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Does Resilience Protect Against Burnout? Psychometric Validation of Burnout and Resilience Measures and Their Interplay in Elite Athletes

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Abstract

Burnout and resilience are increasingly recognized as key factors influencing athlete performance in high achievement sport. However, there is a lack of validated instruments in the Latvian context to assess these constructs. The aim of this study was twofold: (1) to evaluate the psychometric properties of the Athlete Burnout Questionnaire (ABQ) and the Resilience Assessment Scale (RAS) in a sample of elite Latvian athletes; and (2) to examine the relationship between resilience and burnout dimensions. A total of 130 elite athletes participated in the study. The ABQ and RAS were translated and culturally adapted into Latvian using a multi-step procedure, followed by psychometric evaluation. Pearson correlation was used to assess relationships between burnout and resilience dimensions. The ABQ demonstrated a reliable three-factor structure, while the RAS yielded a modified, culturally relevant four-factor model. Both instruments showed acceptable internal consistency. However, no statistically significant correlations were found between resilience and burnout dimensions, indicating that resilience may not function as a direct protective factor in this sample. Strong intercorrelations among resilience subscales supported its multidimensional nature. The findings provide validated Latvian-language tools for sport psychology research and suggest that burnout in elite athletes may be influenced more by environmental than individual psychological factors.

Keywords: athlete burnout, resilience, psychometric validation, elite athletes, Latvian adaptation

Introduction

In high-performance sports, the intense training and competition-related stress experienced by athletes on a daily basis can lead to athlete burnout, which manifests as a range of negative psychological and physical symptoms (Cai et al., 2025). Burnout in sport is typically characterized by three dimensions: emotional and physical exhaustion, a reduced sense of accomplishment, and devaluation of sport involvement (Yang et al., 2024). The concept of burnout in sport is grounded in the work of Raedeke and Smith (2001), who developed the Athlete Burnout Questionnaire (ABQ), a 15-item instrument designed to assess these three dimensions of burnout in athletes (Yang et al., 2024). The ABQ has since become the most widely used instrument for assessing athlete burnout and is regarded as the "gold standard" in this field of research (Grugan et al., 2024; Gustafsson et al., 2014). Empirical findings across multiple countries support the three-factor structure of the ABQ and emphasize its cultural adaptability (Markati et al., 2023; Liu et al., 2022). For example, the Chinese version of the ABQ (ABQ-C) demonstrated a valid psychometric structure in a sample of Chinese athletes, with subscale Cronbach's alpha coefficients ranging from 0.71 to 0.86 and an overall alpha of 0.88 (Yang et al., 2024). Successful adaptations have also been made in other languages, including Spanish, French, and Greek, confirming the ABQ's psychometric stability across diverse linguistic and cultural contexts (Markati et al., 2023). In a large-scale study involving 914 athletes, the three-factor model was confirmed, and no statistically significant differences were observed in burnout levels based on gender, age, or sport type (individual vs. team) (Grugan et al., 2024). Overall, the literature confirms that ABQ is a valid and reliable tool for diagnosing burnout in elite athletes and has broad international applicability in both research and applied sport psychology.

In parallel with the study of burnout, there has been increasing interest in resilience within modern sport psychology. Resilience reflects an individual's ability to successfully cope with stress and recover from adversity. Particularly in elite sport, resilience is viewed as a critical psychological resource that enables athletes to navigate extreme challenges and may serve as a protective buffer against burnout (Cai et al., 2025). More resilient athletes tend to perceive stressors as motivational challenges rather than threats and are therefore less likely to experience burnout symptoms (Levillain et al., 2024; Konaszewski et al., 2021). Research has conceptualized resilience as a protective factor that enables athletes to implement more effective coping strategies, thereby promoting balance between the demands of the sporting environment and the athlete's internal psychological resources (Blanco-García et al., 2021). One widely used instrument in this area is the Resiliency Assessment Scale (RAS), which conceptualizes resilience as a multidimensional personality trait. The RAS comprises 25 items across five dimensions and has been used extensively in studies on resilience in both general and sport-specific populations (Piotrowski et al., 2021; Rawat et al., 2023; Wojczyk et al., 2024).

Theoretical and empirical findings indicate a close relationship between resilience and burnout in athletes. Resilient individuals are more likely to interpret high-pressure situations as challenges rather than threats, thereby maintaining engagement and reducing

the likelihood of chronic stress accumulation that can lead to burnout (Lin et al., 2021). Review studies further emphasize that enhancing resilience, particularly when combined with social support and recovery strategies, can be an effective means of preventing burnout in athletes (Cai et al., 2025).

In light of the above, both the ABQ and the RAS represent important diagnostic instruments in sport psychology, each with a strong theoretical foundation and demonstrated practical utility. **The aim of this study was twofold:** First, to examine the psychometric properties of the Resiliency Assessment Scale (RAS) and the Athlete Burnout Questionnaire (ABQ) in a sample of elite Latvian athletes. Second, to explore the relationship between resilience and athlete burnout, with the goal of determining whether resilience serves as a protective factor against burnout in high-performance sport.

Materials and Methods

Participants

This study involved a sample of 130 elite athletes aged 19–30 years (M = 22.59; SD = 3.76), including both female (n = 62; 47.7 %) and male (n = 68; 52.3 %) participants. The athletes had an average of M = 10.79 (SD = 5.72) years of experience in competitive sports and reported an average weekly training load of M = 5.88 (SD = 1.89) training sessions. Participants represented a variety of sports, including both team and individual disciplines ensuring diversity in sport type. All participants were currently active in national or international level competitions. Inclusion criteria required participants to be aged 18 or older and engaged in competitive training for a minimum of five years. No exclusion criteria were applied based on sport type or gender to ensure representation of the broader elite athlete population.

Measures

This study utilized the Athlete Burnout Questionnaire (ABQ) (Raedeke, Smith, 2001) and the Resiliency Assessment Scale (RAS) (Ogińska-Bulik, Juczyński, 2008). In addition to these questionnaires, data were collected on athletes' demographic characteristics, training load, and sports experience.

The ABQ assesses various aspects of athlete burnout that are specifically related to the sports context. The original English version consists of three subscales: (1) Emotional/Physical Exhaustion, (2) Reduced Sense of Accomplishment, and (3) Sport Devaluation, with each subscale comprising five items, for a total of 15 items. Respondents rate each item using a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). The ABQ is one of the most widely used instruments in current research for evaluating sport-specific burnout and has demonstrated strong psychometric properties across diverse populations, including good reliability, internal consistency, and cross-cultural validity. Its relevance has grown in light of increasing concern about athlete burnout and overload in high-performance settings.

The RAS measures resilience as a personality trait that facilitates coping with stress. The original version includes 25 items grouped into five subscales: (1) Perseverance and Determination in Action, (2) Openness to New Experiences and Sense of Humor, (3) Personal Competences for Coping and Tolerance of Negative Emotions, (4) Tolerance of Failures and Viewing Life as a Challenge, and (5) Optimistic Life Attitude and the Ability to Mobilize in Difficult Situations. Each subscale consists of five items, and responses are rated on a 5-point Likert scale ranging from 0 (definitely not) to 4 (definitely yes). Although the RAS was not specifically designed for sports contexts, it has shown robust reliability and validity in general populations, making it a valuable tool for assessing resilience among athletes.

To date, neither the ABQ nor the RAS had been previously adapted or validated for use in the Latvian elite sports context, underscoring the relevance of this study.

Translations of ABQ and RAS

To use the ABQ and RAS measurement tools with a Latvian elite athlete sample, a multi-step cultural and linguistic adaptation procedure was implemented (see Figure 1). After obtaining permission from the original instrument developers, the first step involved translating both questionnaires into Latvian. Two independent two translators were selected, each producing a separate version of the translation. These translations were then reviewed by a panel of experts to ensure conceptual and content accuracy. Once the translations were deemed consistent with the original meaning, a consensus version was created.

In the next steps, two different translators performed independent back-translations of the consensus Latvian version into English. These back-translations were compared to the original instruments to verify that the core meanings of the items were preserved. Following expert confirmation of the back-translation accuracy, face validity testing was conducted. Three athletes independently completed the Latvian versions of the ABQ and RAS and provided feedback regarding item meaning and understanding. Based on their responses, face validity was confirmed, and the final Latvian versions of the ABQ and RAS were established.

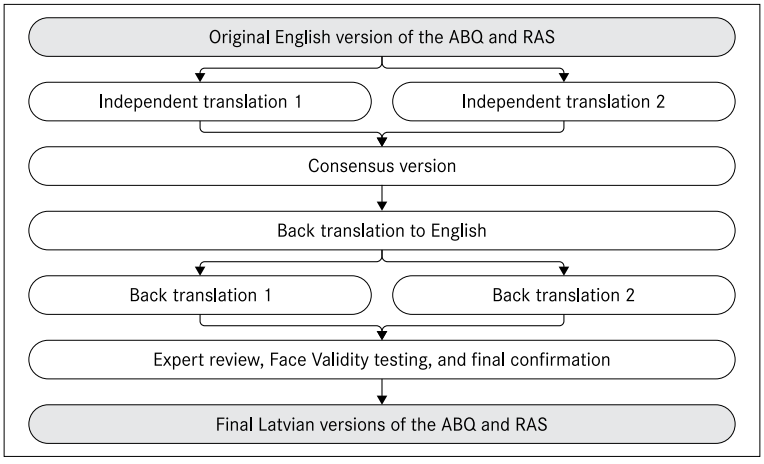

Figure 1 **Translation and validation processes of ABQ and RAS**

Research procedure and design

This quantitative, survey-based study was conducted through a web-based questionnaire administered using Microsoft Forms. The target population consisted of elite level athletes from various sport types. The questionnaires were distributed directly to the selected athletes.

In addition to the ABQ and the RAS, participants were asked to provide demographic and background information, including age, gender, sport type, number of training sessions per week, highest level of achievement in their sport, and years of sport experience. Participation in the study was entirely voluntary and anonymous. All participants were informed about the purpose of the research and the intended use of the collected data within the framework of this study. The research was conducted in accordance with established ethical guidelines, ensuring confidentiality, informed consent, and the right to withdraw at any time.

Statistical Analysis

The statistical methods in this study were chosen to address both primary research aims. To address the first aim, several statistical procedures were conducted to assess the validity and reliability of the Latvian adaptations of both instruments. The Kolmogorov-Smirnov test was used to evaluate the normality of the data distribution. To examine the factor structure, exploratory factor analysis with Varimax rotation was conducted for both ABQ and RAS. Item retention was based on factor loadings ≥ 0.40 (Peterson, 2000) and conceptual fit. The internal consistency of each factor was assessed using Cronbach's alpha. A coefficient of 0.6 or higher was considered acceptable, though values above 0.5 were also considered moderately acceptable in line with psychometric recommendations for exploratory research (Tan, 2009).

To address the second aim, Pearson's correlation analysis was conducted to identify statistically significant relationships between the subscales of ABQ and RAS, as well as between these psychological constructs and demographic indicators. In addition, multiple linear regression analyses were carried out to evaluate whether resilience factors significantly predicted levels of burnout dimensions. Analyses were conducted using IBM SPSS Statistics (29.0.0.0).

Results

Psychometric Evaluation of the ABQ and RAS in a Sample of Elite Latvian Athletes

One of the objectives of this study was to evaluate the psychometric properties of the Athlete Burnout Questionnaire (ABQ) and the Resiliency Assessment Scale (RAS) in a sample of elite Latvian athletes. The ABQ and RAS originally developed in English and had not previously been validated or used in the Latvian sports context. To examine the underlying factor structures, exploratory factor analyses (EFA) were conducted using Principal Component Analysis (PCA) with Varimax rotation for both questionnaires.

For the ABQ, all 15 translated items from the original English version were initially included to assess whether the original three-factor structure could be replicated. The analysis was

performed twice: first, by determining the number of factors based on eigenvalues greater than 1, and second, using parallel analysis. Examination of the rotated component matrix revealed substantial issues with the factor loadings. Several items either failed to load strongly on any single factor or showed notable cross-loading across multiple factors or had low factor loadings (below 0.40). For example, Q5 loaded highly on F3: Devaluation ($\lambda = 0.795$) but lacked theoretical coherence with the other items in that factor. Q4 showed a loading of 0.745 on F1: Reduce sense of accomplishment, but this did not conceptually align with the intended emotional exhaustion dimension. Item Q15 also loaded weakly and inconsistently. Items Q4, Q5, and Q15 were therefore excluded from further analysis due to insufficient psychometric performance and theoretical inconsistency. A revised PCA was then conducted on the remaining 12 items. Table 1 summarizes the original items retained and their original factor allocation. The new three-factor solution demonstrated a clearer structure, with all items loading above the 0.40 threshold on their respective factors and conceptually aligned with the original ABQ model. Internal consistency for each factor was acceptable, with Cronbach's alpha values of $\alpha = 0.601$ (F1: Reduce sense of accomplishment), $\alpha = 0.835$ (F2: Emotional/physical exhaustion), and $\alpha = 0.809$ (F3: Devaluation). This final factor structure supports the use of the ABQ as a valid and reliable instrument for assessing burnout symptoms in Latvian elite athletes, with minor adaptations to improve cultural relevance and conceptual clarity.

To evaluate the psychometric properties of the Resiliency Assessment Scale (RAS), a similar methodological procedure was applied. Initially, all 25 items from the original English version were translated into Latvian and included in a PCA with Varimax rotation, aiming to assess whether the original five-factor structure could be replicated. However, the initial PCA did not support the original scale model. Several items presented statistical and conceptual issues. For example, Q7, Q10, and Q11 exhibited cross-loadings, compromising the interpretability of the factors. Other items such as Q13, Q14, Q18, and Q22 had low factor loadings, while Q4, Q5, Q23, and Q25, although statistically borderline, were removed due to conceptual overlap or limited contribution to theoretical clarity. For instance, Q5 overlapped semantically with perseverance-related items and lacked added value. Q25, reflecting general optimism, was redundant when evaluated alongside similar but statistically stronger items. Following the removal of these 11 items, a second PCA was conducted with the remaining 14 items, resulting in a more coherent and interpretable four-factor model. F1: Perseverance and Determination in Action, comprised Q1, Q6, Q16, and Q21. F2: Openness to New Experiences and Sense of Humor, included Q2, Q12, and Q17. F3: Personal Competences for Coping and Tolerance of Negative Emotions, consisted of Q3, Q8, and Q18. Importantly, F4: Adaptive Optimism, integrated Q9, Q10, Q24, and Q25. These four items had previously been distributed across two separate subscales in the original RAS version ("Tolerance for Failure and Treating Life as a Challenge" and "Optimistic Attitude to Life and Ability to Mobilize"), but in the Latvian sample, they loaded onto a single factor, justifying their merger based on both theoretical and empirical grounds.

The final RAS structure exhibited strong and distinct loadings across all factors and demonstrated acceptable internal consistency (as shown in Table 1), supporting its application in Latvian elite sport settings.

Table 1

Item content, factor that the item belongs to, standardized factor loading (λ), uniqueness and internal consistency

Item	Content	Factor	M	SD	λ	Unique-ness	α
Athletes Burnout Questionnaire (ABQ)							
Q1	I'm accomplishing many worthwhile things in [sport]	F1: Reduce Sense of Accomplishment	3.14	1.06	0.64	0.59	0.60
Q7	I am not performing up to my ability in [sport]		3.05	1.14	0.56	0.69	
Q13	It seems that no matter what I do, I don't perform as well as I should		3.18	1.17	0.40	0.85	
Q14	I feel successful at [sport]		3.24	1.04	0.78	0.39	
Q2	I feel so tired from my training that I have trouble finding energy to do other things	F2: Emotional/ Physical Exhaustion	2.72	1.19	0.82	0.33	0.84
Q8	I feel "wiped out" from [sport]		2.26	1.18	0.63	0.6	
Q10	I feel physically worn out from [sport]		2.28	1.1	0.51	0.74	
Q12	I am exhausted by the mental and physical demands of [sport]		2.53	1.14	0.62	0.62	
Q3	The effort I spend in [sport] would be better spent doing other things	F3: Devaluation	2.26	1.22	0.45	0.8	0.81
Q6	I don't care as much about my [sport] performance as I used to		2.99	1.40	0.83	0.31	
Q9	I'm not into [sport] like I used to be		2.569	1.37	0.78	0.39	
Q11	I feel less concerned about being successful in [sport] than I used to		3.04	1.31	0.73	0.47	

Table continued on next page

Table 1 *(continued)*

The Resiliency Assessment Scale (RAS)							
Q1	I try to overcome problems regardless of how difficult they are.	F1: Perseverance and Determination in Action	4.02	0.85	0.72	0.48	0.70
Q6	I put focused effort into reaching my goals.		3.95	0.83	0.78	0.39	
Q16	When I have planned something, I do it from start to finish.		3.75	0.97	0.66	0.56	
Q21	If I have to do something, I usually do it right away.		2.93	1.09	0.61	0.63	
Q2	I can notice humor in the situations I encounter.	F2: Openness to New Experiences and Sense of Humor	3.86	0.84	0.68	0.54	0.61
Q12	I can find something to laugh about even in difficult situations.		3.86	0.99	0.53	0.72	
Q17	I can look at situations from many different points of view.		3.82	0.81	0.76	0.42	
Q3	I can adjust to every situation, even the most difficult ones.	F3: Personal Competences for Coping and Tolerance of Negative Emotions	3.78	0.86	0.68	0.54	0.57
Q8	I can focus and think clearly in stressful situations.		3.43	0.89	0.59	0.65	
Q18	In difficult situations, I can cope with unpleasant feelings.		3.48	0.89	0.74	0.45	
Q9	Generally speaking, going through difficult situations makes me stronger.	F4: Adaptive Optimism	3.92	0.89	0.52	0.73	0.70
Q10	Experiencing hardships motivates me for action.		3.64	0.92	0.82	0.33	
Q24	I think life is exciting, regardless of the obstacles and difficulties.		4.04	0.87	0.61	0.68	
Q25	I always have an optimistic approach to life, regardless of the situation.		3.66	0.92	0.73	0.48	

Notes: The applied rotation method is Varimax. The factor extraction was based on Principal Component Analysis (PCA). KMO 0.864 (ABQ) and 0.748 (RAS). Sampling adequacy was confirmed by KMO = 0.864 for the ABQ and KMO = 0.748 for the RAS. The number of factors was determined using Parallel Analysis, based on Factor Analysis with the Maximum Likelihood extraction method. M = Arithmetic Mean; SD = Standard Deviation; α = Cronbach's Alpha.

The three-factor model of the ABQ, based on the 12 retained items, and the four-factor model of the RAS, based on the 14 retained items, were evaluated for their fit with the respondents' sample data and their overall suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) measures indicated adequate sampling for both questionnaires (KMO = 0.864 for ABQ; KMO = 0.741 for RAS), and Bartlett's Test of Sphericity was statistically significant in both cases ($p < 0.001$), indicating that the correlation matrices diverged significantly from the identity matrix and were thus appropriate for factor extraction.

The extracted factors demonstrated satisfactory explanatory power. For the ABQ, the three components accounted for a cumulative 64.1% of the total variance (F1 = 42.7%, F2 = 12.5%, F3 = 8.9%). For the RAS, the four components accounted for a cumulative 58.4% of the total variance (F1 = 26.6%, F2 = 12.8%, F3 = 11.9%, F4 = 7.0%). These results suggest that the adapted ABQ and RAS demonstrate stable and interpretable factor structures in a sample of elite Latvian athletes, supporting their use in both research and applied psychological assessment contexts (see Table 2).

Table 2

Total variance explained

Extraction Sums of Sequred Loadings			
Factor	**Total**	**% of Variance**	**Cumalative %**
Athletes Burnout Questionnaire (ABQ)			
F1	5.122	42.7%	42.7%
F2	1.495	12.5%	55.1%
F3	1.072	8.9%	64.1%
The Resiliency Assessment Scale (RAS)			
F1	3.723	26.6%	26.6%
F2	1.799	12.8%	39.4%
F3	1.668	11.9%	51.4%
F4	0.985	7%	58.4%

Notes: Extraction Method: Principal Component Analysis

The final structure of the ABQ consists of a three-factor solution with 12 items. The first factor, Reduced Sense of Accomplishment, includes items Q1, Q7, Q13, and Q14 with factor loading ranged from 0.40 to 0.78. This factor assesses athletes' feelings of ineffectiveness and dissatisfaction with their performance in sport. For instance, Q1 and Q14 reflect the athlete's perception of achievement, while Q13 highlights negative self-evaluation. The item Q7 captures a perceived performance gap, which can undermine an athlete's sense of competence in their sport. Together, these items reveal how perceived underachievement may contribute to emotional distress and reduced engagement in sport. The items of Reduced Sense of Accomplishment scale closely correspond to the original conceptualization of this scale. The second factor, Emotional/Physical Exhaustion, comprises items Q2, Q8, Q10, and

Q12, with factor loadings ranging from 0.51 to 0.82. These items reflect symptoms of both mental and physical fatigue resulting from prolonged training and competitive pressure. Q2 and Q12 point to the depletion of energy and psychological resources. Q10 and Q8 emphasize physical strain. These symptoms are particularly relevant in elite sport contexts where athletes must balance intense physical workloads with emotional regulation. The third factor, Devaluation, includes Q3, Q6, Q9, and Q11, with factor loadings between 0.45 and 0.83. This factor captures a sense of emotional detachment and reduces concern about performance outcomes. Items such as Q6 and Q9 signal disengagement, while Q3 reflects a loss of purpose or meaning in sport participation. The emotional distancing described in these items is a key marker of burnout, especially in high-performance environments where personal identity and motivation are tightly linked to athletic success.

The developed version of the RAS within elite athletes' population is structured into a four-factor solution with 14 retained items. The first factor, Perseverance and Determination in Action, included Q1, Q6, Q16, and Q21, with loadings from 0.61 to 0.79. These items collectively describe the athlete's tendency to persist in goal pursuit despite obstacles. For example, Q1 and Q6 illustrate sustained effort and intrinsic motivation. Q16 and Q21 reflect consistent task completion and initiative, attributes vital for long-term development in elite sport. The second factor, Openness to New Experiences and Sense of Humor, comprises Q2, Q12, and Q17, with loadings from 0.53 to 0.76. These items assess the athlete's capacity to maintain flexibility and positivity under pressure. Q12 emphasizes coping through humor, while Q17 reflects the cognitive flexibility to consider multiple perspectives which is an important skill for adaptability in competitive settings. The third factor, Personal Competences for Coping and Tolerance of Negative Emotions, includes Q3, Q8, and Q18, with loadings ranging from 0.59 to 0.74. These items assess the athlete's emotional self-regulation and ability to manage stress effectively. The content of Q8 captures composure under pressure, while Q18 emphasizes the ability to cope with discomfort. These competencies are especially critical for maintaining performance during setbacks and high-pressure scenarios. The fourth factor, Adaptive Optimism, includes Q9, Q10, Q24, and Q25, with loadings between 0.52 and 0.82. Notably, this factor resulted from merging two original subscales "Tolerance for Failure and Treating Life as a Challenge" and "Optimistic Attitude to Life and Ability to Mobilize" due to their overlapping content and shared factor loadings in this sample. For example, Q10 and Q24 highlight how adversity can foster motivation and positive outlooks. Similarly, Q9 and Q25 reinforce the idea that athletes who expect success and perceive challenges as manageable are more likely to remain engaged and resilient. The merging of these scales may reflect cultural interpretations of optimism and coping within the Latvian elite athlete context, where resilience is tightly linked to forward-looking mindset and action orientation.

Associations Between Resilience and Athlete Burnout Constructs in Elite Athletes

Table 3 presents the Pearson's correlation coefficients between the three dimensions of athlete burnout (from the ABQ) and the four dimensions of resilience (from the RAS) among elite Latvian athletes. The aim of this analysis was to explore whether higher

resilience is associated with lower levels of athlete burnout, supporting the hypothesis that resilience may act as a psychological protective factor.

Table 3

Pearson's correlation matrix between ABQ and RAS scales

	Factor	1	2	3	4	5	6	7
1	Reduce Sense of Accomplishment	1						
2	Emotional/ Physical Exhaustion	0.507**	1					
3	Devaluation	0.316**	0.699**	1				
4	Perseverance and Determination in Action	0.013	−0.060	−0.044	1			
5	Openness to New Experiences and Sense of Humor	−0.083	−0.024	−0.050	0.153	1		
6	Personal Competences for Coping and Tolerance of Negative Emotions	−0.001	0.037	0.023	0.375**	0.386**	1	
7	Adaptive Optimism	−0.032	0.030	0.100	0.347**	0.358**	0.240**	1

Notes: ** Correlation is significant at the 0.01 level (2-tailed); * correlation is significant at the 0.05 level (2-tailed). No statistically significant correlations were found between any of the resilience or burnout factors and demographic variables, including age, gender, training volume, or years of sport experience.

According to the data obtained from the Pearson correlation matrix within the elite athlete population, there were no statistically significant correlations between the burnout and resilience constructs as measured by the ABQ and the RAS. The most substantial relationships were observed between the burnout dimensions themselves. The Emotional/Physical Exhaustion scale showed a strong and statistically significant positive correlation with both Reduced Sense of Accomplishment ($r = 0.507$; $p < 0.01$) and Devaluation ($r = 0.699$; $p < 0.01$), indicating that athletes experiencing emotional and physical fatigue are also more likely to feel ineffective and disengaged from their sport.

The resilience factor Personal Competences for Coping and Tolerance of Negative Emotions was positively and significantly correlated with Perseverance and Determination in Action ($r = 0.375$; $p < 0.01$), Openness to New Experiences and Sense of Humor ($r = 0.386$; $p < 0.01$), and Adaptive Optimism ($r = 0.240$; $p < 0.01$). These findings suggest that athletes who effectively manage stress and emotions in difficult situations also tend to be more

persistent, open-minded, and optimistic, which collectively strengthen their psychological resilience. Adaptive Optimism was significantly correlated with both Perseverance and Determination in Action ($r = 0.347$; $p < 0.01$) and Openness to New Experiences and Sense of Humor ($r = 0.358$; $p < 0.01$). This highlights its central role within the broader resilience construct. These interrelationships emphasize how maintaining a positive and constructive outlook is closely linked to other key resilience-building traits.

Interestingly, although significant correlations were found among the resilience factors themselves, none of the RAS dimensions were negatively associated with the ABQ burnout dimensions, contrary to theoretical expectations. This may suggest that cultural or sport-specific factors influence how resilience operates as a protective factor in this athlete population. No statistically significant correlations were found between any of the resilience or burnout factors and demographic variables, including age, gender, training volume, or years of sport experience. This indicates that the psychological constructs assessed appear to be relatively independent of these background characteristics in the elite athlete context.

As part of further analysis, multiple regression models were performed to examine whether the resilience factors could predict athlete burnout. However, none of the tested models reached statistical significance, and the resilience predictors did not meaningfully contribute to explaining variations in burnout dimensions.

Discussion

This study represents the first attempt to validate the Athlete Burnout Questionnaire (ABQ) and the Resilience Assessment Scale (RAS) in a sample of elite Latvian athletes. It addresses a significant gap in the field of sport psychology research. The psychometric evaluation indicated that it is required certain adaptations to effectively capture the constructs of burnout and resilience within the Latvian sports context.

The ABQ is one of the most widely used measurement tools for assessing burnout in athletes. Importantly, it represents one of the few psychometrically validated instruments specifically developed for measuring burnout in the sport context. Until now, Latvia lacked a fully adapted and validated tool explicitly designed for athlete burnout assessment. Therefore, the availability of a culturally appropriate and sport-specific burnout measure constitutes a valuable contribution to both research and applied sport psychology practice in Latvia. The ABQ focuses on sport-related exhaustion, reduced sense of accomplishment, and devaluation of sport involvement ensures its relevance in high-performance settings where athlete psychological state is very important (Raedeke, Smith, 2001).

In contrast, the RAS was not originally tailored to the sports environment but is grounded in a robust conceptual framework of resilience as a general psychological resource. Despite this, it captures several core components relevant to athlete functioning, including perseverance, coping with negative emotions, openness to new experiences, and adaptive optimism (Ogińska-Bulik, Juczyński, 2008). The present findings suggest that these constructions are meaningfully structured within a sport population.

Previous research has suggested a negative association between resilience and burnout in athletes (Wu et al., 2022; Santana et al., 2023). However, contrary to theoretical expectations, this study did not find statistically significant correlations between the dimensions of resilience and burnout. These findings emphasize the complexity of this relationship. In this sample, resilience traits were not associated with lower levels of burnout. This suggests that burnout may be more strongly driven by stressors, such as overtraining, lack of recovery time, and strained coach-athlete relationships, than by individual psychological traits (Brenner et al., 2024; Wasserman, 2024). It is also possible that elite athletes already possess high baseline levels of resilience due to the demands of high-performance sport. Consequently, variance in resilience may not significantly buffer against burnout within such a homogeneous and high-functioning population (Wu et al., 2022).

Despite this, the strong intercorrelations between resilience subscales observed in the study support the multidimensional nature of resilience. These findings are consistent with the conceptualization of resilience as a system of interacting traits and processes that may be expressed differently depending on the situational context (Masten, 2021; Gupta, McCarthy, 2022).

The findings of this study also highlight the importance of regularly evaluating and updating measurement instruments to reflect the evolving nature of modern sport environments. Athletes today face unique psychological and physical demands. Measurement tools or questionnaires developed decades ago may not fully capture the nuances of these contemporary stressors unless adapted to the current sport context (Cid et al., 2022). Without such revisions, there's a risk that outdated questionnaires may lead to misleading or incomplete insights. This can potentially limit usefulness in both research and applied practice. Ensuring that measurement tools are culturally and contextually appropriate enhances their validity and allows sport coaches and specialists to make more informed decisions when designing interventions or monitoring athletes' psychological state.

Limitation of the study

One of the primary limitations of this survey-based study is its reliance on self-reported data, which may introduce subjective biases and affect the accuracy of the responses. Athletes might overestimate or underestimate their psychological state, thereby limiting the objectivity of the findings.

Another limitation is the sample size. While the current sample of elite athletes provided valuable insights, a larger and more diverse sample would be necessary for a more robust psychometric validation of the ABQ and RAS. Expanding the sample would allow for more reliable factor structure testing and greater generalizability of the findings. This should also be noted that the constructions of burnout and resilience should be further examined across different sports disciplines and competition levels to capture the full complexity of these psychological phenomena.

Given these considerations, further research is essential to continue validating and refining the ABQ and RAS within the context of sport. Future studies should aim to replicate

these findings with larger samples and explore in greater depth the conceptual and contextual issues identified in this research.

Conclusions

This study aimed to evaluate the psychometric properties of the Athlete Burnout Questionnaire (ABQ) and the Resiliency Assessment Scale (RAS) in a sample of Latvian elite athletes and to explore the relationship between resilience and burnout within this population. The findings support the validity and reliability of developed Latvian language versions of both instruments for use in the Latvian high-performance sport context.

The ABQ retained its original three-factor structure (Emotional/Physical Exhaustion, Reduced Sense of Accomplishment, Devaluation), while the RAS demonstrated a culturally relevant four-factor model (Perseverance and Determination in Action, Openness to New Experiences and Sense of Humor, Personal Competences for Coping and Tolerance of Negative Emotions, Adaptive Optimism), both showing acceptable psychometric properties.

Contrary to expectations, no significant negative correlations were found between resilience (RAS) and burnout (ABQ) dimensions, suggesting a more complex relationship than previously assumed.

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