ORIGINAL ARTICLE

Levels of anxiety and self-confidence of Civil Guard motorcycle students at the traffic school in practice scenarios

Miguel Ángel Moyano-Galán. *University of Extremadura. Cáceres, España.*
Santos Villafaina ✉. *University of Extremadura. Cáceres, España.*
Juan Pedro Fuentes-García. *University of Extremadura. Cáceres, España.*

ABSTRACT

The aim of this study was to analyse the values related to the perception of anxiety and self-confidence shown by students of the motorcycle driving course at the Traffic Academy of the Guardia Civil. The study sample consisted of 31 subjects, Guardia Civil officers enrolled as students at the Traffic School. A specific test was designed to reflect different driving situations that challenged the subjects' skills. The tools used for data collection were the self-reported questionnaires: the State-Trait Anxiety Inventory (STAI-E) to measure state-trait anxiety and the Competitive State Anxiety Inventory-2R (CSAI-2R) to assess participants' pre-competitive anxiety. The statistical analysis showed differences in relation to the variables of cognitive anxiety, somatic anxiety, and state anxiety, considering the moments both prior to and after the driving test, as well as at the baseline moment. The correlation between all study variables and the different recording moments showed significant differences in most cases, with pre-test cognitive anxiety showing the least significance. The results of this study highlight the complexity of the interactions between anxiety and self-confidence in such specific evaluative contexts. This suggests the need to continue developing evaluation procedures and tests adapted to the idiosyncrasies of this group, which are crucial for the development of intervention programs that strengthen self-confidence, foster a positive mental state, and reduce anxiety in the subjects.

Keywords: Stress, Evaluation, Performance, Driving.

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✉ **Corresponding author.** *Faculty of Sports Sciences. University of Extremadura. Avda: Universidad S/N, Cáceres 10003, Spain.*
E-mail: svillafaina@unex.es
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INTRODUCTION

From the demands of the sports field, anxiety is defined as an emotional response to a perceived threat, combining physiological arousal and cognitive concerns (Smith & Smoll, 2004). In a competitive environment, a distinction can be made between trait anxiety, which is a relatively stable personality characteristic (Martens, 1977), and state anxiety, which refers to the symptoms that arise during a specific competition (Simon & Martens, 1979). Cognitive anxiety manifests through negative expectations about success or self-evaluation, negative thoughts, loss of self-esteem, self-criticism, fear of failure, low self-confidence, concerns about performance, images of failure, difficulty concentrating, and disrupted attention (Martens, Vealey & Burton, 1990; Jarvis, 2002).

On the other hand, somatic anxiety is related to autonomic arousal, such as increased heart rate or muscle stiffness, and can lead to negative symptoms such as nervousness, difficulty breathing, high blood pressure, dry throat, muscle tension, accelerated heart rate, sweaty palms, and a sensation of butterflies in the stomach (Martens, Vealey & Burton, 1990; Jarvis, 2002; Jones, 2000).

Self-confidence, which refers to individuals' belief in their ability to control themselves and their environment (Martens, Vealey & Burton, 1990), is also examined within this construct as a component that evaluates athletes' overall perceptions of achievement (Craft, Magyar, Becker et al., 2003). For example, tennis players experience a physiological response to anxiety characterized by the activation of the sympathetic nervous system (via the hypothalamus), which increases heart rate, dilates coronary arteries, constricts abdominal arteries, dilates pupils and bronchial tubes, strengthens skeletal muscles, releases glucose from the liver, enhances mental activity, dilates arterioles in skeletal muscles, and raises basal metabolic rate (Greenberg, 1999). Thus, studying cognitive anxiety, somatic anxiety, and self-confidence before competition provides valuable insights into athletes' pre-competitive anxiety (Cox, Martens & Russell, 2003).

In line with the aforementioned, previous studies have shown that, in different military contexts, situations of extreme psychophysiological demand can be observed, similar to those in high-performance sports and physical activity (Delgado, Robles, Aznar, & Clemente, 2019; Díaz, Fuentes, Fernández, Aznar, & Clemente, 2018; Hormeno & Clemente, 2019; Vicente, Fuentes, & Clemente, 2020; Vicente, Gallego, Fuentes, & Clemente, 2020).

In sports, competition plays a crucial role in the athletic ecosystem, affecting all participants in multiple ways (Koning, 2009). For athletes, regardless of their performance level, this specific situation generates both positive and negative experiences and emotional states, which depend on how they perceive and interpret the event, its significance, and its consequences. Anxiety is one of the most common experiences in this context (Smith, 1989).

In relation to the above, a previous study has highlighted the need to generate new knowledge on the management of psychophysiological load in sports (Fuentes, Villafaina, Mas, & Martínez, 2023). For instance, a study conducted with elite junior tennis players showed significant differences in cognitive anxiety, state anxiety, and self-confidence when comparing pre- and post-match values between winners and losers (Fuentes, Villafaina, Martínez, & Crespo, 2023).

Similarly, in the context of the physical and psychophysiological demands, as well as the stress control required of fighter pilots in the Air Force, a recent study on combat pilots (Hormeno & Clemente, 2019) demonstrated how the human body can reach certain limits in the context of aerial combat, as well as the effects on reducing cognitive anxiety and other impacts on lower limb strength levels. In both offensive and defensive manoeuvres, the results indicated a significant increase in Heart Rate (HR), perceived exertion (RPE), and stress. The study concluded that, given these findings, the high physical and psychophysiological demands underscore the critical need for specific training programs for combat pilots.

Additionally, combat pilots in the Air Force have been analysed for stress-related responses, including autonomic modulation (Delgado, Robles, Aznar, & Clemente, 2019). Important aspects such as the measurement of stress before and after using a flight simulator and real flight have also been examined using instruments like the Vienna Test System (VTS) (Schmidt, 2007). The results have shown it to be a useful objective measure of several psychological constructs, complementing existing subjective measures and increasing the predictive validity compared to self-reports (Ong, 2015).

In the Air Force, flight simulators have been used as a cost-effective and safe tool for pilot training, providing a simulated environment that replicates real-world conditions (Gerathewohl, 1969). To analyse the transfer of skills between simulator training and actual flights (Dahlstrom & Nahlinder, 2009), previous research has employed various psychophysiological tools to examine the cognitive demands of both types of flights (Wilson, 2002; Alaimo, Esposito, Orlando, & Simoncini, 2020). This is a crucial issue, as the abilities required for such flights demand high levels of cognitive load (Dahlstrom & Nahlinder, 2009; Wilson, 2002; Magnusson, 2002), making the assessment of mental workload a key aspect.

A recent study on fighter pilots focused on evaluating how autonomic response, anxiety, perceived exertion, and self-confidence manifest during real flights compared to simulated flights. The first hypothesis proposed that "*the impact of acute effects (on heart rate variability and anxiety) would be greater in real flights than in simulations*". To assess the participants' pre-competitive anxiety, the Spanish version of the Competitive State Anxiety Inventory-2R (CSAI-2R) (Cox, Martens, & Russell, 2003; Andrade, Lois & Arce, 2007) was used. This questionnaire consists of 17 items that measure cognitive anxiety, somatic anxiety, and self-confidence. Additionally, the State-Trait Anxiety Inventory (STAI-E) (Spielberger et al., 1971) was employed to measure momentary anxiety, consisting of 20 items. The STAI-E score ranges from 20 to 80, where a higher score indicates a greater level of anxiety (Spielberger et al., 1971). Perceived exertion was also evaluated using the Rate of Perceived Exertion (RPE) scale, which ranges from 6 to 20 (Borg, 1970).

Following the findings from a study conducted on Air Force paratroopers, within the context of the Armed Forces and the State Security Forces, the use of the CSAI-2R scale has been deemed a valid and reliable model for diagnosing anxiety in physical activities, competitions, or sports with very particular and special characteristics, such as military parachuting. This activity presents very specific conditions compared to others, due to its context and idiosyncrasies, as well as the peculiarities that define the group to which they belong (Borrego, Ortín, Zurita, Díaz, & Morales, 2024).

However, in light of the aforementioned findings that highlight the high psychophysiological demands on military personnel and the importance of implementing specialized training programs to reduce professional risk and enhance the quality of their performance, we have found no evidence based on a review of the major scientific publication databases that the training process for members of the Civil Guard Traffic Division has been analysed. Furthermore, we have found no studies comparing psychophysiological responses between novices and experts, for example, during motorcycle driving, to observe potential differences between the two groups that could assist instructors in developing specific and individualized training programs. These programs would be of the highest quality, grounded in objective data supported by scientific studies.

The Civil Guard is a State Security Corps that, in accordance with the Spanish Constitution, is assigned the general mission of "*protecting the free exercise of rights and freedoms and ensuring public safety*." This mission is carried out by guaranteeing public security and assisting citizens, aiming to provide an effective and reliable police response that contributes to a sense of safety (Ministry of the Interior, Government of Spain).

Among the specializations, understood as the "*Set of capabilities that enable Civil Guard personnel to perform specific functions in particular areas of activity within units or organic positions within the Civil Guard structure, for which one or more specific qualifications are required*", is the Traffic Division. Its mission is the monitoring, regulation, assistance, and control of traffic and transportation, ensuring road safety on interurban roads, as well as addressing potential threats to the public. The firm commitment to performing these functions inevitably exposes them to situations that generate uncertainty and stress. Therefore, it is important to highlight the risks associated with duty performance, the diversity of tasks and scenarios, emotional burden, time pressure, administrative and bureaucratic challenges, exposure to trauma, and social expectations, among other stressors. The requirement for a high degree of concentration, cognitive skills, and decision-making under pressure makes it essential that Traffic Civil Guard agents have effective strategies for managing stress and maintaining optimal performance in all situations. In this regard, it is of utmost importance to address and manage stress through programs related to stress management training, not only for the operational improvement of the Unit but also for the health and quality of life of the individual (Ministry of the Interior, Government of Spain).

In this regard, Civil Guard officers also have the same automatic survival programs; however, these are subject to specific stressors inherent to the profession, along with ambiguous regulations regarding the use of force and firearms. To effectively balance all these variables in their professional duties, solid theoretical and practical training is necessary, in which self-control techniques are essential (Soto, 2020).

Currently, the importance of developing didactic methodologies related to multilateral training, adapted to law enforcement, is evident. This is an extremely effective tool for fostering and improving both the physical and psychological condition of individuals, as well as their overall quality of life. Additionally, it provides important resources related to the prevention of occupational stress for these members. A specialized physical education program is also strongly recommended, specifically designed for police officers, which should be tailored to the specific training tasks required for each job position (Fischetti, Cataldi, Latino, & Greco, 2019).

The objective of the study is to explore stress management among students of the Civil Guard Traffic School during motorcycle driving and piloting in emergency situations, simulating scenarios of uncertainty and physical demands. Accordingly, the following hypotheses are proposed:

1. **Cognitive Anxiety:** The first hypothesis proposes that there will be a significant increase in cognitive anxiety during the pre-test and in situations of stress and uncertainty while riding a motorcycle, compared to the post-test results.
2. **Somatic Anxiety:** The second hypothesis suggests that there will be a significant increase in somatic anxiety during the pre-test compared to baseline results, as well as a significant increase in the post-test during situations of stress and uncertainty while riding a motorcycle.
3. **Self-Confidence:** The third hypothesis to be established is the increase in self-confidence values in the basal situation, with respect to the pre-test and post-test. Likewise, this will be higher in the post-test than in the pre-test.
4. **State Anxiety:** The fourth hypothesis suggests that there will be a significant increase in state anxiety during the pre-test compared to baseline and post-test results. Likewise, there should be a

significant increase between the post-test and baseline in situations of stress and uncertainty while riding a motorcycle.

5. **Age of the participants:** The fifth hypothesis states that older participants will have more self-confidence than younger ones before the start of the driving test.
6. **Time holding a driving license:** The sixth hypothesis suggests that participants who have held their driving license for a longer period will have more self-confidence before the start of the driving test than those who have had the document for a shorter period.
7. **Self-taught daily driving practice:** he seventh hypothesis proposes that the level of anxiety and self-confidence of subjects who practice driving more days per week (high-frequency practice group) will show lower levels of anxiety and higher levels of self-confidence compared to subjects who practice driving fewer days per week (low-frequency practice group).
8. **Correlations between variables:** In the eighth hypothesis, it is expected that the values of cognitive and somatic anxiety, as well as state anxiety (STAI-E), will present significant positive correlations throughout the different moments of measurement (baseline, pre and post). On the other hand, self-confidence will also show significant negative correlations with cognitive and somatic anxiety, and with state anxiety.

MATERIAL AND METHODS

Participants

A total of 31 students of the motorcyclist's course in the traffic specialty at the traffic school of the civil guard took part in this cross-sectional study. The students had a mean age of 32.39 (6.17) years. Participants weighed 78.87 (8.67) kg and heighted 176.93 (5.71) m. A total of two women (33.00 ± 4.24 years) and 29 men (33.41 ± 6.33 years) participated. Research procedures were approved by the University ethics committee (approval number: 50/2024). Students agreed to participate in this study by giving written consent.

Table 1. Characteristics of students of the motorcyclists course in the traffic specialty at the traffic school of the civil guard in the sample.

Variable	Mean (SD)
Age (years)	33.39 (6.17)
Height (cm)	176.93 (5.71)
Weight (kg)	78.87 (8.67)
Body Mass Index (BMI); (kg/m^2)	20.58 (1.92)
Months of validity of the motorcycle driving permit	100.16 (71.33)
Days per week you have used the motorcycle during the last year	1.87 (2.16)

Procedure

Participants were evaluated before and after the driving test, which was specifically designed and standardized for this purpose. The circuit designed for the test included challenging manoeuvres and difficulties associated with potential real-life situations they might encounter in their future professional careers. In no case where they provided with or given information about the circuit's configuration or the type of manoeuvres and skills to be performed. This information was given moments before the start, just prior to completing the circuit.

The circuit consisted of a route lasting between 12 and 15 minutes, which was divided into four sections. **Section 1)** Over 150 meters, participants had to manoeuvre in a zig-zag pattern around cones at different speeds (30, 50, and 70 km/h). The distance between the cones was 5, 7, and 10 meters, respectively.

Section 2) Consecutive circles in the shape of an 8 configured with signalling cones. This manoeuvre had to be performed by first turning towards the dominant side and then towards the non-dominant side, linking five consecutive sequences. The diameter of each circle was 4 meters, and the distance between their centres was 6 meters. **Section 3)** Riding on a dirt track. Here, they had to face several technical difficulties without putting their foot on the ground. **Section 4)** Riding on an asphalt road where they had to travel at high speeds (100 km/h), aiming for the correct entry into curves, accelerating properly once past the challenging part of the route, and ending with decelerating the motorcycle and riding in a standing position for a stretch of 70 meters, during which they had to manoeuvre in a zig-zag pattern through a line of cones at speeds below 10 km/h.

Anxiety and self-confidence were assessed both in a baseline state after a rest period away from the test day, as well as immediately before and after completing the circuit. Under no circumstances did the participants take any medication, stimulant drinks, or other substances that could affect their nervous system 24 hours before taking the test.

Instruments

The Competitive State Anxiety Inventory - 2R (CSAI-2R) (7) was utilized to evaluate the participants' pre-competitive anxiety. This instrument is widely recognized for analysing these variables within sports contexts (29). It has been specifically employed with competitive athletes (28) and in other high-stress environments such as those experienced by fighter pilots (30). Version of Spanish (31) was used for Civil Guards. All participants confirmed their comprehension of the tool and their comfort in providing responses.

The questionnaire comprises 17 items designed to measure cognitive anxiety, somatic anxiety, and self-confidence. Each item is rated on a 4-point Likert scale, ranging from "*not at all*" to "*very much so*". The Cognitive Anxiety subscale, which assesses negative feelings about performance and its consequences, includes 5 items, with scores ranging from 5 to 20 points. The Somatic Anxiety subscale consists of 7 items that address physiological indicators of anxiety, such as muscle tension, increased heart rate, sweating, and stomach discomfort, with scores ranging from 7 to 28. Additionally, the inventory features a self-confidence subscale, which evaluates the athletes' confidence in their competitive success, using 5 items that provide scores between 5 and 20.

Anxiety was also measured using the State-Trait Anxiety Inventory (STAI-E) (34), which examines anxiety phenomena through two scales: A-Trait (A-T) and A-State (A-S), each consisting of 20 items. The 40-item questionnaire employs a Likert scale from 0 (almost never) to 3 (almost always). The A-T scale reflects a relatively stable propensity to perceive situations as threatening, influencing the A-S. The A-S scale captures a transient emotional state characterized by subjective feelings of tension and apprehension, along with autonomic nervous system hyperactivity, which varies over time. Scores are calculated by subtracting the negative scale from the positive scale and adding 30 to the result. It is noteworthy that in the Spanish version of the STAI used in this study, the response scale was modified from the original 0-4 to 0-3, affecting only the mean values (reduced by 20), with the adjusted values plus 30 points included here. This modification did not impact other statistics (standard deviation, reliability, correlation indices), allowing for direct comparison. The test scores range from 0 to 60, with higher scores indicating higher levels of anxiety (34).

Statistical analysis

Statistical analysis was performed using SPSS software (Statistical Package for the Social Sciences, version 25 for Windows, IBM Corporation, Armonk, NY, USA). Based on the Shapiro-Wilk test results, non-parametric tests were applied.

To assess the internal consistency of the questionnaires, a reliability analysis was conducted using Cronbach's alpha, with a threshold of .70 or higher (35). Additionally, the omega coefficient (36) was utilized to verify the internal consistency of the variables. According to some researchers (37), the omega coefficient provides evidence of greater accuracy. The range for the McDonald omega coefficient is between 0 and 1, with higher values indicating more reliable measurements. Campo-Arias and Oviedo (2008) suggest that a confidence value greater than .70 is necessary for the omega coefficient to be considered acceptable.

The Friedman test was used to examine differences between baseline, pre-competition, and post-competition measurements. Pairwise comparisons were then conducted using the Wilcoxon signed-rank test, with Bonferroni corrections applied for multiple comparisons. Additionally, Kendall's W effect sizes [r] were calculated and categorized as follows: <0.1 as a small effect, between 0.1 and 0.5 as a medium effect, and >0.5 as a large effect (39,40).

Furthermore, a bivariate correlation analysis was conducted using Spearman's correlation coefficients to study the relationships between psychological profile and perceived stress variables.

RESULTS

The mean of cognitive anxiety, somatic anxiety self-confidence and state anxiety are shown in Table 2. Our findings demonstrate that the questionnaires exhibit an adequate level of internal consistency, with Cronbach's alpha and McDonald omega coefficients for all variables being equal to or exceeding 0.70. High values of internal consistency were found in all variables, being in all cases greater than 0.80.

Table 2. Descriptive statistics and reliability analysis.

Variables	N	Minimum	Maximum	M	SD	α	ω
Cognitive anxiety	31	1.00	4.00	2.09	0.77	0.83	0.85
Somatic anxiety	31	1.00	3.57	1.76	0.66	0.89	0.90
Self-confidence	31	2.20	4.00	3.74	0.51	0.87	0.88
State anxiety (Positive scale)	31	0	1.90	0.63	0.51	0.85	0.87
State anxiety (Negative scale)	31	0.50	3.00	2.50	0.45	0.87	0.86

Note. M: Mean, SD: standard deviation, α: Cronbach's alpha, ω: omega coefficient.

Table 3. Differences in the cognitive anxiety, somatic anxiety, self-confidence and anxiety state variables at baseline, pre-test, and post-test.

Variables	Baseline Mean (SD)	Pre-Test Mean (SD)	Post-Test Mean (SD)	*p*-value	Effect Size	Pairwise comparisons
Cognitive anxiety	2.07 (0.79)	2.23 (0.78)	1.95 (0.74)	.010*	0.15	B>C = 0.016*
Somatic anxiety	1.65 (0.54)	1.99 (0.68)	1.68 (0.63)	.002**	0.20	B>A = 0.010* B>C = 0.028*
Self-confidence	3.77 (0.34)	3.72 (0.41)	3.72 (0.42)	.826	0.01	
State anxiety trait (Total)	7.03 (6.27)	15.81 (9.15)	10.97 (9.04)	<.001**	0.44	B>A = <0.001** B>C = 0.033* C>A= 0.033*

*Note. A: Baseline; B: Pre-Test; C: Post-Test; SD: Standard Deviation; STAI-E A-S: State Trait Anxiety Inventory A-State; * p-value < .05: ** p-value < .01.*

The results obtained, as can be clearly seen in Table 3, reveal that the values of state anxiety, cognitive anxiety, and somatic anxiety were significantly higher before the driving test (B) than after it (C). Likewise, both the recorded values of somatic anxiety and state anxiety were significantly higher in the pre-test (B) than those obtained in the baseline measurement (A). Similarly, state anxiety showed significantly higher values at the time of the post-test (C) compared to those obtained in the baseline (A). Regarding the values related to self-confidence, no significant differences were recorded.

On the other hand, the study variables were also analysed with respect to the differences in age, length of time the motorcycle license has been in circulation and daily practice of self-taught driving, showing below only those results where there were significant differences. Regarding the pre-test Self-confidence variable and in relation to the participants' age, there are significant differences between the 30-39 age group (3.59) and the ≥40 age group (3.97). This variable also showed significant differences between the Civil Guards who obtained their license less than 60 months ago (3.98) and those who obtained it between 60 and 119 months ago (3.49).

Lastly, differences were observed in pre-test State Anxiety between those who have practiced four or more days (20.86) and those who have practiced between one and three days (10.20).

Table 4. Correlations between the baseline, the pre- and post-test values of the variables related with cognitive anxiety, somatic anxiety, self-confidence and anxiety state.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Cognitive anxiety baseline	1											
Somatic anxiety baseline	.53**	1										
Self-confidence baseline	-.53**	-.64**	1									
STAE-E baseline	.49**	.70**	-.61**	1								
Cognitive anxiety pre	.77**	.22	-.20	.24	1							
Somatic anxiety pre	.57**	.71**	-.56**	.55**	.32	1						
Self-confidence pre	-.64**	-.56**	.66**	-.55**	-.39*	-.60**	1					
STAE-E pre	.36*	.48**	-.43*	.45*	.23	.61**	-.55**	1				
Cognitive anxiety post	.79**	.26	-.27*	.39*	.85**	.45*	-.48**	.22	1			
Somatic anxiety post	.36*	.37*	-.37*	.51**	.17	.69**	-.44**	.37*	.31	1		
Self-confidence post	-.36*	-.36*	.41*	-.45*	-.23	-.27	.52**	-.51**	-.25	.29	1	
STAE-E post	.53**	.36*	-.50**	.58**	.42*	.69**	-.56**	.50**	.52**	.76**	-.39*	
M	2.07	1.65	3.77	7.03	2.23	1.99	3.72	15.81	1.95	1.68	3.72	
SD	0.79	0.54	0.34	6.27	0.78	0.68	0.41	9.15	0.74	0.63	0.97	
N	31	31	31	31	31	31	31	31	31	31	31	

Note. * $p < .05$; ** $p < .01$.

Table 4 shows the results of the correlations between the study variables. These are: state anxiety, cognitive anxiety, somatic anxiety and self-confidence at the different recording moments. Both at baseline, as well as before and after the driving test. There was correlation in the great majority except for the following correlations: Basal state anxiety and pre-test cognitive anxiety; -Pre-test state anxiety and post-test cognitive anxiety; -Pre-test cognitive anxiety and somatic anxiety; -Pre-test cognitive anxiety and basal self-confidence; -Post-test cognitive anxiety and basal somatic anxiety; -Post-test cognitive anxiety and pre-test state anxiety; -Pre-test somatic pre-test anxiety and pre-test cognitive anxiety; -Pre-test somatic anxiety and pre-test self-confidence; -Post-test somatic anxiety and pre-test somatic anxiety; -Post-test somatic anxiety and post-test cognitive anxiety; -Post-test somatic anxiety and post-test self-confidence; -Post-test somatic anxiety and post-test cognitive anxiety; -Post-test somatic anxiety and post-test self-confidence. Post-test self-confidence and pre-test cognitive anxiety; - Post-test self-confidence and post-test cognitive anxiety.

DISCUSSION

The objective of the present study was to analyse the relationships between completing a specific driving test and the levels of anxiety and self-confidence obtained in a sample composed of students from the Traffic School of the Guardia Civil. Data were recorded during a Rest situation (baseline), prior to the test (Pre-test), and after the test (Post-test). The results showed that cognitive anxiety, somatic anxiety, and state anxiety were higher before the driving test than after it. On the other hand, both somatic anxiety and state anxiety were higher before the start of the test than in the baseline situation. Regarding self-confidence, no significant differences were found to support the hypothesis, although there are studies that might explain this. Finally, higher levels of general anxiety were observed after completing the specific driving test compared to the levels recorded in the baseline situation.

The first hypothesis is partially fulfilled. Although the results showed higher levels of cognitive anxiety in the pre-test compared to the post-test, there were no significant differences between the values observed in the pre-test and the post-test, nor their hypothetical relationship with the baseline. It is important to remember that the motorcycle driving test was conducted in an academic context, subject to continuous evaluation. There are studies that have evaluated academic emotions and found that post-evaluative cognitive anxiety could be more intense in students who were uncertain about their performance. These students experienced high levels of uncertainty about the results and concern over future consequences. Rumination and negative self-evaluation increased anxiety levels after completing the evaluative task (Pekrun, Goetz, & Perry, 2002). This would justify the data reflected in the results related to post-test cognitive anxiety.

The second hypothesis is almost entirely confirmed. The results reflect the existence of significant differences between the pre-test and post-test, as well as between the pre-test and the baseline, confirming the trend observed in other studies, such as the one conducted with fighter pilots related to the psychophysiological response during aerial attack situations in simulated flight (Hormeño & Clemente, 2019). In this study, an increase in somatic anxiety was observed in the pilots before the simulated flight compared to afterward. Regarding the relationship between the baseline and post-test, although differences exist, they are not significant. This could be related to the idiosyncrasies of the situation and the timing of the baseline recording, which was carried out when the civil guards were beginning the demanding academic regimen of the Driving Course, potentially interfering with the baseline data.

Although the third hypothesis is not fulfilled, there are studies that offer similar information to the results obtained. Specifically, the one conducted with parachutists from military units, in which the novices, likewise, did not show significant differences related to self-confidence before and after the jump (Clemente et al., 2016). In line with this, and in relation to the analysis of the subjective perception of self-confidence, the study also reflected that the group of veteran parachutists did show higher values than the novices after the jump compared to pre-jump. A possible cause could be related to the level of experience. This is a key factor in enhancing effectiveness and thereby improving performance, emphasizing the importance of training in real-life situations (Bandura, 1990).

The fourth hypothesis was fully supported. The anxiety values show a clear and consistent pattern in which general anxiety levels vary significantly across the different situations: baseline, before the test, and after the test. In the baseline situation, general anxiety levels were relatively low, which is consistent with the perception of being distant from risk, generating relative calm in the absence of an imminent threat or challenge, such as the driving test. However, as expected, before the test, general anxiety levels increased significantly. This increase could be related to the imminent participation in the driving test, which triggered emotional and psychological activation, consistent with an evaluative and potentially stressful situation, as supported by the theory of anticipatory anxiety (Barlow et al., 1996). This theory highlights how individuals experience increased anxiety when anticipating an important challenge.

The fifth hypothesis meets expectations. Thus, the older group showed higher levels of self-confidence before the test, which seems logical, as older individuals are typically associated with more reflective and mature profiles (Jones, Hanton, and Connaughton, 2002). This study, which explored self-confidence in sports performance, not only linked sports practice with increased self-confidence but also observed significant differences in how younger athletes and older adults manage their self-confidence. While younger athletes exhibited more dramatic fluctuations in their self-confidence depending on recent test results, older adults who managed to maintain stable self-confidence tended to perform more consistently. Older adults with higher self-confidence achieved better results, even when facing greater physical challenges than younger athletes. This study emphasizes that, although self-confidence is beneficial at all ages, older adults may gain greater benefits from maintaining high confidence before a test, as they tend to face more significant physical and psychological strain.

Regarding the sixth hypothesis, it is not supported. There were higher levels of self-confidence in the group of individuals with less time holding a driver's license compared to those with longer possession of the license. This could be related to regular practice, as someone who has had a license for a long time but does not drive regularly may develop lower levels of self-confidence than someone who has had the license for a shorter time but drives frequently. The latter group may acquire more skills through regular practice, leading to a natural increase in self-confidence.

In relation to the seventh hypothesis, related to the frequency of daily driving practice, the data do not reflect the expected hypothesis. Interestingly, the group that dedicated more days per week to practice (high frequency practice group), showed higher levels of anxiety than the subjects who practiced driving less days per week (low frequency practice group). In this sense, it is likely to have affected the self-teaching method used by the participants during the practice time, which does not fit with the model called "*deliberate practice*". This model explains how mastery of a skill comes not simply from repetition, but from the way it is practiced. Unlike regular practice, which can be repetitive or unfocused, deliberate practice, compatible with the "*competency-based*" educational model and whose characteristics are situated and contextualized learning in the specific environment and daily activities centred on the subject, proposes that to acquire the level of expertise in a skill, it must be subject, not only to the time spent in the repetition of the practice, but also to the quality, process and specificity of the practice (Ericsson, 2008). For this reason, the absence of specific competencies could have resulted in more interference in those subjects with more practice time but self-taught.

The eighth and final hypothesis, related to the correlation between the variables, is generally fulfilled. The results reflect that, for the most part, there is a significant relationship between the various forms of anxiety and self-confidence at different stages of the study. The resulting correlation generally suggests that as levels of anxiety (state, cognitive, and somatic) increase, self-confidence tends to decrease. This finding is consistent with existing literature, which highlights how anxiety can negatively impact the perception of competence and a person's self-control, especially in evaluative or competitive contexts (Bandura, 1997). Aside from the general correlations, several exceptions were noted where no correlation was obtained. These exceptions include the following:

1. **Baseline state anxiety and pre-test cognitive anxiety**. Baseline state anxiety represents a general level of anxiety at rest, while pre-test cognitive anxiety is more related to specific concerns before

the test. This suggests that resting anxiety does not necessarily predict specific cognitive worries related to performance.

2. **Pre-test state anxiety and post-test cognitive anxiety**. The lack of correlation between these two types of anxiety may indicate that the anxiety experienced before a test does not always influence subsequent cognitive anxiety, which may be more related to the evaluation of one's performance after completing the test.
3. **Pre-test cognitive anxiety and somatic anxiety.** Although both types of anxiety are generally interrelated, the absence of correlation suggests that some individuals may have experienced anxious thoughts without manifesting physical symptoms, potentially depending on the individual profile of certain participants.
4. **Pre-test cognitive anxiety and baseline self-confidence**. The lack of correlation may reflect that pre-test cognitive concerns do not always affect the stable self-confidence that individuals possess before facing a situation. Some people may maintain a strong sense of self-confidence regardless of their cognitive anxiety before the test.
5. **Post-test cognitive anxiety and baseline somatic anxiety**. The absence of correlation indicates that post-test cognitive anxiety is not necessarily related to resting levels of somatic anxiety, suggesting that worries and physical symptoms may operate independently at different times.
6. **Post-test cognitive anxiety and pre-test state anxiety**. This suggests that the emotional state before the test did not affect the cognitive anxiety that may arise after the evaluation, as performance-related worries may depend more on external experiences than on the test itself.
7. **Pre-test somatic anxiety and pre-test cognitive anxiety**. The lack of correlation may indicate that, for some individuals, the physical symptoms of anxiety and cognitive worries may have experienced different levels of activation, implying that not all participants responded in the same way to the evaluative situation.
8. **Pre-test somatic anxiety and pre-test self-confidence**. The lack of correlation may suggest that some individuals may have felt physical symptoms of anxiety without this affecting their perception of self-confidence before a test.
9. **Post-test somatic anxiety and pre-test somatic anxiety**. The absence of this correlation may suggest that somatic symptoms may have changed significantly after the test based on how participants evaluated their performance, regardless of how they felt physically beforehand.
10. **Post-test somatic anxiety and post-test cognitive anxiety**. The lack of correlation suggests that, although both types of anxiety should have been present after the test, they manifested independently, depending on the individual's perception of their performance.
11. **Post-test somatic anxiety and post-test self-confidence**. This lack of correlation suggests that physical symptoms of anxiety after the test did not directly affect the perception of self-confidence, as participants may have felt relieved after completing the task, potentially boosting their self-confidence.
12. **Post-test self-confidence and pre-test cognitive anxiety**. The lack of correlation between these two variables suggests that the concerns expressed before the start of the test did not necessarily affect self-confidence afterward, as participants may have reevaluated their performance after completing the test.
13. **Post-test self-confidence and post-test cognitive anxiety**. This absence of correlation may indicate that post-test cognitive anxiety did not affect subsequent self-confidence, which may also reflect those participants felt satisfied with their results despite their worries.

Finally, after the test, general anxiety levels decreased significantly, although they did not return to baseline levels. This decrease reflects the reduction of uncertainty and relief after completing the test. However, the fact that anxiety levels did not fully return to initial values may be related to the self-perception of performance and post-test evaluation, factors that tend to maintain a certain level of emotional activation even after overcoming a stressful situation.

CONCLUSIONS

The results obtained reveal that the levels of state anxiety, cognitive anxiety, and somatic anxiety were significantly higher before the driving test than after it. Both somatic anxiety and state anxiety were greater before the test than in the baseline condition. State anxiety showed higher values after the test compared to those obtained in the baseline measurement. Additionally, it showed higher values before the test in participants who had practiced self-taught for four or more days a week compared to those who had practiced between one and three days. Self-confidence showed significant differences both in relation to the established age groups, with those aged ≥40 years displaying higher values than those aged 30 to 39, and in the groups related to the length of time holding a driver's license, with higher values observed in the group with less than 60 months of possession compared to those with more than 60 months. The observed correlations mainly support how anxiety negatively impacts self-confidence. The exceptions highlight the importance of considering the context and individual emotional state. The variables of anxiety and self-confidence may be influenced by various factors. The lack of correlation in some cases indicates that these dynamics are not always linear or predictable. This finding emphasizes the need for a more nuanced approach in correlation studies between anxiety and self-confidence that takes into account individual differences and the specificities of each situation.

In summary, the results of this study highlight the complexity of the interactions between anxiety and self-confidence in evaluative contexts, suggesting areas for improvement in both the training of the Civil Guard officers and future research on psychological management in driving tests. It is crucial to consider the development of intervention programs that strengthen participants' self-confidence by incorporating strategies that promote a positive mental state and reduce anxiety.

AUTHOR CONTRIBUTIONS

Miguel Ángel Moyano-Galán was involved in data curation, selection of volunteers, methodology, investigation, resources, writing-review & editing, supervision, and final approval the manuscript. Juan Pedro Fuentes-Garcia involved in conceptualization, methodology, resources, selection of volunteers, validation, procedure administration, formal analysis, data curation and collection, writing-original draft, and final approval the manuscript. Santos Villafaina was involved in conceptualization, methodology, formal analysis, supervision, writing-original draft, approved the final version.

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REFERENCES

Alaimo, A., Esposito, A., Orlando, C., & Simoncini, A. (2020). Aircraft Pilots Workload Analysis: Heart Rate Variability Objective Measures and NASA-Task Load Index Subjective Evaluation. Aerospace, 7, 137. https://doi.org/10.3390/aerospace7090137

Andrade Fernández, E.M., Lois Río, G., & Arce Fernández, C. (2007). Propiedades psicométricas de la versión española del Inventario de Ansiedad Competitiva CSAI-2R en deportistas. Psicothema, 19, 150-155.

Bandura, A. (1990). Perceivedself-efficacy in the exercise of personal agency. J.Appli.Sport. https://doi.org/10.1080/10413209008406426

Bandura, A. (1997). Self-efficacy: The exercise of control. Macmillan.

Barlow, D. H., Chorpita, B. F., & Turovsky, J. (1996). Fear, panic, anxiety, and disorders of emotion. Nebraska Symposium on Motivation, 43, 251-328.

Borg, G. (1970). Perceived exertion as an indicator of somatic stress. Scand. J. Rehabil. Med. 2, 92-98. https://doi.org/10.2340/1650197719702239298

Borrego-Balsalobre, F. J., Ortín-Montero, F. J., Zurita-Ortega, F., Díaz-Suárez, A., & Morales-Baños, V. (2024). Can performance indicators and skydiving experience prognosticate competitive state anxiety in elite paratroopers?. Journal of Human Sport and Exercise, 19(1), 23-36. https://doi.org/10.14198/jhse.2024.191.03

Clemente-Suárez, V. J., Dela Vega, R., Robles-Pérez, J.J., Lautenschlaeger, M., & Fernandez-Lucas, J. (2016). Experience modulates the psychophysiological response of airborne warfighters during a tactical combat parachute jump. International Journal of Psychophysiology. https://doi.org/10.1016/j.ijpsycho.2016.07.502

Cox, R.H., Martens, M.P., & Russell, W.D. (2023) Measuring anxiety in athletics: The revised competitive state anxiety inventory-2. J. Sport Exerc. Psychol. 25, 519-533. https://doi.org/10.1123/jsep.25.4.519

Craft, L., Magyar T., Becker B., & Feltz D. (2023). The relationship between the Competitive State Anxiety Inventory-2 and sport performance: a meta-analysis. J Sport Exerc Psychol; 25: 44-65. https://doi.org/10.1123/jsep.25.1.44

Dahlstrom, N., & Nahlinder, S. (2009). Mental workload in aircraft and simulator during basic civil aviation training. Int. J. Aviat. Psychol. 19, 309-325. https://doi.org/10.1080/10508410903187547

Delgado-Moreno, R., Robles-Pérez, J.J., Aznar-Laín, S., Clemente-Suárez, V.J. (2019) Effect of experience and psychophysiological modification by combat stress in soldier's memory. J. Med. Syst. 43, 150. https://doi.org/10.1007/s10916-019-1261-1

Diaz-Manzano, M., Fuentes, J.P., Fernandez-Lucas, J., Aznar-Lain, S., Clemente-Suárez, V.J. (2018). Higher use of techniques studied and performance in melee combat produce a higher psychophysiological stress response. Stress Health. 34, 622-628. https://doi.org/10.1002/smi.2829

Ericsson, K.A. (2008). Deliberate practice and the acquisition and maintenance of expert performance: a general overview. Acad Emerg. Med. 988-994. https://doi.org/10.1111/j.1553-2712.2008.00227.x

Fischetti, F., Cataldi, S., Latino, F., & Greco, G. (2019). Effectiveness of multilateral training didactic method on physical and mental wellbeing in law enforcement. Journal of Human Sport and Exercise, 14(4proc), S906S915. https://doi.org/10.14198/jhse.2019.14.Proc4.53

Fuentes-García, J. P., Villafaina, S., Mas, J., & Martínez-Gallego, R. (2023). New insight into the psychophysiological load management in sports. Physiology & Behavior, 258. https://doi.org/10.1016/j.physbeh.2022.114026

Gerathewohl, S.J. (1969). Fidelity of Simulation and Transfer of Training: A Review of the Problem; US Department of Transportation, Federal Aviation Administration, Office of Aviation Medicine: Washington, DC, USA.

Greenberg, J. (1999). Stress Management. New York: McGrew-Hill, Vol. 300.
Hormeño-Holgado, A.J., Clemente-Suárez, V.J. (2019). Effect of different combat jet manoeuvres in the psychophysiological response of professional pilots. Physiol. Behav. 208, 112559. https://doi.org/10.1016/j.physbeh.2019.112559
Jarvis, M. (2002). Sport Psychology. New York: Routledge.
Jones, G. (2000). Stress and anxiety. In: SJ Bull (ed) Sport psychology: a self-help guide. Ramsbury, Marlborough: Crowood, pp.31-51.
Jones, G., Hanton, S., & Connaughton, D. (2002). What Is This Thing Called Mental Toughness? An Investigation of Elite Sport Performers. Journal of Applied Sport Psychology, 14(3), 205-218. https://doi.org/10.1080/10413200290103509
Koning, R.H. (2009). Sport and measurement of competition. Economist (Leiden); 157: 229-249. https://doi.org/10.1007/s10645-009-9113-x
Magnusson, S. (2002). Similarities and differences in psychophysiological reactions between simulated and real air-to-ground missions. Int. J. Aviat. Psychol. 12, 49-61. https://doi.org/10.1207/S15327108IJAP1201_5
Martens, R. (1977). Sport competition anxiety test. Champaign, IL, USA: Human Kinetics. https://doi.org/10.1037/t27556-000
Martens, R., Vealey, R., & Burton D. (1990). Competitive anxiety in sport. Champaign, IL, USA: Human Kinetics.
Martínez-Gallego, R., Villafaina, S., Crespo, M., Fuentes-García, J.P. (2022) Gender and Age Influence in Pre-Competitive and Post-Competitive Anxiety in Young Tennis Players. Sustainability, Vol 14, Page 4966. https://doi.org/10.3390/su14094966
Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. Educational Psychologist, 37(2), 91-105. https://doi.org/10.1207/S15326985EP3702_4
Simon, J. & Martens, R. (1979). Children's anxiety in sport and non sport evaluative activities. J Sport Exercis Psychol; 1: 160-169. https://doi.org/10.1123/jsp.1.2.160
Smith, R.E. & Smoll, F.L. (2004). Psychosocial interventions in youth sport. In: Van Raalte JL, and Brewer BW (eds) Exploring sport and exercise psychology, Washington, DC: American Psychological Association, pp.287-315. https://doi.org/10.1037/10186-013
Smith, R.E. (1989). Effects of coping skills training on generalized self-efficacy and locus of control. J Pers Soc Psychol; 56: 228-233. https://doi.org/10.1037//0022-3514.56.2.228
Soto Rodríguez, J. A. (2020). Autoeficacia percibida de las técnicas de autocontrol en el entrenamiento policial [http://purl.org/dc/dcmitype/Text]. Cuadernos de la Guardia Civil: Revista de seguridad pública, ISSN 1136-4645, Nº 61, 2020, págs. 203-223.
Spielberger, C.D., Gonzalez-Reigosa, F., Martinez-Urrutia, A., Natalicio, L., & Natalicio, D.S. (1971). Development of the Spanish edition of the state-trait anxiety inventory. Interam. J. Psychol. 5, 145-158.
Vicente-Rodríguez, M., Fuentes-Garcia, J. P., & Clemente-Suarez, V. J. (2020). Psychophysiological Stress Response in an Underwater Evacuation Training. International Journal of Environmental Research and Public Health, 17(7). https://doi.org/10.3390/ijerph17072307
Vicente-Rodríguez, M., Gallego, D. I., Fuentes-García, J. P., & Clemente-Suárez, V. J. (2020). Portable Biosensors for Psychophysiological Stress Monitoring of a Helicopter Crew. Sensors, 20(23). https://doi.org/10.3390/s20236849
Wilson, G.F. (2002). A comparison of three cardiac ambulatory recorders using flight data. Int. J. Aviat. Psychol. 12, 111-119. https://doi.org/10.1207/S15327108IJAP1201_9

Wilson, G.F. (2002). An analysis of mental workload in pilots during flight using multiple psychophysiological measures. Int. J. Aviat. Psychol. 12, 3-18. https://doi.org/10.1207/S15327108IJAP1201_2

