

Evidence of validity and reliability of the Greek version of the coaching issues survey

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Abstract:

Purpose: The current study examined the factorial structure and evaluated the construct validity and reliability of the Greek version of the Coaching Issues Survey (GrCIS) in two samples of Greek team sports coaches. **Method:** Data were collected via an online survey. Participants assessed their perceived stress on 20 coaching issues. The initial sample of the 244 coaches (gender: 80.7% men and 19.3% women, age: $M = 45.8$, $SD = 7.1$ years) was randomly split into two equal samples in order to perform exploratory and confirmatory factor analysis. The statistical conclusion validity of the factor solution was assessed through the evaluation of the convergent and discriminant validity of the GrCIS based on parameters estimates of the measurement model. Reliability of the scale was measured through Cronbach's α coefficient. **Results:** Using the maximum likelihood estimator and the oblique rotation of the axes, four factors were extracted that altogether concerned in 19 coaching issues: conflicts (five issues), time constraints (four issues), financial difficulties (three issues) and pressure to win (seven issues). Using the robust estimator of maximum likelihood mean adjusted chi square test statistic, the GrCIS four-factor model exhibited an acceptable fit to the sample data. The statistical conclusion validity was verified and the reliability of the factors was excellent. Common method variance did not seem to be a concern to the data. **Conclusion:** GrCIS demonstrated evidence for being a valid and reliable instrument for assessing team sports coaches stress level at 19 different coaching issues. Its use in the Greek research practice can be justified.

Key Words: team sports coaches, self-report questionnaire, exploratory factor analysis, confirmatory factor analysis, validation.

Introduction

The work environment of team sports coaches has been characterized as highly challenging, complex, and extremely stressful with corresponding psychosomatic effects on their health (Pearson et al., 2020; Kelley & Baghurst, 2009). Various researchers have reported that coaches' stress derives from the multiple roles or responsibilities coaches have to fulfil or carry out and from specific working conditions connected with the nature of the coaching profession (Didymus, 2017; Fletcher & Scott, 2010; Norris et al., 2017; Olusoga et al., 2009). Indeed, Norris et al.'s (2017) systematic review identified the stressors that coaches may experience during their careers in several factors, such as: (a) organizational (e.g., work overload, team management, finances), (b) competitive/game performance (e.g., athletes performance, injuries, personal performance), (c) contextual (e.g., program, job security), (d) interpersonal (e.g., relationships with athletes, expectations of others), and (e) intrapersonal factors (e.g., win-loss emotion management, locus of control).

According to the Conservation of Resources theory, stress is defined as an individual's reaction to a threatening environment in which the individual perceives the likelihood of losing resources, or the actual loss of resources, or even the imbalance between invested resources and expected profit (Hobfoll, 1989). This theory incorporates environmental, situational and cognitive perspectives on stress and defines stress as a result of resource loss. Because the risk of loss or defeat is inherently connected with the coaching environment, team sports coaches often experience high levels of stress (Olusoga et al., 2019). Detrimental consequences of stress concern relationship difficulties and psychosomatic problems, such as heart attacks, strokes, stomach problems, alcoholism, and increased morbidity (Olusoga et al., 2009; Pearson et al., 2020). Moreover, prolonged stress may lead to coaches' burnout, which in turn may lead to turnover intentions, and intentions may become actions. Quitting or leaving coaching profession is harmful for sports organizations, which require a stable and dedicated workforce (Kilo & Hassmén, 2016; Lerner et al., 2017; Olusoga & Kenttä, 2017; Raedeke, 2004).

Measuring stress in the workplace has been attempted in various ways (e.g., Foy et al., 2019; Lac et al., 2012). However, sport-specific measures, in contrary to general measures, have consistently been demonstrated to be more valid for athletic environments (Kelley & Baghurst, 2009). The Coaching Issues Survey – CIS is a coaching-specific measure that has been developed to assess perceived stress in the coaching field.

The CIS first appeared in Hunt's (1983) dissertation in an attempt to record the degree of perceived stress that specific situations might cause to sport coaches. The questionnaire consisted of 60 issues/items and

concerned at 14 different causes of stress: (1) interpersonal relations, (2) psychological pregame pressure, (3) pressure to win originating from outside the college/university, (4) pressure to win originating from the administration of the college/university, (5) internal pressure to win, (6) career development, (7) rewards, (8) locus of control, (9) factors affecting the game, (10) intrarole conflict, (11) budget, (12) recruiting, (13) support, and (14) team management (Hunt 1983).

Several years later, in Kelley's (1990) dissertation, the CIS was distributed for a pilot study to 14 dual-role teacher-coaches who worked at the college level in the U.S. Kelley (1990) removed 32 out of the 60 issues as they had a mean value of perceived stress of less than 2.5 (min = 0, max = 5). Moreover, four additional issues, were highlighted and therefore they were included in the questionnaire. Thus, a newly 32-issues instrument was created which was afterwards retested in a sample of 52 dual-role teacher-coaches. The Cronbach's *alpha* coefficient of .89 suggested that the scale exhibited good internal consistency. However, no factor analysis of the scale was performed and thus, the only indication of the scale's validity was its content validity. Eventually, Kelley and Baghurst (2009) examined the factorial structure of CIS and they came up with 30 issues and four dimensions: win-loss, time-role, program-success, athlete-concerns.

Kelley's (1990) instrument was adapted to the Greek coaching context by Apostolidis (2000). During the procedure of translation and adaptation, the original 32-issues scale was reduced to 20-issues since: (a) several issues did not conformed with the Greek sports legislation, (b) other issues concerned, exclusively, the dual-role of teacher-coach, and (c) some issues concerned, exclusively, the organizational structure of college championship in the U.S. (Apostolidis, 2000). As a result, 14 issues were deleted from Kelley's (1990) instrument, whereas two additional issues were further added as they were considered too important for the Greek coaching context. Eventually, the Greek version of the CIS (GrCIS) included 20 issues and evaluated four different topics related to: (a) conflicts, (b) time constraints, (c) financial difficulties, and (d) pressure to win (Apostolidis, 2000). However, the factorial structure of GrCIS was never validated. Since then, the GrCIS has been used in various researches as a one-factor model (e.g., Apostolidis, 2012; Karabatsos & Apostolidis, 2012). The Cronbach's *alpha* reliability coefficient for the one-factor model was at a quite high level (.78 - .90).

In the context of the above discussion, and recognizing the importance of having a valid instrument to measure coaches' perceived stress in the workplace, the aim of the present study was to investigate the factorial structure, as well as to verify the construct validity and reliability of the GrCIS. Greek researchers in the athletic psychology field should have the opportunity of selecting among a variety of valid and coaching-specific measures.

Material & methods

Participants

A total of 244 team sports coaches (gender: 80.7% men and 19.3% women, age: $M = 45.8$, $SD = 7.1$ years) participated in the present study. The whole sample was randomly split into two equal sub-samples in order to apply to each sample a different type of factor analysis. Regarding exploratory factor analysis (EFA), the sample size of $n_1 = 122$ would be acceptable as long as factors are well-determined and communalities are in a range of .5 or greater (MacCallum et al., 1999). Regarding confirmatory factor analysis (CFA), the sample size of $n_2 = 122$ would also be acceptable as long as univariate normality of the variables is met (Bagozzi & Yi, 2012). As Bagozzi and Yi (2012) mentioned, even with the low ratio of 3 or even 2 participants per freely estimated parameter, a model can be satisfactorily factor analyzed, since distributions normality is not violated. Difference tests for each issue of the two sub-samples were statistically non-significant ($t(242) < 1.97$, $p > .05$). Descriptive characteristics of the participants for each sample of the present study are presented in Table 1.

Table 1

Descriptive statistics for the two sub- samples (n_1 and $n_2 = 122$)

Variable	Category	Sample 1, $n_1 = 122$		Sample 2, $n_2 = 122$	
		$f(\%)$	$M(SD)$	$f(\%)$	$M(SD)$
Sport	Basketball	88 (72.1)		95 (77.9)	
	Volleyball	17 (13.9)		14 (11.5)	
	Handball	5 (4.1)		6 (4.9)	
	Football	9 (7.4)		6 (4.9)	
	Water polo	3 (5.5)		1 (0.8)	
Gender	Men	98 (80.3)		99 (81.1)	
	Women	24 (19.7)		23 (18.9)	
Age	≤ 39 years	18 (14.8)		27 (22.1)	
	40 – 49 years	44 (36.1)	46.4 (6.7 years)	35 (28.7)	45.2 (7.6 years)
	50 years $\geq$	60 (49.2)		60 (49.2)	
Work status	Full - time	38 (31.1)		30 (24.6)	
	Part - time	84 (68.9)		92 (75.4)	
Coaching experience			19.1 (6.7) years		15.2 (7.1 years)

Procedure/Instrument

A web survey was conducted between September and November 2021. Having institutional ethical approval and following a convenience sampling approach, team sports coaches were recruited via a number of different methods (e.g., social media network, e-mail invitations). The self-report questionnaire consisted of several demographic variables as well as the online version of the GrCIS (Apostolidis, 2000), which encompassed 20 items (e.g., “*Handling defeat*”, “*Not having time for myself*”) measured in a 5-point Likert-type scale from 1 (no stress) to 5 (extreme stress). Following Podsakoff et al.’s (2003) methodological guidelines for controlling for common method bias, participants’ anonymity was ensured to reduce social desirability and clear instructions were given to reduce cognitive demands. Regarding statistical procedure for detecting common method variance (CMV), Harman’s single factor test (Podsakoff & Organ, 1986) was applied after data collection. In this technique, all issues of the questionnaire were entered into an EFA and with the method of principal component analysis without rotation, four factors with eigenvalue greater than 1 emerged (Podsakoff et al., 2003). At the same time, the first factor had an explained variance of 46.26% (less than 50%). Although, detecting for CMV is a more complicated matter, it seemed that CMV was probably not a diffuse problem in the data (Baumgartner & Weijters, 2021; Kaltsonoudi et al., 2022).

Data analysis

Univariate outliers were evaluated through z-scores (< 3.29 standard deviations). Multivariate outliers were evaluated through Mahalanobis D distances of the cases ($< \text{critical } \chi^2, p < .001$). Multicollinearity was assessed with VIF indexes (< 3). Univariate normality was examined through z-values of skewness and kurtosis ($< |3|$) (Tabachnick & Fidell, 2019). For bivariate (pairwise homogeneity) and multivariate normality, the corresponding values of skewness and kurtosis should be statistically non-significant (p -values $> .05$) (Mardia, 1970). All statistical tests were two-tailed and the probability level was set to $\alpha = .05$.

Sample 1 was used to perform EFA in IBM SPSS 24.0. The maximum-likelihood estimator and the oblique rotation of the axes were used in order to test for the factorial structure of the scale. Community values for each item greater than .20 and item loadings on the factors greater than .40 were used as cutoff levels (Hair et al., 2018).

Sample 2 was used to confirm the structure of the scale as it derived from the previous procedure using the statistical program *Mplus7* (Muthén & Muthén, 1998-2012). The model that was assessed was based on a reflective model of four factors. However, an alternative one-factor model was also assessed in order to compare the fit of the two models. All CFAs were performed with the robust estimator of MLM (maximum likelihood mean adjusted chi square test statistic) (Satorra & Bentler, 1988) for multivariate non-normality and no missing values (Byrne, 2012). Model assessment was accomplished with the use of multiple goodness-of-fit indices including the chi-square test of model fit and the corrected ratio χ^2/df , the Comparative Fit Index (CFI) (Bentler, 1990), the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973), the Root Mean Square Error of Approximation (RMSEA) (Steiger, 1990), and the Standardized Root Mean Square Residual (SRMR) (Jöreskog & Sörbom, 1989). Non-significant chi-square test of model fit ($p > .05$), values of the ratio $\chi^2/df < 2$ and values of CFI and TLI $> .90$, whereas values of SRMR and RMSEA $< .08$ indicated good fit to the data (Byrne, 2012). The comparison of the hypothetical measurement models and post hoc analyses were done with the Satorra-Bentler scaled χ^2 difference test ($MLM\Delta\chi^2$) (Satorra & Bentler, 2010). Finally, the criteria of standardized residuals greater than 2.00 and modification indices greater than 10.00 were used to identify the localized areas of strain, the modification of the model and its redefinition (Brown, 2015; Byrne, 2012; Kline, 2016).

The assessment of the statistical conclusion validity of the factorial solution was done through the examination of the convergent and discriminant validity based on parameter estimates of the measurement model. Therefore, the convergent validity was examined through the factor loadings of the items and their statistical significance (factor loadings $\geq .50, p < .05$) (Hair et al., 2018), the scores of the average variance extracted for each factor (AVE $\geq .50$) (Fornell & Larcker, 1981), as well as the construct reliability ($\rho_c \geq .70$) (Fornell & Larcker, 1981; Raykov, 1997). The discriminant validity was examined using four criteria: (a) correlations between latent factors should be less than .90 (Kline, 2016), (b) the upper limit of the 95%CI of the correlations between the factors should be less than .90 [CICFA(.9)] (Rönkkö & Cho, 2022), (c) the Fornell-Larcker criterion, also known as AVE/SV, according to which the shared (common) variance (SV) between two factors should be less than the AVE values of both factors (Fornell & Larcker, 1981; Rönkkö & Cho, 2022), and (d) the heterotrait-monotrait2 (HTMT2) correlation ratio, which supports the discrimination of the factors for values less than .90 (Henseler et al., 2015). The reliability of the factors was assessed using Cronbach’s α coefficient ($\alpha > .70$) (Cronbach, 1951).

Results*Preliminary Data Analysis*

Prior to analysis, the 20 issues (items) of the GrCIS were examined through various IBM SPSS programs for accuracy of data entry and fit between their distributions and the assumptions of multivariate analysis. There were no missing values.

Sample 1: All issues had mean value greater than 2.5, except for one issue (CI5: “*Dealing with the media*”). It is worth to remember that Kelley (1990), in her attempt to construct an instrument for evaluating all issues that cause stress to coaches, had used a mean value of 2.5 as a cutoff point for accepting issues. Univariate normality was met since z-values of skewness and kurtosis were smaller than |3|. This argues for the use of the maximum likelihood (ML) estimator as a method of factor extraction at the EFA. Finally, tests for homogeneity of variance and multicollinearity ($VIF < 3$) did not reveal any problem among issues of the scale (Tabachnick & Fidell, 2019).

Sample 2: Univariate normality was met. However, the assumption of multivariate normality was violated (Mardia’s coefficients $< .001$). Univariate and multivariate outliers did not exist in the data (z-values < 3.29 and Mahalanobis distance $D < \text{critical } \chi^2$). Multicollinearity test did not reveal any problems ($VIF < 3$).

Exploratory Factor Analysis

EFA was performed through IBM SPSS_24 on 20 items of the GrCIS (Apostolidis, 2000) for a sample of 122 Greek team sports coaches. The Kaiser-Meyer-Olkin measure of sampling adequacy was excellent, indicating that factor analysis was good enough to commence ($KMO = .898$) and Bartlett’s test of sphericity suggested that there was substantial correlation in the data ($\chi^2 = 1804.793$, $p < .001$). With the maximum likelihood (ML) estimator for normal distributions and oblique rotation extraction method for correlated factors, four factors emerged. Four eigenvalues were greater than 1.00 and the cumulative variance extracted from the four factors was equal to 62.62%. Loadings of issues on factors and communalities are shown in Table 2. Issues are ordered by size of loading and grouped by factors to facilitate interpretation.

Loadings under .40 are replaced by zeros. Interpretive labels are suggested for each factor in the footnote. Community values, as seen in Table 2, tended to be high. Only one issue (CI5) had a very low communality value and consequently did not load on any factor. As a result, issue CI5 was excluded from the scale. Issues of the factors were conceptually coherent and correlations among factors ranged from .298 to .642. The reliability of the factors was excellent since coefficient Cronbach’s α ranged from .835 to .905. In sum, the four factors of the GrCIS for this sample of team sports coaches were: conflicts, time constraints, financial difficulties, and pressure to win.

Table 2

Factor loadings and communalities (h^2) for ML extraction and oblique rotation on the GrCIS

	Issue	F1	F2	F3	F4	h^2
CI1	Conflicts among my players.	.924	.00	.00	.00	.775
CI4	Conflicts between me and my players.	.766	.00	.00	.00	.826
CI8	Making decisions which are not popular with my players.	.670	.00	.00	.00	.708
CI7	Not knowing the criteria by which I will be judged	.580	.00	.00	.00	.609
CI16	Conflicts with team’s leadership.	.524	.00	.00	.00	.355
CI20	Not successfully fulfilling my responsibilities outside of my coaching duties.	.00	.883	.00	.00	.830
CI13	My career as a coach interfering with family and/or social life.	.00	.870	.00	.00	.846
CI15	Spending too much time at work every day.	.00	.692	.00	.00	.515
CI2	Not having time for myself.	.00	.503	.00	.00	.289
CI10	Not being able to hire adequate assistant coaches and support staff.	.00	.00	.775	.00	.830
CI6	Budget limitations hampering recruiting.	.00	.00	.736	.00	.585
CI3	Inadequate travel budget for contests with highly competitive teams.	.00	.00	.732	.00	.625
CI5	Dealing with the media.	.00	.00	.00	.00	.062
CI14	The expectation to win a theoretically difficult contest.	.00	.00	.00	.955	.934
CI19	Handling defeat.	.00	.00	.00	.951	.864
CI18	The expectation to win a contest in which my team and the opposing team are evenly matched.	.00	.00	.00	.806	.697
CI17	Inconsistent judgement calls during a contest.	.00	.00	.00	.571	.487
CI9	The expectation to win a contest in which my team is predicted to win by a close score.	.00	.00	.00	.545	.619
CI12	Placing pressure on myself to win.	.00	.00	.00	.499	.330
CI11	Injury to one of my starters or top players.	.00	.00	.00	.417	.737

Note. CI: Coaching Issue, Factor labels: F1: Conflicts, F2: Time Constraints, F3: Financial Difficulties, F4: Pressure to Win. Loadings less than .40 are shown as .00

Confirmatory Factor Analysis

CFA was performed through *Mplus7* on the 19 issues/items of the GrCIS (Apostolidis, 2000) for a sample of 122 Greek team sports coaches. Two models were examined: the four-factor model and an alternative one-factor model. As shown in Table 3, the Satorra-Bentler scaled chi square difference test was statistically significant ($MLM\chi^2_{[6]} = 405.908, p < .001$) indicating that the four-factor model was a better fitted model. Subsequently, in order to improve the fit of the four factor model, two correlated residual variances were freely estimated.

They were chosen because their modification indices were above 10.00. As shown in Table 2 and in Figure 1, the model with the two correlated residual variances had the best fit: $MLM\chi^2_{[144]} = 238.962, p < 0,001$, scaling correction factor = 1.0435, CFI = .943, TLI = .933, RMSEA = .074, RMSEA 90%CI = .057 – .090, SRMR = .058. Standardized factor loadings for the four-factor model, factor correlations, and residual variances are presented in Figure 1. The investigation for localized areas of strain showed that there were not any standardized residual larger than 2.00.

Based on parameters estimates, the examination of the convergent and discriminant validity verified the statistical conclusion validity of the results for the GrCIS scale (Table 3). All standardized factor loadings were larger than .50 ($p < .05$), AVE scores for each factor were above the cutoff point of .50, and construct reliability (ρ_c) coefficients were larger than .70.

Thus, convergent validity was verified revealing that the factors measure the corresponding concepts with excellent internal consistency. Additionally, discriminant validity, as shown in Table 3, was verified because: (a) factor correlations ranged from .435 to .789, (b) the upper limit of the 95% CIs of the factor correlations ranged from .584 to .867, (c) the Fornell-Larcker criterion was verified for all paired factors, and (d) the heterotrait-monotrait2 ratio of factor correlations ranged from .370 to .777. Finally, the reliability of the factors was excellent and Cronbach's α coefficients ranged from .845 to .928.

Table 2

Goodness-of-fit measures for all GrCIS models and Satorra-Bentler scaled chi square difference tests

Model	χ^2	df	χ^2/df	Scaling Correction Factor	p-value	CFI	TLI	RMSEA	SRMR
1 F	673.3	152	4.46	1.0443	< .000	.690	.651	.168	.104
4 Fs	293.1	146	2.01	1.0471	< .000	.912	.897	.091	.061
4 Fs with 1 CORR RES	252.5	145	1.74	1.0470	< .000	.936	.925	.078	.064
4 Fs with 2 CORR RES	238.9	144	1.66	1.0435	< .000	.943	.933	.074	.058
DIFFTESTS	$MLM\chi^2$	Δdf		<i>DiffTest</i> Scaling Correction	p-value				
1F vs 4 Fs	405.9	6	-	.9762	< .000	-	-	-	-
4 Fs vs 4 Fs with 1 CORR RES	40.04	1	-	1.0616	< .000	-	-	-	-
4 Fs with 1 CORR RES vs 4 Fs with 2 CORR RES	9.7	1	-	1.5510	.002	-	-	-	-

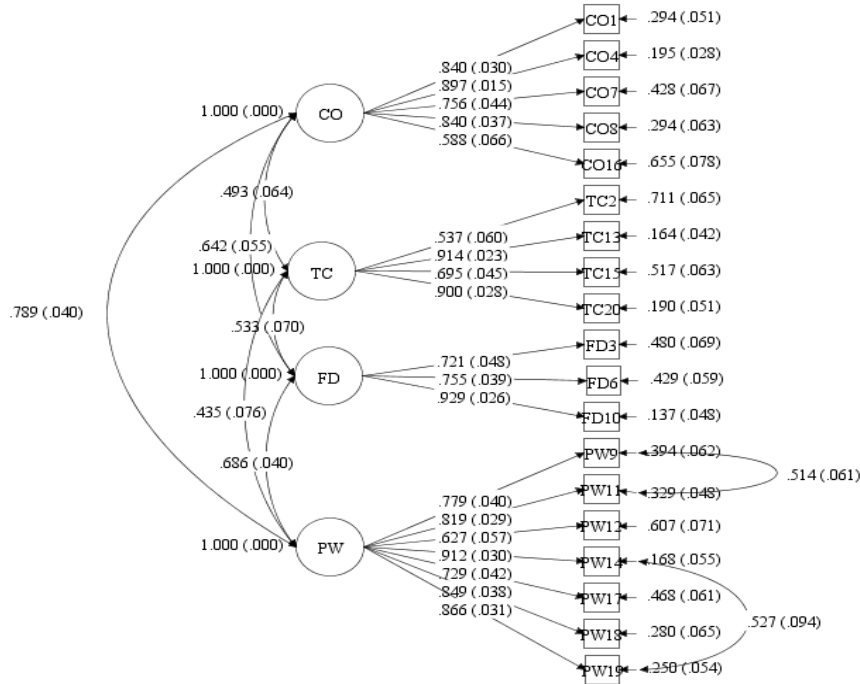
Note. F: Factor, CORR RES: correlated residuals, *df*: degrees of freedom, CFI: Comparative Fit Index, TLI: Tucker-Lewis Index, RMSEA: Root Mean Square Error of Approximation, SRMR: Standardized Root Mean Square Residual

Table 3

Reliability coefficients, convergent and discriminant validity for the GrCIS

Factor	α	ρ_c	AVE	Conflicts	Time Constraints	Financial Difficulties	Pressure to Win
Conflicts	.888	.892	.627	-	.493(.243) [.367-.619]	.642(.412) [.534-.751]	.789(.622) [.710-.867]
Time Constraints	.845	.854	.604	.434	-	.533(.284) [.397-.670]	.435(.189) [.285-.584]
Financial Difficulties	.846	.847	.651	.640	.476	-	.686(.470) [.607-.765]
Pressure to Win	.928	.926	.644	.777	.370	.696	-

Note. Numbers above diagonal represent correlations among latent factors, pairwise shared variance in parentheses and 90% CI of the correlations among factors in squared brackets. Numbers below diagonal represent heterotrait-monotrait2 ratio of correlations among factors.

Figure 1*Standardized factor loadings, factor correlations, and residual variances for the GrCIS*

Note. Co: Conflicts, TC: Time Constraints, FD: Financial Difficulties, PW: Pressure to Win

Discussion

The current study examined the psychometric properties of the Greek version of the CIS as it was translated by Apostolidis (2000) in a total sample of 244 team sports coaches. Specifically, the EFA's results indicated that a four-factor solution for the CIS represented an appropriate fit to the data in the first sample of the 122 team sports coaches. However, the initial 20-item scale was reduced to a 19-item scale.

More specific, the item that concerned with the stress deriving from the media did not load on any factor, and thus, it was excluded from the scale. Perhaps, in the Greek coaching context, team sport coaches do not give much attention to the media. Subsequently, the aforementioned factor structure of the scale was verified by applying CFAs in the second sample of the 122 team sport coaches. The evaluation of the overall fit of the model (through goodness-of-fit indices), the internal structure of the measurement model (through factor loadings, residual variances, etc.), the statistical conclusion validity (through convergent and discriminant validity), and the reliability of the GrCIS (through Cronbach's α coefficient) was satisfactory. The four-factor structure of the GrCIS (conflicts, time constraints, financial difficulties, and pressure to win) was verified.

The four-factor structure of the 19 items is in accordance with the four-factor structure of the 30 items verified by Kelley and Baghurst (2009). There is also a correspondence between the two scales regarding factors content and labels. That is factor named "pressure to win" corresponds to "win-loss", factor named "time constraints" corresponds to "time-role", factor named "financial difficulties" corresponds to "program-success", and finally, factor named "conflicts" corresponds to "athlete-concerns". These correspondences show that the two scales, although different, are similar and related to its respective national coaching context.

However, as any empirical research is not without its limitations, so this research has its own. Firstly, the convenience sampling method, that was used to collect the data, does not allow the generalization of the results to the population. In the future, the use of a probabilistic sampling method is proposed, which will be based on lists of coaches' registrations in the various coaching associations (Couper, 2000). Thus, all coaches will have the opportunity to participate in the sample.

A second limitation concerns the disadvantages of the cross-sectional study using self-report questionnaires. The common method of data collection involves the risk of increasing method variance and contaminating the reliability and validity of the constructs under consideration. However, precautionary steps have been taken to protect from common method bias. Although, two correlated residuals have been incorporated in the model, indicating the existence of a small amount of method variance, further research is needed with a larger sample in order to achieve more stable parameter estimations. It is also needed to test for the measurement invariance across different sports or across various competitive levels of the teams.

Conclusions

Given the complexity of cognitive processes, the act of testing the validity and reliability of any instrument related to psychological parameters should be understood as a continuous process over time. The GrCIS demonstrated evidence of being a valid and reliable tool for measuring coaches' stress deriving from specific situations/issues and its use in the Greek research practice can be justified. The use of this instrument in the Greek research field may be considered as a good practice and may offer researchers an alternative option of measuring coaches' stress across various situations.

Conflicts of interest - The authors do not have any conflicts of interest to declare.

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