



Shame following performance failure as a potential mediator between sport contingent self-esteem and both competitive anxiety and burnout among elite athletes

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ABSTRACT

Previous research has demonstrated that basing self-esteem on performance in a specific context can yield both favorable and adverse outcomes. To assist high achievers whose performance is strongly connected to their self-worth, an important initial step is to identify when this becomes problematic. From a theoretical standpoint, we hypothesize that shame following performance failure may help explain the association between basing self-esteem on performance and negative outcomes related to performance and health. That is, it may be when basing self-esteem on performance develops into shame following performance failure that such consequences emerge. To explore this hypothesis, we conducted a cross-sectional study with 176 elite athletes to examine whether shame following performance failure statistically mediates the associations between basing self-esteem on performance and competitive anxiety and athlete burnout. The findings in the present study were consistent with the idea that shame following performance failure could play a key explanatory role. Initial analyses showed significant direct associations between basing self-esteem on performance and five out of six dimensions of competitive anxiety and athlete burnout, with correlation coefficients ranging from 0.42** to -0.22**. However, when shame following performance failure was statistically tested as a potential mediator, these direct effects were substantially reduced and became non-significant (ranging from 0.08 to -0.02). This pattern is statistically consistent with mediation, although it should not be interpreted causally given the cross-sectional nature of the data. Despite limitations, this study may offer an important step toward a better understanding of when, and under what circumstances, basing self-esteem on performance leads to negative outcomes.

1. Introduction

Striving to perform well can become so important to a person that, ironically, it ends up having negative consequences for their

performance. High achievers often tie their self-worth to success in their chosen fields (Lawrence & Williams, 2013). Basing self-esteem on performance in a specific context (contingent self-esteem¹ [CSE] within a specific context [e.g., academic CSE, work CSE, sport CSE]), has

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¹ Crocker and Wolfe (2001) developed the Contingencies of self-worth scale, an instrument designed to assess seven different contingencies of self-worth college students often base their self-esteem on. While this instrument has gained widespread recognition, other similar instruments have also been developed—some based on the same theoretical framework, but with different emphases or applications (e.g., Schöne, Tandler, & Stiensmeier-Pelster, 2015; Wouters, Verschueren, Briers, & Janssen, 2016). The instrument used in the present study (the Performance-based self-esteem scale; Hallsten, Josephson, & Torgén, 2005) was developed around the same time as the Contingencies of Self-Worth Scale and shares a close theoretical alignment with it. Although it has primarily been applied within Nordic context, it has in recent years also appeared in studies conducted in other countries and regions e.g., Slovenia (Psenicny & Perat, 2020), France (Huyghebaert-Zouaghi, Berjot, & Gillet, 2022) and India (Varghese, Gnanaselvam, & Joseph, 2023). Despite some variation in the specific instruments used, we assume that they fundamentally measure the same phenomena, namely performance in a specific context as important for self-esteem. In this study, we use the term contingent self-esteem (similarly to Schöne et al., 2015; Wouters et al., 2016) since we do not employ Crocker and Wolfe (2001's) original instrument. We are aware of the ongoing discussion regarding the potential conceptual distinction between self-esteem and self-worth (e.g., Batchelder & Hagan, 2023), but in line with literature in the field, highlighted by for example Herrmann, Koeppen, and Kessels (2019), we treat these concepts interchangeably in the present study. This also applies to the related concepts contingent self-esteem and contingent self-worth, which are treated as synonyms in this article.

demonstrated correlations with positive consequences, such as more performance enjoyment, greater motivation, more time spent on training and better test-performance (e.g., Chang, 2025; Kowalewski, Song, Friedman, & Vuvan, 2022; Kuykendall, Craig, & Tay, 2019). However, performance could be so strongly connected to individuals' self-worth that it ends up having negative consequences e.g., stress/burnout, test anxiety (e.g., Chang, 2025; Ching, Wu, & Chen, 2021; Gustafsson, Martinet, Isoard-Gautheur, Hassmén, & Guillet-Descas, 2018; Lavrijsen, Soenens, Vansteenkiste, & Verschueren, 2023). To assist high achievers (in a variety of fields) whose performance is closely tied to their self-esteem, an essential initial step is to explore when and under what circumstances this relationship becomes problematic. The present investigation is designed to extend our understanding by exploring whether the associations between sport CSE and competitive anxiety and athlete burnout are statistically consistent with shame following performance failure acting as a potential mediator in elite athletes.

1.1. Theoretical background related to self-esteem

In research on self-esteem, two highly influential and interconnected theories stand out. The sociometer theory (Leary, 2005, 2021) takes an evolutionary perspective on self-esteem and argues that self-esteem serves as an emotional signal indicating relational value in important social contexts. The second theory, the theory related to the contingencies of self-worth model (Crocker & Wolfe, 2001) argues that through socialization and interactions with others, individuals learn what attributes will enhance their regarded worth in significant social contexts. Crocker and Wolfe (2001) call these attributes “contingencies of self-worth”, proposing they form the basis of an individual's self-esteem. When individuals have a domain in which self-esteem is staked, they must reach a certain level of success to feel content. Individuals' contingencies of self-worth—which serves as the foundation for their self-esteem—varies from person to person but significantly influences their behavior. For instance, a person who bases their self-esteem on appearance will spend more time on activities related to appearance, such as dressing, shopping, and partying (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Results from experimental studies show the connection between the sociometer theory and the contingencies of self-worth model (Horberg & Chen, 2010; vanDellen, Hoy, Fernandez, & Hoyle, 2011; vanDellen, Hoy, & Hoyle, 2009), demonstrating that people whose approval an individual values highly have an influence on that individual's contingencies of self-worth. Several researchers in the field (Batchelder & Hagan, 2023; Reitz, 2022) combine the sociometer theory (Leary, 2005, 2021) and the contingencies of self-worth model (Crocker & Wolfe, 2001) as a theoretical basis for their research. A combination of these two influential theories can define self-esteem as “global judgements of self-worth” (Crocker & Wolfe, 2001, p. 594) and view these global judgments as highly influenced by meeting standards in relation to contingencies of self-worth and experiencing relational value within important social groups.

1.2. Basing self-esteem on performance

Basing self-esteem on performance is preferably studied in a domain-specific manner, and findings across domains show strong similarities. An individual might base self-esteem on performance in a specific context (e.g., school or sport) but may also exhibit performance as important for self-esteem across multiple contexts simultaneously. Previous research supports the use of domain-specific instruments over more general measures (Schwinger, Schöne, & Otterpohl, 2017). Research on performance in a specific context as important for self-esteem has primarily been conducted within educational settings, with a relatively large body of studies also found in work-related contexts. The sports context has been explored in a limited number of studies, as have music- and gaming- contexts. We propose that the general patterns

in the consequences of basing self-esteem on performance across various fields (e.g., Kuykendall et al., 2019; Mageau, Carpentier, & Vallerand, 2011; van der Kaap-Deeder et al., 2016) indicate that one context can benefit from the insights gained in other specific contexts. In the present study, we investigate elite athletes, based on the assumption that the findings have the potential to contribute knowledge and insights of relevance across contextual boundaries.

Previous research has demonstrated that basing self-esteem on performance can yield both positive and negative outcomes across various contexts. In terms of positive outcomes, basing self-esteem on performance has been associated with, for example, intrinsic motivation and enjoyment in both educational (e.g., Chang, 2025; van der Kaap-Deeder et al., 2016) and occupational settings (e.g., Kuykendall et al., 2019); higher engagement in performance pursuits in school contexts (van der Kaap-Deeder et al., 2016) as well as in music-related research (e.g., Kowalewski et al., 2022); and spending more time on performance has similarly emerged in studies conducted within both educational and musical domains (e.g., Crocker et al., 2003; Kowalewski et al., 2022). Negative consequences have also been widely documented. Among these, elevated levels of basing self-esteem on performance are frequently linked to stress/burnout and performance anxiety, which are particularly recurrent in previous research across several domains (e.g., Blom, 2012; Chang, 2025; Ching et al., 2021; Gustafsson et al., 2018; Herrmann et al., 2019; Lavrijsen et al., 2023; Otterpohl, Lazar, & Steinmeier-Pelster, 2019; Richter, Schraml, & Leineweber, 2015). Initially, research emphasized the negative impacts of basing self-esteem on performance (see e.g., Crocker & Park, 2004), while only a few studies highlighted its potential benefits (Osborne & Jones, 2011). Over time, a more nuanced understanding has emerged, recognizing that basing self-esteem on performance may lead to both positive and negative outcomes. Lawrence and Crocker (2009) emphasize that, with cumulative research, researchers and practitioners will come to understand when and under what circumstances basing self-esteem on performance will lead to negative consequences.

Numerous studies have contributed to cumulative research related to when basing self-esteem on performance becomes problematic. Research in the school context has developed several forms of divisions on the concept academic CSE, where one dimension is associated with negative consequences, but not the other (Griffin, Chavous, Cogburn, Branch, & Sellers, 2012; Lawrence & Gonzales, 2023; Lawrence, Gonzales, & Sutherland, 2021; Liu & Huang, 2018; Wouters et al., 2016). Griffin et al. (2012) separated dependent dimensions of academic CSE (e.g., “When I do poorly on an exam or paper, my self-esteem suffers”) and self-worth enhancing (e.g., “I feel better about myself when I know I'm doing well academically”). The positive dimension was described as self-esteem that is strengthened by positive achievements but not necessarily diminished by negative feedback regarding performance in school. Similar divisions have been made in other studies with similar findings (Liu & Huang, 2018; Wouters et al., 2016). Lawrence with colleagues (Lawrence et al., 2021; Lawrence & Gonzales, 2023) have conducted a statistical division between two dimensions with an even better model fit. They use a different measurement instrument, in which two out of four items related to negative contingencies include that students perceive themselves as worthless as a person when performing poorly in school (shame following performance failure). In both studies (Lawrence et al., 2021; Lawrence & Gonzales, 2023) they separated a general-contingency factor and a positive-contingency factor, which were differently related to positive and negative consequences. The general-contingency factor was a predictor of, for instance, future low self-esteem, test anxiety, and stress. Conversely, the positive-contingency dimension predicted future high self-esteem but showed no relation to future stress and test anxiety. Lawrence et al. (2021) found that students who scored high on the general-contingency factor experienced fluctuations in state self-esteem in response to academic outcomes. In contrast, when isolating the positive-contingency factor, it primarily contributed to boosts in self-esteem following positive

outcomes. One drawback of this statistical division of academic CSE, as highlighted by Lawrence and Gonzales (2023), is that it does not provide specific practical recommendations. In summary, research on when basing self-esteem on performance leads to problems has made significant progress, but the field still requires more accumulated research to be able to guide practitioners.

The present study builds upon the aforementioned research but takes a slightly different approach. Studies investigating when basing self-esteem on performance becomes problematic have examined the relationships between dimensions of academic CSE and outcome variables (Griffin et al., 2012; Lawrence et al., 2021; Lawrence & Gonzales, 2023; Liu & Huang, 2018; Wouters et al., 2016). However, this approach has limitations; the first is that two individuals with one contingency equally important to their self-esteem may react differently to events related to the specific contingency because of differences in other domains on which they base their self-esteem (Batchelder & Hagan, 2023; Schwinger et al., 2017). Research from Kernis et al. regarding stability of self-esteem (Kernis, 1993) has shown that basing self-esteem on performance often correlated with increased self-esteem instability. Additionally, so-called intrinsic contingencies that are within the individual's control enhance greater stability in self-esteem (Vonk & Smit, 2012). For example, studies on Kernis and Goldman's conceptualization of authenticity (Kernis & Goldman, 2006) have shown that individuals with high authenticity tend to demonstrate increased and more stable self-esteem. Moreover, research focusing on athletes in relation to religion and spirituality have demonstrated that religious athletes with a relationship to God characterized by comfort during difficult times and support during challenges have higher self-esteem, lower shame following performance failure, and lower competitive anxiety (Houlberg, Wang, & Schnitker, 2017; Upenieks, Bounds, Melton, Glanzer, & Schnitker, 2024). A second, closely related limitation is that a complete overview of all the domains an individual might base their self-esteem on does not currently exist (Reitz, 2022). Lawrence et al. (Lawrence et al., 2021; Lawrence & Gonzales, 2023), who use an instrument that measures whether the student's self-esteem rises with academic successes and whether it decreases with academic setbacks, argue that students base their self-esteem on academic successes and setbacks. There are nuanced differences in theoretical perspectives, where we instead propose that individuals base their self-esteem on performance in a specific context. Individuals are then expected to reach a certain threshold level to feel content (Crocker & Park, 2004). One could imagine this as a matter of degree—where reaching one level results in pride, another level leads to being somewhat dissatisfied, and yet another to being more dissatisfied, and so on. Individuals may also have a focus on positive-or negative contingency dimensions (Vonk & Smit, 2012), like approach and avoidance goals (e.g., Elliot, Murayama, & Pekrun, 2011; Urdan & Kaplan, 2020), but we suggest that whether one experience shame following performance failure is largely influenced by other contingencies of self-worth, beyond basing self-esteem on performance. When a person performs poorly yet has other aspects that provide self-esteem so they can say, "It was a bad performance, [but] I am still okay as a person," it creates a different prerequisite than for someone whose self-esteem is so closely tied to performance in their specific context that leads them to perceive themselves as worthless as a person when performing poorly (shame). This approach suggests shifting the focus toward the emotional characteristic of unstable self-esteem at its lowest point, namely shame—or more precisely in this context, shame following performance failure.

1.3. Shame following performance failure as a potential mediator

Previous research highlights shame following performance failure as particularly relevant for understanding when basing self-esteem on performance may lead to negative outcomes. For individuals whose self-esteem is closely tied to their performance, experiencing failure can lead to feelings of shame (Kernis, 2003). Research related to contingencies of

self-worth (Crocker & Luhtanen, 2003) build upon previous studies on Covington's self-worth theory (Covington, 1984, 2000). This research adopted a different approach by not measuring school performance as important for self-esteem directly but instead focused on self-esteem and school performance, emphasizing shame following performance failure as an indicator for performance impairment (Covington, 1984). These findings suggest that shame following performance failure can be understood as an indicator of negative effects on performance. To our knowledge, no one has previously linked shame following performance failure as a mediator or potential mediator in research aimed at understanding when basing self-esteem on performance results in negative effects on performance and health.

Considering the parallels in how basing self-esteem on performance and shame following performance failure are associated with negative outcomes, shame following performance failure appears to be a plausible mediator. Previous research on shame following performance failure has shown that higher levels of shame following performance failure are associated with increased levels of performance anxiety and stress/burnout symptoms. These associations have been reported in both educational and athletic contexts (e.g., Conroy, Willow, & Metzler, 2002; Correia, Rosado, & Serpa, 2016; Gustafsson, Sagar, & Stenling, 2017; Holic, 2018; Karimi & Fallah, 2021). This suggests a potential mechanism between basing self-esteem on performance in a specific context and shame following performance failure. In summary, basing self-esteem on performance correlates with both positive and negative consequences. Related to negative consequences, performance anxiety and stress/burnout stand out as particularly recurrent. In turn, levels of shame following performance failure also correlate with performance anxiety and symptoms of burnout. Parallels between basing self-esteem on performance and shame following performance failure suggest that individuals who strongly connect performance to their self-esteem may be at increased risk for negative consequences on performance and health due to experiencing shame following performance failure.

1.4. Present study

The current study builds upon numerous studies that have contributed to the cumulative research on when basing self-esteem on performance becomes problematic (Griffin et al., 2012; Lawrence et al., 2021; Lawrence & Gonzales, 2023; Liu & Huang, 2018; Wouters et al., 2016). We aim to contribute to this body of research by revisiting older studies related to Covington's self-worth theory (Covington, 1984). By integrating Covington's findings, we aim to explore whether shame following performance failure may function as a potential mediator in the associations between sport CSE, competitive anxiety, and symptoms of athlete burnout. Previous research shows that girls/women have performance more strongly connected to their self-worth and higher levels of shame following performance failure compared to boys/men (e.g., Blom, 2012; Correia, Rosado, Serpa, & Ferreira, 2017; Herrmann et al., 2019; Sagar & Jowett, 2012). To our knowledge, no prior studies have shown differences in basing self-esteem on performance between individual and team athletes. Regarding shame following performance failure, one study found a small difference (Sagar & Jowett, 2012), while two found no difference (Correia et al., 2017; Elison & Partridge, 2012). Based on these findings, we hypothesize that women will report higher levels of sport CSE and shame following performance failure compared to men. No specific hypothesis is formulated regarding differences between individual and team athletes, due to mixed results in previous research. In the current study, we included competitive anxiety and symptoms of athlete burnout as outcome variables because they have been frequently highlighted in previous research as particularly recurrent negative consequences of basing self-esteem on performance. We also include confounding variables to control for potential biases. This approach allows us to contribute to the cumulative body of research by examining the relevance of earlier findings in the current context. Finally, we hypothesize that the associations between sport CSE and

competitive anxiety and athlete burnout will be statistically consistent with shame following performance failure acting as a potential mediator.

2. Method

2.1. Participants and procedure

To determine the appropriate sample size for the study, we conducted a Monte Carlo power analysis for mediational paths (Schoemann, Boulton, & Short, 2023). We assumed that the relations among sport CSE—shame following performance failure, athlete burnout, and competitive anxiety—would range from $r = 0.23$ to 0.61 (SD ranging from 0.66 to 1.13). At least 168 participants were needed to reach a power of 0.80 and an alpha level of 0.05 .

A stratified randomized sample was drawn after conceptualizing the population. The criteria for what are considered an “elite athlete” is the same as those used by a regional elite sports center (Dartsch and Pihlblad, 2012). For individual athletes, this means they must have been part of the national team in the past two years (which may include the youth national team), be over 18 years old, and remain fully committed to their sport's development. For team athletes, the criteria are that individuals must have represented a team in one of the top two leagues (for major team sports in Sweden: basketball, football, handball, floorball, and ice hockey) or the top league (for minor team sports in Sweden: American football, rugby, and volleyball). The boundary between major and minor team sport was determined based on 100,000 activity sessions per year in the specific region (Skåne county in southern Sweden).

The number of elite athletes in elite sport environments was identified through special sports district associations in all sports with such associations in the current region. To be considered an elite sport environment within individual sports, at least three athletes in the sport club needed to meet the aforementioned criteria. The population of elite athletes in elite sport environments in the current region was 1100 individuals, of which, 12.4% were female individual athletes, 13.8% were male individual athletes, 35.6% were female team athletes, and 38.3% were male team athletes—all distributed among 99 elite sport environments. A stratified randomized sample selected the elite sport environments that were invited to participate in the study. Of the 22 contacted sports clubs, 16 (72.3%) participated. The first author (AF) visited each sports club for data collection. As not all athletes were present during the visits, follow-up visits (mostly for individual athletes) were conducted in some cases. Additionally, data collection via digital meetings was offered when attendance during the scheduled data collection was lower than 50%. Through these visits and follow-ups, the survey achieved a response rate of 70.4% ($n = 176$).

This cross-sectional survey study began with a brief introduction to the participants, where ethical considerations were explained, both orally and in writing. To promote reliable responses, we emphasized the anonymity of the survey, encouraged participants to answer honestly, and clarified that there were no right or wrong answers. The athletes volunteered by scanning a QR code provided by the researcher, completed the survey, and submitted their responses without providing any identifying information. As demographic variables, the participants reported their gender² and whether they were individual athletes or team athletes. Out of the total participants, 90 identified as female and 86 identified as male. Among those who chose to participate, all were over 18 years old, with 15% female individual athletes, 11% male individual athletes, 36% female team athletes, and 38% male team athletes. The survey took approximately 15–20 min to complete, with no monetary incentive for the participants. Five other questionnaires were given at the same time but will be analyzed separately in another article.

² Participants were asked to report their gender identity (1 = Female, 2 = Male, 3 = Non-binary, 4 = Prefer not to disclose).

Data, analysis code, and the codebook are available at this [link](#). The study was approved by the Swedish Ethical Review Authority (diary number 2023–04167–01).

2.2. Material

2.2.1. Sport contingent self-esteem

Sport CSE was measured by an adapted version of the performance-based self-esteem scale originally developed by Hallsten et al. (2005) in relation to work. Consistent with prior research, sport-CSE is conceptualized as a trait-like construct. Supporting this interpretation, previous studies using the same instrument in work-place context have demonstrated substantial temporal stability over one year (Hallsten et al., 2005). This scale consists of four items. The adapted version used in the present study changed the word *work* to *sport*: (1) “I think that I sometimes try to prove my worth through sport”; (2) “My self-esteem is far too dependent on my sport achievements”; (3) “At times, I have to be better than others to be good enough myself”; and (4) “Occasionally I feel obsessed to accomplish something of value through my sport”. Participants gave their own responses on a 5-point Likert scale ranging from 1 (fully disagree) to 5 (fully agree). The average score was computed, with higher scores indicating higher levels of sport CSE. The adapted version of the scale used in this study demonstrated good internal consistency ($\alpha = 0.82$). In a sample of respondents representative of the Swedish workforce ($n = 3387$), the work-related version of the scale demonstrated Cronbach's alphas (α) ranging from 0.85 (T1) to 0.87 (T2) (Richter, Schraml and Leineweber, 2015). A context-free version of the scale (e.g., “I think that I sometimes try to prove my worth by being competent”) that has been used in a sample of youth elite athletes in Sweden ($n = 178$) yielded Cronbach's alpha of 0.78 (Gustafsson, Martin, Isoard-Gautheur, Hassmén and Guillet-Descas, 2018).

2.2.2. Shame following performance failure

Shame following performance failure, which is considered a trait-like construct, was assessed by the Swedish version of the Fear of experiencing Shame and Embarrassment scale (FSE) (Gustafsson, Sagar and Stenling, 2017). The FSE scale is a subscale in the Performance Failure Appraisal Inventory (PFAI), which was originally developed by Conroy et al. (2002). The scale has been shown to be appropriate for elite athlete populations (Taylor, Eklund, & Arthur, 2023). The FSE subscale contains seven items (e.g., “When I am not succeeding, I am less valuable than when I succeed”). The items do not express the *fear* of shame following performance failure but rather the *experience* of shame following performance failure. Athletes were asked to read each item and rate it on a 5-point Likert scale ranging from 1 (Do not believe at all) to 5 (Believe 100% of the time). One item was dropped from the analyses due to technical error.³ The average score was calculated, with higher scores reflecting higher levels of shame following performance failure. In the current study, Cronbach's α was = 0.89 for this scale.

2.2.3. Competitive state anxiety in sport

Athletes' levels of state anxiety in relation to their most important athletic performances were assessed by the Swedish version of the Competitive State Anxiety Inventory-2R (CSAI-2R; Lundqvist and Hassmen, 2005). This scale includes 17 items divided into three dimensions: cognitive anxiety (e.g., “I am concerned that I may not do as well in this competition as I could”); somatic anxiety (e.g., “My heart is

³ Three types of post-analysis support the assumption that these six remaining items still capture shame following performance failure in a valid and reliable fashion. With Cronbach's alpha at 0.89 , factor analysis on the remaining items, and intra- and intercorrelations between items and other variables in the study. The item excluded from the study was “When I am failing, I believe that my doubters feel that they were right about me.” For more detailed information, contact the corresponding author.

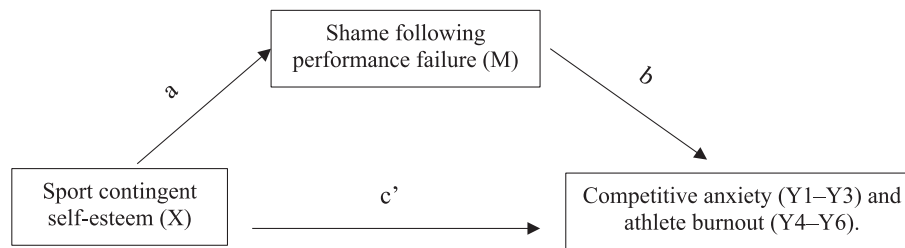


Fig. 1. The hypothesized model

Note. Competitive anxiety comprises three dimensions of competitive state anxiety in sport: cognitive anxiety (Y1), somatic anxiety (Y2), self-confidence⁴ (Y3); and athlete burnout comprise three dimensions: exhaustion (Y4), reduced accomplishment (Y5), and sport devaluation (Y6).

racings"); and self-confidence (e.g., "I'm confident about performing well"). Participants were asked to reflect on their preparation before their most important game/competition of this season, read each item, and then rate their feelings at that time on a 4-point Likert scale, where 1 indicates "definitely false" and 4 signifies "definitely true". Research indicates that athletes can reliably recall their anxiety levels during a competition when reflecting back (e.g., Hanin, 1997; Raglin & Turner, 1996; Wilson, Raglin, & Harger, 2000). The average score for each subscale was calculated, with higher scores reflecting higher levels of each dimension of state anxiety in relation to each athlete's most important athletic performance. The current study yielded Cronbach's alphas (α) of 0.84 (cognitive anxiety), 0.76 (somatic anxiety), and 0.86 (self-confidence).

2.2.4. Athlete burnout

Symptoms of athlete burnout, conceptualized as a state-like variable, was assessed by the Swedish version of the Athlete Burnout Questionnaire (Smith et al., 2010), which was originally developed by Raedeke and Smith (2001). This scale includes three dimensions: exhaustion (e.g., "I feel so tired from the training that I do not find the energy to do other things"); reduced sense of sport accomplishment (e.g., "No matter what I do in sport, I do not perform as well as I should"); and devaluation of sport participation (e.g., "I am not as interested in the sport as I used to be"). Each subscale includes five items, and the participants were asked to read each item and rate it on a 7-point Likert scale ranging from 1 (fully disagree) to 7 (fully agree). Data was transformed to a 1–5 point scale for analytical purposes, maintaining relative relationships between variables to facilitate comparisons with previous studies (IBM, 2020; Murat, 2021). The average score in each subscale was calculated, with higher scores reflecting higher levels of each dimension of athlete burnout. Two of the items related to reduced accomplishment require reverse scoring. The current study yielded Cronbach's alphas (α) of 0.83 (exhaustion), 0.81 (reduced accomplishment), and 0.82 (sport devaluation).

2.3. Data analysis

The initial analyses were conducted as preparation, ensuring that fundamental assumptions were met, followed by the main analyses for the study. The survey was constructed to exclude the possibility of missing data by requiring respondents to answer all questions before proceeding to the following section. In the initial phase of data analysis, we conducted a preliminary screening of the dataset to identify any instances of response bias. Specifically, we checked for patterns such as respondents consistently selecting the same answer (e.g., always choosing 4) and examined subscales for any unusually variable responses. All respondents were maintained for subsequent analysis. Descriptive statistics, correlational analyses, and independent *t*-tests were carried out using IBM SPSS Statistics, version 29. After confirming that the data satisfied the assumptions required for further analysis, statistical mediation and moderation analyses were both conducted using PROCESS macro v. 4.2 (Igartua & Hayes, 2021). Outcome variables were cognitive anxiety (Y1), somatic anxiety (Y2), self-confidence

(Y3), exhaustion (Y4), reduced accomplishment (Y5), and sport devaluation (Y6). We tested whether shame following performance failure (mediator, M) statistically accounted for the associations between sport CSE (predictor variable, X) and each outcome variable (PROCESS model 4, see Fig. 1). To clarify the findings, we conducted a moderation analysis with the same outcome variables and predictor variable to test whether shame following performance failure (W) statistically moderated the association. All the above variables (Y, X, M, and W) were treated as continuous. We assessed the statistical significance of our findings using the bias-corrected percentile Bootstrap approach, which involved 5000 resamples, and established a confidence interval (CI) at 95%. The effect was considered significant when the 95% CI excluded zero.

3. Results

3.1. Descriptive statistics

Table 1 presents the descriptive statistics (i.e., means and standard deviations) for the examined variables. On average, participants reported moderate to high levels of sport CSE (minimum: 1; maximum: 5; $M = 3.35$; $SD = 1.04$), indicating that athletes in the present study generally experience sport performance as important for their self-esteem. Regarding shame following performance failure, the average score for participants was moderately elevated, with a mean of $M = 2.96$ ($SD = 1.03$) on a scale from 1 to 5. This suggests that, overall, responses tended to lean slightly below the midpoint, indicating some hesitation or variability in belief. The standard deviation indicates a relatively wide spread in responses, suggesting that participants differed in how strongly they endorsed the statements. For the three subscales within CSAI-2R (cognitive anxiety, somatic anxiety, and self-confidence), all items were, on average, rated as "somewhat" to "moderately" when participants reflected on their preparation before their most important game/competition of the season. Finally, scores for "athlete burnout" ranged from low to moderate.

3.2. Bivariate associations

Table 1 also displays the correlations between the main study variables. Significant associations were found between sport CSE, shame following performance failure, and all the outcome variables, except for sport devaluation. The strength of the association between sport CSE and

⁴ In the development of a multidimensional instrument for assessing competitive anxiety in sport, previous research has supported the inclusion of both cognitive anxiety and self-confidence as subscales, in addition to somatic anxiety (e.g., Martens, Vealey, & Burton, 1990; Woodman & Hardy, 2003). Among these, self-confidence has been repeatedly tested as a distinct subscale, and evaluations of the instrument have shown that it is the component least affected by measurement error, further strengthening the argument for retaining self-confidence in the model (e.g., Cox, Martens, & Russel, 2003; Tsoarbatzoudis, Barkoukis, Sideridis, & Grouios, 2002).

Table 1
Variable means (standard deviations) and a correlation matrix.

Variable	M (SD)	1	2	3	4	5	6	7	8
1. SCSE	3.35 (1.04)	1	0.54**	0.42**	0.16*	-0.22**	0.27**	0.23**	0.10
2. FSE	2.96 (1.03)		1	0.71**	0.31**	-0.54**	0.35**	0.44**	0.18*
3. CogAnx	2.34 (0.78)			1	0.48**	-0.65**	0.33**	0.47**	0.19*
4. SomAnx	2.10 (0.61)				1	-0.30**	0.30**	0.13	0.12
5. SelfCon	2.74 (0.64)					1	-0.27**	-0.56**	-0.21**
6. Exh	2.25 (0.79)						1	0.44**	0.52**
7. RA	2.34 (0.81)							1	0.51**
8. SDe	2.08 (0.90)								1

Note. ** $p < .01$; * $p < .05$; SCSE = Sport Contingent Self-Esteem; FSE = Shame following performance failure; CogAnx = Cognitive Anxiety; SomAnx = Somatic Anxiety; SelfCon = Self-Confidence; Exh = Exhaustion; RA = Reduced Accomplishment; SDe = Sport Devaluation.

Table 2
Independent samples *t*-tests: Gender.

Variable	Female <i>n</i> = 90		Male <i>n</i> = 86		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
SCSE	3.56	1.00	3.14	1.04	2.76	0.006	0.42
FSE	3.27	0.99	2.63	0.97	4.36	<0.001	0.66

Note. SCSE = Sport Contingent Self-Esteem; FSE = Shame following performance failure; *M* = Mean; *SD* = Standard deviation; *t* = *t*-statistic; *p* = *p*-value, *d* = Cohen's *d*.

Table 3
Independent samples *t*-tests: Individual- versus team sport.

Variable	Individual athletes <i>n</i> = 44		Team athletes <i>n</i> = 132		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
SCSE	3.43	1.03	3.33	1.04	-0.554	0.580	-0.10
FSE	2.86	1.04	2.99	1.03	0.767	0.444	0.13

Note. SCSE = Sport Contingent Self-Esteem; FSE = Shame following performance failure; *M* = Mean; *SD* = Standard deviation; *t* = *t*-statistic; *p* = *p*-value, *d* = Cohen's *d*.

shame following performance failure was strong; in addition, it was moderate for cognitive anxiety and low for somatic anxiety, exhaustion, and reduced accomplishment (Cohen, 1988). Sport CSE had a low, negative correlation with self-confidence. Notably, shame following performance failure correlated significantly with all dimensions of the outcome variables, always in the same direction as sport CSE, but consistently with stronger correlations. The strength of the correlation for shame following performance failure was strong with cognitive anxiety; moderate with somatic anxiety, exhaustion, and reduced accomplishment; and low with sport devaluation. Shame following performance failure had a moderate, negative correlation with self-confidence. These findings provided initial indications of a potential mediating role of shame following performance failure, which was further explored in the subsequent statistical mediation analysis.

3.3. Assessment of confounding variables

Independent samples *t*-tests were conducted on the mean scores of sport CSE and FSE by gender and type of sport (individual vs. team) (see Tables 2 and 3). Our data revealed a significant difference between female and male participants in both sport CSE and FSE (Table 2), but no significant difference between team and individual athletes (Table 3). To account for potential confounding variables, we included gender as control variable in our statistical mediation and moderation analyses.

3.4. Testing for patterns statistically consistent with mediation

To test our hypotheses, we employed the PROCESS macro (Model 4)

to explore whether data were statistically consistent with a mediation pattern. As shown in Fig. 2, after controlling for gender, all outcome variables that were significantly correlated with sport CSE before the analysis were non-significantly correlated after adding shame following performance failure as a potential mediator. The analyses indicated a pattern consistent with mediation for the associations between sport CSE and cognitive anxiety ($b = 0.33$, 95% BCa CI [0.24, 0.42]), somatic anxiety ($b = 0.15$, 95% BCa CI [-0.06, 0.24]), self-confidence ($b = -0.27$, 95% BCa CI [-0.36, -0.18]), exhaustion ($b = 0.14$, 95% BCa CI [0.05, 0.23]), reduced accomplishment ($b = 0.22$, 95% BCa CI [0.14, 0.31]), and sport devaluation ($b = 0.10$, 95% BCa CI [0.01, 0.20]). Notably, even sport devaluation, which did not have a significant relationship with sport CSE in the bivariate analyses, follows the same general pattern, with correlations changing from $r = 0.10$ before the inclusion of shame following performance failure to $r = 0.01$ after its inclusion.

According to Preacher and Hayes (2004), a reduction in the association between X and Y after including M can be statistically consistent with partial mediation. In the present study, the observed pattern was consistent with partial to near complete mediation; however, these findings should not be interpreted causally given the cross-sectional design. Overall, the patterns of results were consistent with our hypotheses.

3.5. Testing for moderation effect

To further clarify the findings, we employed the PROCESS macro (Model 1) to determine whether shame following performance failure, had a moderating effect on the association between sport CSE regarding any of the significantly related outcome variables. As mentioned previously, gender was regarded as a control variable. Notably, no significant interaction effects were observed between sport CSE and shame following performance failure, regarding any of the significantly related outcome variables. In more detail, the interaction term between sport CSE and shame following performance failure, related to cognitive anxiety was not significant (Sport CSE x shame following performance failure → Cognitive Anxiety, $\beta = -0.01$, SE = 0.04, $t = -0.31$, $p = .757$). Similarly, the interaction term for somatic anxiety, self-confidence, exhaustion, and reduced accomplishment were also not significant. Specifically, for somatic anxiety: $\beta = -0.00$, SE = 0.04, $t = -0.07$, $p = .948$; for self-confidence: $\beta = 0.04$, SE = 0.04, $t = 1.15$, $p = .253$; for exhaustion: $\beta = -0.05$, SE = 0.05, $t = -0.89$, $p = .377$; reduced accomplishment: $\beta = -0.06$, SE = 0.05, $t = -1.30$, $p = .197$, and for sport devaluation: $\beta = -0.03$, SE = 0.06, $t = -0.43$, $p = .670$. These results indicate that the data were not consistent with a moderation pattern involving shame following performance failure. This strengthens the interpretation that shame following performance failure may play a more central role as a potential mediator, rather than a moderator, in the association between sport CSE and competitive anxiety and symptoms of athlete burnout. Table 4 presents the detailed results of the moderation analysis.

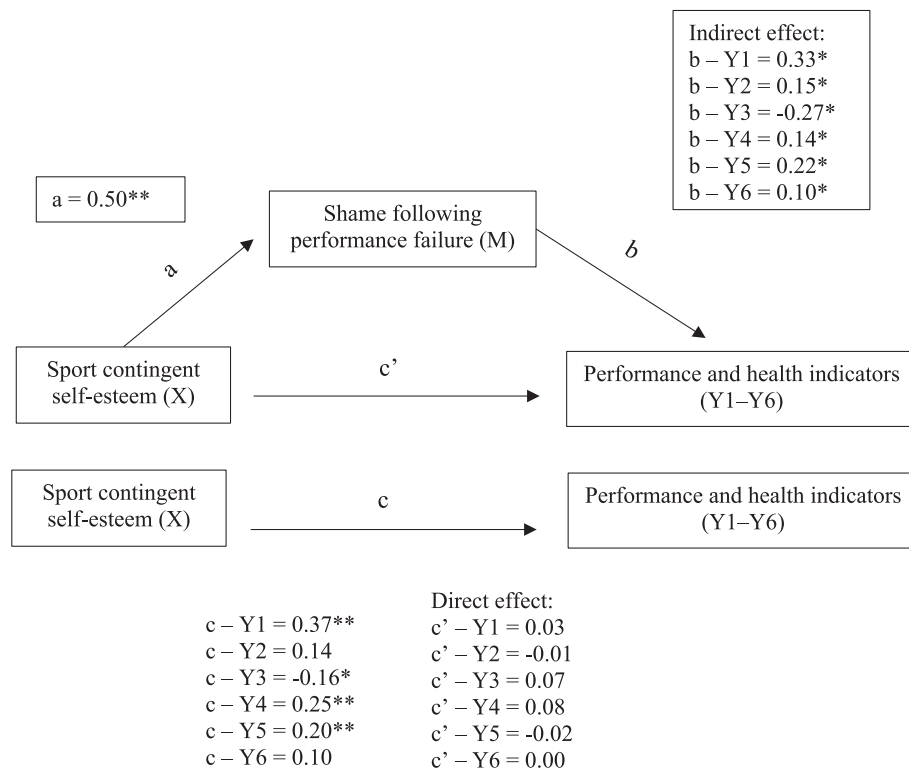


Fig. 2. The role of shame following performance failure in relation to sport CSE and indicators on performance and health (Y1–Y6) after controlling for gender. Note. $^{**}p < .01$; $^*p < .05$; Y1 = Cognitive anxiety; Y2 = Somatic anxiety; Y3 = Self-confidence; Y4 = Exhaustion; Y5 = Reduced accomplishment; Y6 = Sport devaluation.

Table 4
Moderation analysis results.

Outcome variable	B (interaction)	SE	t	P
Cognitive anxiety	-0.01	0.04	-0.31	0.757
Somatic anxiety	-0.00	0.04	-0.07	0.948
Self-confidence	0.04	0.04	1.15	0.253
Exhaustion	-0.05	0.05	-0.89	0.377
Reduced accomplishment	-0.06	0.05	-1.30	0.197
Sport devaluation	-0.03	0.06	-0.43	0.670

4. Discussion

This study aimed to explore whether the associations between sport CSE and competitive anxiety in sport and athlete burnout were statistically consistent with shame following performance failure acting as a potential mediator. The observed pattern in this cross-sectional study is consistent with the assumption that it is primarily when elite athletes' self-esteem is so tied to their sport performance that they experience shame following performance failure, that they are likely to encounter negative consequences, such as high levels of anxiety in important sport competitions and symptoms of athlete burnout. The findings suggest that basing self-esteem on sport performance in itself is not necessarily problematic, as long as the elite athlete do not experience shame following performance failure. However, these results should be interpreted with caution, as the cross-sectional design precludes causal conclusions, and the statistical mediation findings may be influenced by unmeasured variables not included in the study. In the following section, we discuss the findings and their implications in more detail.

The correlation analysis in the present study confirms patterns previously observed in sport context as well as in other contexts. The findings indicate a significant association between sport CSE and all subdomains regarding competitive anxiety, with a moderate correlation for cognitive anxiety, a low correlation for somatic anxiety, and a low,

negative correlation for self-confidence. Additionally, sport CSE shows low correlations with two out of three subdomains in the athlete burnout questionnaire (more specifically, exhaustion and reduced accomplishment). These results are consistent with previous research in several contexts (Gustafsson et al., 2018; Lavrijsen et al., 2023; Lawrence & Gonzales, 2023). All included subscales related to the outcome variables correlate significantly with shame following performance failure. Shame following performance failure demonstrates a strong correlation with cognitive anxiety, moderate correlations with somatic anxiety, and a moderate, negative correlation with self-confidence. For shame following performance failure, moderate correlations are also found with exhaustion and reduced accomplishment, while a low correlation is observed with sport devaluation. The correlation analysis also confirms previous research in school- and sport context regarding shame following performance failure (FSE) (e.g., Correia et al., 2016; Gustafsson et al., 2017; Holic, 2018; Karimi & Fallah, 2021). In this study, the correlation analyses were primarily undertaken to validate the fundamental assumptions necessary for conducting subsequent analyses.

Consistent with our hypothesis, our results were statistically consistent with a mediation pattern involving shame following performance failure in the associations between sport CSE and competitive anxiety and athlete burnout. To further clarify the findings, we also conducted a moderation analysis that revealed no significant interaction effects between sport CSE and shame following performance failure on the aforementioned outcome variables. Together, these results suggest that shame following performance failure may play a more central role as a potential mediator – rather than a moderator – in the associations between sport CSE and competitive anxiety and athlete burnout (Igartua & Hayes, 2021).

While the gender differences observed in the present study are consistent with prior research, the findings related to sport type (individual vs. team) reflect the more mixed results reported in earlier

studies. Consistent with prior research across different domains (e.g., Blom, 2012; Herrmann et al., 2019), the present findings revealed that women scored significantly higher than men on both sport CSE and shame following performance failure. Additionally, the present study supported previous research (Correia et al., 2017; Elison & Partridge, 2012) regarding the more mixed findings on potential differences between individual athletes and team sport athletes in relation to shame following performance failure, showing no significant difference. The same pattern was observed for sport CSE, with no significant difference between individual athletes and team sport athletes. In the present study, these analyses were primarily conducted to determine whether confounding variables should be included in the statistical moderation and mediation analyses.

Findings from the mediation and moderation analyses were consistent with shame following performance failure acting as a potential mediator between sport CSE and the outcome variables, which align well with previous research. Research by Covington (1984) focused on self-esteem and performance and highlighted shame as an indicator of when students experience performance impairments. The results of the present study also align with previous research that separates dimensions of academic CSE (Griffin et al., 2012; Liu & Huang, 2018; Wouters et al., 2016). With higher levels of negative contingencies, the focus is on avoiding negative outcomes (Vonk & Smit, 2012). Research related to shame following performance failure showed a correlation between higher levels of shame following performance failure and a focus on avoidance goals (Conroy & Elliot, 2004). We argue that Lawrence and colleagues' (Lawrence et al., 2021; Lawrence & Gonzales, 2023) statistical division of the concept describes the same phenomenon, which, in this study, is labeled with a different term. The difference is that when individuals with the general contingency perform poorly, they may experience shame following performance failure, whereas the positive contingency factor tends to increase self-esteem when they perform well, without necessarily decreasing significantly when they perform poorly. Together with the results from the present study, we suggest that all these studies assess the same phenomenon, although from slightly different perspectives.

To explore potential explanations for the observed patterns — statistically consistent with shame following performance failure acting as a potential mediator between sport CSE and the outcome variables—we turn to previous research that emphasizes that stable sources of self-esteem regardless of performance outcomes may buffer individuals with performance strongly connected to their self-worth, from negative consequences. Osborne and Jones (2011) emphasized that students who strongly connected school performance to their self-worth and experience positive consequences also have other important domains that contribute to their self-esteem. As mentioned, two individuals with a contingency of self-worth as equally important may react differently due to variations in their other contingencies of self-worth (Batchelder & Hagan, 2023; Schwinger et al., 2017). Having performance as important for self-esteem has also been shown to correlate with more unstable self-esteem (Kernis, 1993). In contrast, self-esteem based on how one is as a person has generally been shown to contribute to a more stable self-esteem (Kernis & Goldman, 2006). Athletes with a relationship to God characterized by comfort during failures and support during challenges experience less shame following performance failure and less competitive anxiety, as demonstrated by Houlberg and Upenieks and colleagues (Houlberg et al., 2017; Upenieks et al., 2024). They explain this by suggesting that such a relationship with God can provide a source to self-esteem independent of performance. These diverse approaches to bad performance and setbacks potentially offer explanatory value; a stable base of self-esteem regardless of performance outcomes, may buffer individuals with performance strongly connected to their self-worth, from negative consequences. We propose that if the findings in the present study can be replicated in other studies, the conclusion would be that there is no specific threshold related to basing self-esteem on performance; instead, it is the combination of basing self-esteem on

performance and level of shame following performance failure, that matters.

To what extent are the findings generalizable to other settings? Our hypothesis is that similar patterns may be observed across different contexts and cultures. However, how strongly individuals base their self-esteem on performance, and the levels of shame following performance failure may vary depending on the specific environments in which these variables are present. For example, norms and values influence what individuals base their self-esteem on (Crocker & Wolfe, 2001). Young athletes who perform well early on often receive significant attention, praise, and appreciation for their achievements (Douglas & Carless, 2009). If these expressions of approval come from individuals who the athlete values relationally, then this could foster the development of a sport CSE. In elite sport, performance is highly valued (Carless & Douglas, 2013). Athletes who excel often gain status (Eys, Evans, & Benson, 2020), further emphasizing performance as a contingency of self-worth. Data from the current study showed that the elite athletes, on average, scored on similar levels on sport CSE compared to when the same measurement instrument has been used in workplace context (Richter et al., 2015; Varghese et al., 2023). We elaborate further on factors that may influence levels of performance as important for self-esteem and shame following performance failure in the section on limitations and future research.

4.1. Limitations and future research

Most notably, this study is, to our knowledge, the first to explore the hypothesis that shame following performance failure may act as a potential mediator between sport CSE and competitive anxiety and symptoms of athlete burnout, and to report findings statistically consistent with this possibility. However, the present study does have limitations. Firstly, due to its cross-sectional design, the measurements were taken at a single point in time. Longitudinal studies would provide a more comprehensive perspective and a better understanding of the underlying nature of the relationships between variables. In addition, Maxwell and Cole (2007) argue that longitudinal data is particularly relevant for mediation analysis. However, their article focuses on other statistical methods for mediation analysis. In the current study, we used a modern mediation analysis technique—the percentile bootstrap confidence interval, as recommended by Igartua and Hayes (2021)—which allows for robust analysis, even with cross-sectional data. Nevertheless, longitudinal data is preferable, along with theoretical argumentation and a proper study design (Igartua & Hayes, 2021). To further strengthen mediation analysis, Bullock and Green (2021) advocate the use of experimental design where potential mediators are manipulated to identify the ‘true mediator.’ Therefore, aside from longitudinal data, we suggest that future studies consider evaluating interventions aimed at influencing shame following performance failure and examining potential effects on outcome variables. Despite the limitations due to its cross-sectional design, all significant variables followed the same observed pattern—statistically consistent with partial to near-complete mediation—which we view as a strength of the present study.

Another limitation of the current study lies in the use of self-report measures. Such measures are vulnerable to social desirability bias and recall biases (Gross, Wolanin, Pess, & Hong, 2017). As all data were collected through self-report, common method bias cannot be fully excluded, although the use of validated instruments, anonymity assurances, and varied scale formats helped reduce this risk. Future studies could consider incorporating more objective measures, such as physiological indicators of stress levels. For example, cardiovascular reactivity (e.g., heart rate variability) and cortisol levels in the blood could be measured (Moore, Isoard-Gauthier, & Gustafsson, 2024). These objective measures could be collected in conjunction with competitions or experimental settings where individuals are exposed to failure. This approach would complement the self-reported data commonly used in psychological research and provide a more comprehensive

understanding of stress responses.

In the present study, shame following performance failure is highlighted as a potential key factor for understanding when and under which circumstances basing self-esteem on performance becomes problematic. Research distinguishing between shame and guilt (e.g., Tangney, 1995; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996) suggests that shame reflects negative evaluations of the entire self, whereas guilt instead reflects negative evaluations of a specific behavior or failure (apart from the entire self). Empirical findings (e.g., Tangney, 1995; Tangney et al., 1996) show that shame is associated with a range of maladaptive outcomes on behavior, whereas guilt has been linked to more constructive ways of managing the situation that gave rise to guilt, particularly in studies where guilt has been clearly differentiated from shame. In the current study, only shame following performance failure was assessed. Future research could benefit from integrating these lines of research by examining whether the distinction between shame and guilt also represents an important factor in understanding when and under which circumstances basing self-esteem on performance is associated with adaptive and maladaptive consequences.

Could similar patterns—consistent with shame following performance failure acting as a potential mediator—also emerge for other negative outcomes previously linked to strongly connecting self-esteem to performance? Our study explored performance anxiety and athlete burnout as consequences of basing self-esteem on performance, while prior research has identified additional ones, for example, self-handicapping (Niiya, Brook, & Crocker, 2010), introjected motivation (Kuykendall et al., 2019; van der Kaap-Deeder et al., 2016), and depression (e.g., Chen-Bouck & Patterson, 2016; Schöne et al., 2015). If there are associations between shame following performance failure and these variables, it might be worth considering that shame following performance failure could play a role in the associations between basing self-esteem on performance and these variables. This could also represent a potential way forward for future research.

Beyond potential mediating mechanisms, it may also be important to consider broader constellations of factors that influence when and under what circumstances basing self-esteem on performance becomes problematic. A promising direction for future research would be to examine a model similar to that of Chen, Gully, Whiteman, and Kilcullen (2000), incorporating a range of variables considered potentially relevant for predicting outcomes. Such a model could then be empirically tested to identify which specification provides the best fit to the data and to determine which variables exert the strongest influence. Based on previous research, relevant factors may include, for example, learning from failure goals, introjected and intrinsic forms of motivation, self-efficacy, trait self-esteem, motivational climate, and conditional regard (Fabra, Castillo, González-García, Duda, & Balaguer, 2021; Lawrence & Crocker, 2009; Matthews, 2014; Niiya & Crocker, 2015; Otterpohl, Steffgen, Steinmeier-Pelster, Brenning, & Soenens, 2020; Park, Crocker, & Kiefer, 2007; van der Kaap-Deeder et al., 2016).

In addition, we suggest that future studies replicate our findings in other types of populations. Although this study used a stratified randomized sampling method, the sample consists of elite athletes from different elite sport environments in the same region in the same country. When norms and values influence what individuals base their self-esteem on, these effects may occur at different levels—e.g., norms in society, values at group-level (e.g. home, school, work), and values and preferences of significant others (Batchelder & Hagan, 2023). At the societal level, an example of a variable that may affect the results in the present study is relational mobility. Relational mobility represents a general pattern in society regarding individuals' opportunities to form new relationships or end old ones. Relational mobility has been shown to be a factor that influences levels of shame (Landers & Sznycer, 2022). Individuals in countries with low relational mobility generally experience higher levels of shame (Sznycer et al., 2012). Previous research has shown that Sweden generally exhibits above-average levels of relational mobility (z-score of 0.17), comparable to the USA, in which 39 societies

were compared (Thomson et al., 2018). Regarding constraints to generalizability, a socioecological factor such as relational mobility could influence the results (Huang, de Almeida, Uchida, & Oishi, 2025). In relation to group level factors that may affect the results in the present study, a meta-analysis (Kun, Takacs, Richman, Griffiths, & Demetrovics, 2020) that examined the role of individual factors in the development of workholism—a negative consequence of high work-CSE in workplace contexts—emphasized that individual factors are only one part of the equation. Kun et al. (2020) encouraged future studies to explore how individual and group level factors interact in the development of such negative outcomes. We suggest that this approach could also be applied to the study of other negative consequences and in different contexts. For example, task-oriented- and caring climate are group-level factors in sport context that have been linked to lower levels of shame (Fontana & Fry, 2017; Hogue, Fry, Fry, & Pressman, 2013; Hogue, Fry, & Iwasaki, 2019). Lastly, in relation to values and preferences of significant others, research emphasize that contingencies of self-worth develop through interactions with individuals whom the person values highly in relational terms (Horberg & Chen, 2010; vanDellen et al., 2009; vanDellen et al., 2011). Therefore, we suggest that understanding these interactions with significant others is crucial to further research and practical implications arising from these findings. In summary, future research could benefit from examining how these multi-level factors interact to shape outcomes related to basing self-esteem on performance, thereby enhancing our understanding of generalizability across cultural contexts.

4.2. Practical implications

Despite the limitations mentioned above, we suggest a few potential implications of the findings in the present study. Lawrence et al. (2021) argue that a drawback of their statistical division is its difficulty in providing practical recommendations. In contrast, a potential strength of the present study is that, if these observed patterns are replicated in longitudinal or experimental designs, they could provide a clearer basis for concrete practical recommendations. First, shame following performance failure can be observed. Shame is universal, as the body language related to shame is the same all over the world; for example, people who are blind from birth express shame the same as sighted people (Tracy & Matsumoto, 2008). This makes it possible for people around an individual to monitor shame following performance failure and use it as an indicator that the person might benefit from making adjustments to maximize the positive outcomes of basing self-esteem on performance. Recognizing signals related to shame following performance failure could help in making timely adjustments, thereby enhancing the benefits and reducing the drawbacks for individuals with this high-achiever profile. Second, it is particularly important in applied work to focus on individuals who hold high relational value and are significant to the individual (Horberg & Chen, 2010; vanDellen et al., 2011). Building on previous findings related to shame, shame following performance failure, and contingencies of self-worth, future research could explore the practical relevance of strategies such as ensuring that significant individuals (e.g., coaches/teachers, parents, friends) are aware of how they express themselves after performance failure. Avoiding responses that foster a fear of failure and instead viewing failure as part of the learning process (Bartholomew et al., 2018). Another potential practical implication is that these significant individuals also act in ways that maintain the individual's experience of high relational value, even during periods of underperformance (Landers & Sznycer, 2022). In summary, there is potential to offer practitioners specific recommendations, but future research will need to determine whether these suggestions are empirically well-founded and therefore suitable for practical application.

5. Conclusions

In summary, the findings in the current study were statistically consistent with shame following performance failure functioning as a potential mediator between sport CSE and both competitive anxiety in sport and symptoms of athlete burnout among elite athletes. Despite the study's limitations, these findings may offer an important step toward a better understanding of when, and under what circumstances, basing self-esteem on performance leads to negative outcomes. Further developing this knowledge could be essential when providing improved assistance to individuals whose performance is strongly connected to their self-worth, when working to maximize the positive consequences of this high achiever profile in the future.

CRedit authorship contribution statement

Anna Funke: Writing – review & editing, Writing – original draft, Visualization, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Henrik Gustafsson:** Writing – review & editing, Validation, Supervision, Methodology, Conceptualization.

Consent to participate

This study was approved by the Swedish Ethical Review Authority (diary number 2023–04167–01) on 08-29-2023. Participant consent information was also approved. The athletes volunteered for the survey, completed it and gave their consent to participate by choosing to submit their anonymous responses. The information regarding consent to participate was communicated both in writing and verbally.

Ethical considerations

The study was approved by the Swedish Ethical Review Authority with diary number 2023–04167–01 on 08-29-2023.

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Declaration of competing interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Data availability

The data, analysis code, and codebook necessary to reproduce the results are available at this [link](#).

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Glossary

- Academic CSE:** School performance is important for self-esteem
- Avoidance goals:** Goals aimed at preventing undesired outcomes
- Contingencies of self-worth:** “Domains in which self-worth is invested” (Crocker & Park, 2004, p. 3)
- Self-esteem:** How an individual values themselves
- Self-worth:** As is common in previous research, we use the terms self-esteem and self-worth interchangeably (e.g. Herrmann et al., 2019)
- Shame:** Shame is considered the opposite of pride (Bagozzi et al., 2018). Shame involves negative feelings about the self as a person, and it is characterized by wanting to hide and escape (Tracy & Robins, 2004)
- Sport CSE:** Sport performance is important for self-esteem
- State self-esteem:** Level of self-esteem in the moment
- Relational value:** Leary define relational value as “the degree to which other people regard their relationship with a person as important, valuable, or close” (Leary, 2020, p. 128)
- Relational mobility:** Relational mobility at the individual level refers to a person’s perception of how easy or difficult it is to form new relationships or end old ones (Landers & Sznycer, 2022; Yuki et al., 2007)
- Work CSE:** Work performance is important for self-esteem