\alpha = 0.58$), and over-identification ($\alpha = 0.78$).

The total score is generated by summing the items and dividing by 26. When examining subscale scores, higher scores on the self-judgment, isolation, and over-identification scale indicate less self-compassion before reverse-coding and more self-compassion after reverse-coding.

2.3. Statistical Analysis

Data are presented as means (standard deviations, SD) or absolute and relative prevalence (n [%]). Chi squared analysis and student t tests was used to clarify the statistically significant differences between the main variables. A Hierarchical linear regression for the trends between test-anxiety, self-esteem, and self-compassion was analyzed. All tests were two-tailed, with a significance level of $p < 0.05$. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) version 26.

2.4. Thematic Analysis

Thematic analysis was conducted on data consisting of the answers to the open questions provided. Data coding was performed based on the key concepts revealed from the data, to determine common viewpoints and experiences. Braun and Clarke's inductive thematic approach [37] was used to develop and confirm the thematic coding structure by two researchers (V.A.N. and V.H.). The data reached saturation point after participant 84, with no new codes appearing after that. To ensure data saturation, the process was repeated twice, with both researchers checking the codes and grouping the themes. The researchers were able to conceptualize 26 themes (7 for "motivators", 10 for "stress coping strategies", and 9 for "coping with exam failure"). Inter-rater reliability was achieved through consensus agreement (94% for "motivators",

93% for “stress coping strategies” and 96% for “coping with exam failure”).

3. Results

3.1. Statistical Findings

Sixty-eight percent of the participants were female, with

31.8% majoring in Humanities, Law, and Social Sciences. The vast majority (95.5%) preferred studying at home and were first-time Panhellenic exam takers (97.7%). Their main support network comes from their friends (53.8%) and most of them (75%) believe that they will succeed to their goal (Table 1).

Table 1. Sample characteristics.

Gender	Frequency	%	Valid%	Cumulative P%
Female	81	61,4	61,4	61,4
Male	51	38,6	38,6	100,0
Total	132	100,0	100,0	
<i>Major</i>	Frequency	%	Valid%	Cumulative%
Humanities, Law and Social Sciences	42	31,8	31,8	31,8
Positive and Technological Sciences	36	27,3	27,3	59,1
Sciences of Health and Life	31	23,5	23,5	82,6
Studies of Finance and Information	23	17,4	17,4	100,0
Total	132	100,0	100,0	
<i>Favourite lesson</i>	Frequency	%	Valid%	Cumulative%
Maths	22	16,7	16,7	16,7
Physics	15	11,4	11,4	28,0
Chemistry	11	8,3	8,3	36,4
History	7	5,3	5,3	41,7
Literature	14	10,6	10,6	52,3
Biology	21	15,9	15,9	68,2
Ancient Greek	10	7,6	7,6	75,8
Latin	14	10,6	10,6	86,4
Informatics	13	9,8	9,8	96,2
Economics	5	3,8	3,8	100,0
Total	132	100,0	100,0	
<i>Study place</i>	Frequency	%	Valid%	Cumulative%
Home	126	95,5	95,5	95,5
Library	5	3,8	3,8	99,2
Cafe	1	,8	,8	100,0
Total	132	100,0	100,0	
<i>First time</i>	Frequency	%	Valid%	Cumulative%
Yes	129	97,7	97,7	97,7
No	3	2,3	2,3	100,0
Total	132	100,0	100,0	

Gender	Frequency	%	Valid%	Cumulative P%
<i>Support</i>	Frequency	%	Valid%	Cumulative%
Friends	71	53,8	53,8	53,8
Parents	34	25,8	25,8	79,5
Professors	5	3,8	3,8	83,3
Psychologist	4	3,0	3,0	86,4
Parents and friends	8	6,1	6,1	92,4
Parents and professors	5	3,8	3,8	96,2
Nobody	5	3,8	3,8	100,0
Total	132	100,0	100,0	
<i>Prediction</i>	Frequency	%	Valid%	Cumulative%
Yes	99	75,0	75,6	75,6
No	32	24,2	24,4	100,0
Total	131	99,2	100,0	
Missing System	1	,8		
Total	132	100,0		

Males showed greater test-anxiety ($t = -3.632$, $df = 130$, $p = .000$) but also greater self-compassion ($t = -2.971$, $df = 130$, $p = .004$), greater mindfulness ($t = -2.813$, $df = 130$, $p = .006$), less self-judgment ($t = 2.700$, $df = 130$, $p = .008$) and less over-identification ($t = 3.194$, $df = 130$, $p = .002$) than females (Table 2).

Table 2. Gender differences among Self-Esteem, Test-anxiety and Self-compassion.

	Mean (SD)		P	d	95% CI	
	Female (81)	Male (51)			Lower	Upper
Self-Esteem	4.17(1.45)	4.39(1.65)	.425		-.762	.323
Test-anxiety	2.93 (.74)	3.40 (.70)	.000	0.65	-.732	-.215
Self-compassion	2.64 (.66)	2.96 (.46)	.004	0.56	-.528	-.105
Self-kindness	13.95 (4.23)	15.09 (3.94)	.122		-2.604	.3101
Self-judgment	17.74 (4.33)	15.66 (4.23)	.008	0.48	.554	3.593
Common humanity	10.60 (3.64)	10.70 (2.98)	.869		-1.253	1.051
Isolation	13.02 (4.05)	11.80 (3.28)	.073		-.116	2.557
Mindfulness	12.07 (3.20)	13.60 (2.79)	.006	0.50	-2.612	-.454
Over-identification	14.86 (3.98)	12.62 (3.79)	.002	0.57	.851	3.622

Participants who believe that they going to succeed in the exams showed greater test-anxiety ($t = 2.580$, $df = 129$, $p = .011$), but also greater self-esteem ($t = 4.106$, $df = 129$, $p = .001$), greater self-compassion ($t = 3.013$, $df = 129$, $p = .003$), greater self-kindness, ($t = 2.299$, $df = 129$, $p = .000$), greater common humanity ($t = 2.416$, $df = 129$, $p = .017$), and greater

mindfulness ($t = 2.466$, $df = 129$, $p = .015$), than participants who predicted their failure. Those who answered that they are not going to succeed showed greater self-judgment (*with no statistical significance*, $p > 0.005$), greater isolation ($t = -2.713$, $df = 129$, $p = .032$), and greater over-identification ($t = -2.013$, $df = 129$, $p = .046$) than their counterparts (Table 3).

Table 3. Prediction of the result and Self-esteem, Test-anxiety and Self-compassion.

	Mean (SD)		<i>p</i>	<i>d</i>	95% CI	
	Positive prediction (99)	Negative prediction (32)			Lower	Upper
Self-Esteem	4.56 (1.43)	3.34 (1.49)	.001	0.83	.628	.179
Test-anxiety	3.20 (.73)	2.81 (.76)	.011	0.52	.090	-.689
Self-compassion	2.85 (.58)	2.49 (.63)	.003	0.59	.125	.608
Self-kindness	14.79 (3.98)	12.91 (4.16)	.000	0.46	.262	.350
Self-judgment	16.55 (4.29)	18.03 (4.59)	.097		-3.245	.273
Common humanity	11.05 (3.45)	9.41 (2.98)	.017	0.50	.298	2.991
Isolation	12.10 (3.61)	13.75 (4.07)	.032	0.42	-3.151	-.147
Mindfulness	12.99 (3.05)	11.47 (2.97)	.015	0.50	.301	-2.741
Over-identification	13.56 (4.02)	15.19 (3.85)	.046	0.41	-3.236	-.028

A significant proportion of the participants (35.6%) reported high test-anxiety (18.2%), or extremely high test-anxiety (17.4%), with male participants outnumbering female participants in the latter category (Table 4).

Table 4. Gender and Anxiety Level.

Level of anxiety	Overall (N = 132)		Female (n = 81)		Male (n = 51)		χ^2	Df	V_{cramer}
	N	%	N	%	N	%			
Comfortably low test-anxiety	12	9.1	11	13.6	1	2	0.12	5	.334
Normal or average test-anxiety	15	11.4	12	14.8	3	5.9			
High-normal test-anxiety	27	20.5	15	18.5	12	23.5			
Moderately high test-anxiety	31	23.5	21	25.9	10	19.6			
High test-anxiety	24	18.2	14	17.3	10	19.6			
Extremely high test-anxiety	23	17.4	8	9.9	15	29.4			

Regarding “Self-esteem” the highest positive correlation was found with “Self-compassion” and the highest negative correlation with “Self-judgement”. Regarding “Test-anxiety” the highest positive correlation was found with “Self-esteem” and the highest negative correlation with “Over-identification”. Self-compassion was positively correlated with both self-esteem and test-anxiety (Table 5).

Table 5. Correlations between the main variables.

	1	2	3	4	5	6	7	8	9
Self-esteem	R	1							

		1	2	3	4	5	6	7	8	9
	P									
	N	132								
Self-compassion	R	,508**	1							
	P	,000								
	N	132	132							
Self-kindness	R	,433**	,708**	1						
	P	,000	,000							
	N	132	132	132						
Self-Judgment	R	-,365**	-,782**	-,428**	1					
	P	,000	,000	,000						
	N	132	132	132	132					
Commonhumanity	R	,338**	,607**	,469**	-,291**	1				
	P	,000	,000	,000	,001					
	N	132	132	132	132	132				
Isolation	R	-,327**	-,661**	-,179*	,580**	-,166	1			
	P	,000	,000	,040	,000	,057				
	N	132	132	132	132	132	132			
Mindfulness	R	,343**	,629**	,550**	-,226**	,507**	-,172*	1		
	P	,000	,000	,000	,009	,000	,048			
	N	132	132	132	132	132	132	132		
Over-identification	R	-,341**	-,779**	-,310**	,677**	-,270**	,638**	-,320**	1	
	P	,000	,000	,000	,000	,002	,000	,000		
	N	132	132	132	132	132	132	132	132	
Test-anxiety	R	,371**	,345**	,248**	-,242**	,134	-,351**	,149	-,291**	1
	P	,000	,000	,004	,005	,126	,000	,088	,001	
	N	132	132	132	132	132	132	132	132	132

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Effects of gender, self-esteem, self-compassion on test-anxiety

A General Linear Model (GLM) was conducted to investigate the influence of gender as a fixed factor on test-anxiety scores, controlling for the potential effects of self-esteem and self-compassion subscales as covariates. Assumptions of the GLM, including normality of residuals and homoscedasticity, were assessed through residual plots and tests. The residuals appeared to meet the assumptions adequately, indicating that the model assumptions were not violated. Results revealed a significant main effect of gender on test-anxiety [$F_{(1,122)} = 11.223, p = .001$], indicating that test-anxiety scores differed

significantly between genders. Specifically, male participants ($M = 3.4, SD = 0.74$) exhibited higher test-anxiety scores compared to female participants ($M = 2.93, SD = .74$).

Moreover, both self-esteem and isolation demonstrated significant associations with text anxiety scores when controlling for gender. Self-esteem was found to be positively associated with test-anxiety [$F_{(1,122)} = 9.317, p = .003$] suggesting that participants with higher self-esteem tended to exhibit higher levels of test-anxiety. Similarly isolation showed a negative association with test-anxiety [$F_{(1,122)} = 6.643, p = .011$] indicating that higher isolation (reversed scoring) was associated with lower test-anxiety scores.

The model was statistically significant, $F(8, 132) = 5.933$, $p < .001$, indicating that the predictors, as a set, significantly predicted test-anxiety. The model accounted for 21.2% of the variance in academic performance (adjusted $R^2 = .232$) (Table 6; Table 7).

Table 6. Predictors of Test-Anxiety.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21,251 ^a	8	2,656	5,933	,000	,278
Intercept	15,941	1	15,941	35,605	,000	,224
Self-esteem	4,171	1	4,171	9,317	,003	,070
Self-kindness	1,046	1	1,046	2,335	,129	,019
Self-judgment	,733	1	,733	1,637	,203	,013
Common humanity	,015	1	,015	,034	,853	,000
Isolation	2,974	1	2,974	6,643	,011	,051
Mindfulness	,755	1	,755	1,687	,196	,014
Overidentification	,052	1	,052	,115	,735	,001
Gender	5,025	1	5,025	11,223	,001	,084
Error	55,071	123	,448			
Total	1360,390	132				
Corrected Total	76,323	131				

Table 7. Parameter Estimates.

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	3,092	,482	6,415	,000	2,138	4,046	,251
Self-esteem	,137	,045	3,052	,003	,048	,226	,070
Self-kindness	,030	,019	1,528	,129	-,009	,068	,019
Self-judgment	,026	,020	1,279	,203	-,014	,066	,013
Common humanity	,004	,021	,185	,853	-,038	,046	,000
Isolation	-,054	,021	-2,577	,011	-,096	-,013	,051
Mindfulness	-,033	,025	-1,299	,196	-,083	,017	,014
Overidentification	-,008	,022	-,339	,735	-,052	,037	,001
[Gender=1,00]	-,431	,129	-3,350	,001	-,685	-,176	,084
[Gender=2,00]	0 ^a	.	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

3.2. Qualitative Analysis

The data obtained from the open-ended questions were investigated with thematic analysis, guided by Braun and Clarke's [37] methodology. Inductive thematic analysis was used to build an understanding of adolescents' views on their

motivations to participate in the nationwide examinations for entrance into Greece's state universities, their coping strategies during their preparation, and their reaction to a potential failure. Due to the brevity of responses, the themes were identified at a semantic level (Table 8).

Table 8. Thematic Analysis Results.

Themes	Description	Frequency of codes
<i>Motivators</i>		
Personal fulfillment	Achieve life goals, dreams, and aspirations	56
Educational and career goals	Alignment between academic choices and future professional aspirations. Learning skills that are specific to a chosen field to reach professional milestones.	30
Job Security and financial outcomes	Achieve job security and better job prospects or increase earning potential and opportunities to earn a higher income over time.	25
Better future	Achieve a secure future and/or lay the foundations for a better future.	16
Parental expectations	Meet perceived parental expectations and pressures.	8
Student life	Experience and enjoy student life.	5
No motivation	Lack of motivation for college admission.	5
<i>Stress Coping Strategies</i>		
Relaxing activities	Promote a sense of calmness or reduce activity level through napping, lying down or taking a shower.	108
Solitary-passive activities	Listen to music or watch Movies or Series.	65
Social/Interpersonal coping	Meet and talk with friends.	35
Recreational activities	Engage in hobbies (i.e. play music or an instrument, dance, read a book, drawing, practice for a play, play chess).	30
Physical activities	Exercising or doing sports.	21
Using technology	Interactive technology use through internet browsing, gaming, and smartphone usage.	19
Emotional eating	Self-soothing through food.	5
Spiritual coping	Use prayer	1
Substance use	Smoking	1
<i>Coping With Exam Failure</i>		
Resit examinations	Willing or determined to retake the annual national entrance examination to gain admission to the university of their first choice.	55
Second/Alternative major	Willing to settle for university departments that are easier to get into in accordance to their preferences and exams grades.	28
Emotional reactions	Cry and experience a range of negative emotions such as sadness, disappointment or anger.	24
Sel-control	Remain calm and stay collected.	20
Uncertainty	Being indecisive about the future.	19
Evaluate options	Willing to explore alternative pathways for the future.	17
Social Support	Seek advice and support from family, friends, or teachers.	3

Themes	Description	Frequency of codes
Self-reflection	Accepting responsibility and acknowledging mistakes.	2
Goal Adjustment	Find work and postpone studies.	1

4. Discussion

The present study explored test-anxiety, self-esteem and self-compassion among Greek students taking part in the Pan-Hellenic entrance examinations. The majority of students experienced moderately high test-anxiety, with males reporting higher levels of stress, a finding that is in contrast with several studies, which indicated that women and girls express higher levels of test-anxiety [12, 14] and in accordance with other studies showing that males suffer greater test-anxiety than females [38]. On the other hand, results showed that male participants marked higher in self-compassion and mindfulness and lower in self-judgement and over-identification. The latter, agreed with literature which as described in the introduction, boys experience greater self-compassion [23] while girls face higher levels of self-judgement and over-identification [22].

Participants who were optimistic about succeeding in the exams and had higher self-esteem showed greater test-anxiety, but also greater self-esteem, greater self-compassion, greater self-kindness, and greater mindfulness than participants who predicted their failure. The elevation of test-anxiety may be due to the elevated performance expectations students performing in a higher level have [39].

Three main themes came out from the thematic analysis. As far as the first theme of motivating factors for participation is concerned. The majority of participants (56 times not pupils?) stated that personal fulfillment motivations such as achieving life goals, dreams, and aspirations was the highest motivation to sit the exams. Second in place, with 30 answers came educational and career goals such as alignment between academic choices and future professional aspirations and learning skills which are specific to a chosen field to reach professional milestones. Job security and financial outcomes received 25 answers, showing that participants valued achieving job security and better job prospects or increase earning potential as well as opportunities to earn a higher income over time. Sixteen answers referred to a better future and specifically to achieving a secure future and/or lay the foundations for a better future. The above results show a variety of motivators used by students in their desire to sit the exams with an emphasis on pursuing their personal goals and a secure future. However, 8 answers appeared to be about parental expectations which shows that students would like to meet perceived parental expectations and pressures. Lastly, student life and no motivation each appeared 5 times in the

open-ended questions.

Moving on to the second theme as demonstrated from the thematic analysis, stress and coping strategies received fruitful answers. Relaxing activities received 108 answers, including promoting a sense of calmness or reducing activity level through napping, lying down or taking a shower. Second came solitary-passive activities such as listening to music or watching movies or series. In addition, students stated that social/interpersonal coping strategies such as meeting and talking to friends, helped them reduce stress (regarding what?). Close to the latter, recreational activities like engaging in hobbies including playing music, dancing and reading, helped students cope with perceived stress. In addition, physical activities such as exercising and performing sports appeared 21 times during thematic analysis, showing that some students also value physical exercise as a stress coping strategy. The elevated anxiety scores recorded in students with low self-esteem are supported by qualitative statements such as 'I feel I don't deserve to succeed'. Not so surprisingly, considering the close relationship between adolescents and technology, some participants stated that browsing, gaming and using their smartphone reduced their levels of stress. What is more, self soothing through food appeared five times, which shows a preference of some students in emotional eating for reducing stress. Last in frequency of appearance, spiritual coping like praying and substance use like smoking were not so famous but still show other ways of coping with stress.

Last but not least, the third theme regarding the ways students cope with exam failure/the way students would cope in case of exam failure showed very interesting results. The most prevalent coping mechanism appeared to be the willingness of resitting the exams next year in order to be admitted to the university of their first choice. The second most famous coping strategies for failure appeared to be the choice of an alternative major degree as it might be easier to be submitted to and emotional reactions. As far as the latter are concerned, crying and experiencing negative emotions like sadness, disappointment and fear show that... However, remaining calm and staying collected also appeared during thematic analysis which τριπλασιάζει the variety of coping strategies participants have. What is more, being indecisive about the future and being willing to explore alternative pathways were also present. Seeking advice from family, friends or teachers appeared 3 times whereas self-reflection for acknowledging mistakes and taking responsibility appeared only two times during thematic analysis.

Limitations and Future Directions

The cross-sectional design did not allow causal relationships to be elucidated. The selection of a sample from private tutorial schools limits the generalizability of the findings to students in public schools or rural areas. Results related to gender differences should be interpreted with caution due to the disparate proportions. This study relies on self-reported information, which may result in bias. Regression analysis explained 21.2% of the variance in test anxiety, indicating that important factors such as coping strategies, personality or family environment were not included in the model. Performance in academics was not measured, missing valuable information that could have added to the analysis. Not collecting data on socioeconomic status, cultural background or performance reduces the ability of the study to more fully explain factors influencing test anxiety and differentiate it from international studies.

Future studies could incorporate socioeconomic and educational characteristics to deepen our understanding of differences in test anxiety.

5. Conclusions

Findings suggest that gender differences significantly influence test-anxiety levels, and that self-esteem and isolation play crucial roles in predicting variations in test-anxiety, even when considering gender effects.

Abbreviations

GAD	Generalised Anxiety Disorder
PD	Panic Disorder
SP	Specific Phobias

Conflicts of Interest

The authors declare no conflicts of interest.

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