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Cultural intelligence in sport: An examination of football coaches' cross-cultural training needs

Cultural diversity in football has increased over the past few decades because of increased globalisation in the world of sports. Coaches' mobility across countries and clubs has never been larger (Taylor, 2010; Smith, 2016) and it is common nowadays to see coaches managing multi-international teams or working with people from various nationalities. This can create challenges for coaches working in foreign countries and with multicultural teams (Griggs & Gibbons, 2014; Vincent, Kian, Pedersen, Kuntz, & Hill, 2010) because they are required to adjust quickly to new cultural sport contexts (Borges, Rosado, de Oliveira, & Freitas, 2015). Although coaches are commonly trained in several aspects of the game as well in different disciplines, to our knowledge they rarely receive training on cultural intelligence.

Cultural intelligence is the capability of a person to adapt effectively to different cultures (Early & Ang, 2003). By culture, we mean the “information capable of affecting individuals' behaviour that they acquire from other members of their [group] through teaching, imitation, and other forms of social transmission” (Richerson & Boyd, 2005, p. 5). By intelligence, we consider the capacity to learn from experience, using metacognitive processes to enhance learning, and

the ability to adapt to the surrounding environment (Sternberg, 2018). In this study, we focused on a selective perspective of cultural intelligence that relates to nationality and sports specificity in order to cover the aim of the study. Cultural intelligence has been investigated in areas such as management, military, and education. In sport, no studies so far have explored cultural intelligence though relevant work has been published in the area of cultural sport psychology (for an overview of topics see Schinke & Hanrahan, 2009). Cultural Intelligence in Sport focuses on the cultural factors that contribute to athletic performance and athletes' well-being introducing cultural strategies to be implemented in the sports context. A raised awareness of cultural factors is important because of the increased globalisation resulting from coaches' and athletes' migration across countries and clubs (Borges et al., 2015; Smith, 2016). Cultural intelligence has been conceptualised as spanning four dimensions: metacognition, cognition, motivation, and behaviour (Ang et al., 2007; Fang, Schei, & Selart, 2018; Ott & Michailova, 2018). Metacognition is described as the awareness, planning, and checking assumptions about different cultures. Cognition is the understanding of the cultural systems, cultural values, language, and leadership. Motivation is intrinsic or extrinsic interests and self-efficacy in interactions with people from different cultures. Behaviour is the verbal, nonverbal, and speech adap-

tations in interactions involving people from different cultures. These dimensions are based on Sternberg and Detterman's (1986) multidimensional model of intelligence. According to this model, intelligence should be considered according to the specificity of the cultural context because people from different cultures think and act in different ways.

The easiest way to equip coaches with cross-cultural skills is to develop training that can be offered or embedded in current accreditation courses. Cultural intelligence training has been used among highly skilled professionals such as bankers and lawyers and it was related to successful adjustment and faster adaptation to different cultural contexts (Livermore, 2011; Rütth & Netzer, 2020). This training has been reported as having an impact on university students' cultural intelligence (MacNab, 2012). The program was based on experiential training and included a contact component, which increased participants' cultural intelligence, with the metacognitive and behavioural dimensions showing the most improvements. Also, two reviews on this topic reported the positive impact of cultural intelligence training on the improvement of cultural intelligence on other participants (Ott & Michailova, 2018; Solomon & Steyn, 2017). However, to date, and as far as we are aware, this type of training has not been offered to football coaches. To understand the training needs of this specific population it is important to assess the *when, who*

Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

and *how*: when would such training be most needed (before, during, or after migration), who would be the recipients of the training (coaches, but perhaps also family and accompanying technical team; Reiche, Lee, & Quintanilla, 2014), and how would the training be delivered (through didactic or more experiential training which may resonate better with coaches; Cushion, Armour, & Jones, 2012; Cushner & Brislin, 1997).

International experience can be considered essential to develop cultural knowledge, skills, and behaviours (Shannon & Begley, 2008). It can happen when individuals have cross-cultural interactions, both in short professional visits to a foreign country and when working abroad for long periods. Working abroad drives individuals to develop the four components of cultural intelligence (Crowne, 2008; Engle & Crowne, 2014; Sahin, Gurbuz, & Köksal, 2014) because by interacting with people from the host country in a new cultural environment, individuals test their assumptions about their own culture. They may develop cultural awareness, which helps them use strategies that are more efficient in future interactions (metacognition). These experiences also allow migrants to gain new knowledge about cultural values, language, and leadership in that culture (cognition; Li, Mobley, & Kelly, 2013). Studies have reported that migrants with previous international experience are more successful in their jobs abroad because they may be more interested and driven to adjust to cultural differences (motivation; Shannon & Begley, 2008). Finally, having international experience can change the attitudes about foreigners and for this reason change behaviours toward them (Shannon & Begley, 2008). In sum, international experience involves new knowledge and experiences and these contribute to the acquisition of new and more adaptable behaviours in line with Kolb's experiential learning theory.

Experiential learning theory (Kolb, 1984) is based on the process of acquiring knowledge through a combination of grasping and transforming experience. The four learning stages include concrete experience, abstract conceptualization

(both related to grasping the experience), reflective observation, and active experimentation (both related to transforming the experience; Li et al., 2013). First, concrete experience is grasped by the elements that result from the engagement in a relevant experience (MacNab, 2012). Individuals' commitment to the new cultural context is determined by their ability to use their feelings when dealing with new and uncertain contexts. According to Kolb (1984), this stage of learning enables them to consider other people's emotions and values, and come across different cultures in a personal manner. Second, reflective observation transforms knowledge through the use of internal processing based on experience. In this stage, individuals are allowed to look at things from different perspectives, using a critical approach to challenge their assumptions. Third, abstract conceptualization is grasped by the use of analytical skills to make a symbolic representation of the experience. Individuals can think about how to use their new knowledge in similar circumstances and conceptualize new plans for action in those situations. Coaches can be conscious of their coaching philosophy when interacting with a sports stakeholder from a different culture. The conceptions of their philosophies can change based on their previous experiences (Mullem & Brunner, 2013). Fourth, active experimentation transforms knowledge by applying lessons from the experience to other contexts and future actions. This is focused on doing what works in different cultural contexts, and using different behaviours to test ideas and change situations. Coaches can adjust their leadership style when interacting with a sports stakeholder from a different culture. Their leadership style normally relies on their own experiences (Babbitt, 2019). Coaches' international experiences may constitute experiential learning regarding cultures (Cushion et al., 2012; Mesquita et al., 2012; Mesquita et al., 2014) and therefore be linked with enhanced cultural intelligence.

This study aims to develop the CQs-port scale and examine its factorial structure and psychometric properties; and

examine coaches' cultural intelligence and their perceived cross-cultural training needs. The research questions in the present study were: How do coaches rate their cultural intelligence? What are the cross-cultural training needs of football coaches? It was expected that coaches with migration experience would rate themselves higher on cultural intelligence and identify fewer training needs (based on previous studies in military workers; Sahin et al., 2014). Therefore, we hypothesise that international experience in globalised football may be related to coaches' cultural intelligence. We also explore whether migration experience influences the perception of cross-cultural training needs.

Methods

Participants

The sample size required for this study that uses a structural equation model (SEM) was calculated using the a priori sample size calculator for SEM (Soper, 2017). The calculations indicated that 173 participants would be needed to rise above 0.9 power for an anticipated effect size of 0.3 with a probability level of 0.05. A total of 209 (204 men and 5 women) participants took part and their data were validated and considered for data analysis. Participants' ages ranged from 23 to 71 years (mean = 38.84; standard deviation [SD] = 10.41), 88 participants had previous international experience as professional players or as coaches and 121 had no such experience. Regarding certification level, 95 participants had levels 1 or 2 (coaching certificates) and 114 had levels 3 or 4 (Union of European Football Associations [UEFA] coaching licenses). Regarding education level, 31 not entered in higher education, 78 had a higher education degree (level 6) and 100 had a post-graduate degree (level 7/level 8). The study was approved by the Ethics Committee of the School of Applied Sciences (SAS1726).

Variables

The independent variable was migration experience (with vs. without experience).

The dependent variables examined were cultural intelligence in sport and cross-cultural training needs.

Procedures

For recruitment, the football coaching providers and facilitators in Portugal, Germany and England were gatekeepers for the dissemination of the survey by emailing it to their respective football coaches' network. This population has its own particular characteristics and access may be difficult, particularly for elite-level coaches. Therefore, we asked coaches to share the survey link with their privileged contacts. Inclusion criteria were football coaches with or without migration experience, who were over the age of 18 and working. We hoped to cover a range of age, gender, coaching and migration experience, nationality and coaching positions to achieve a fair representation of the football coaching population. However, female coaches were not specifically targeted for recruitment and the number who participated was low. By following a link to the study, participants could access the information sheet and give consent before being asked to complete the survey. All the information related to the survey was available in English, Portuguese, German, and French.

Survey

The online survey included the Cultural Intelligence in Sport Scale and the Cross-Cultural Training Needs. All questionnaires used a Likert scale from 1 to 7 (1 = strongly disagree, 7 = strongly agree). The Cultural Intelligence in Sport Scale (CQsport, [Table 1](#)) was developed for this study, based on the Cultural Intelligence Scale (CIS) developed by Anget al. (2007). We adapted the questions to the context of sport, including the same dimensions and using sport-specific items. To translate the CQsport from English into French, German and Portuguese, we followed methodological procedures suggested by Vallerand (1989) and recommended by Banville, Desrosiers, and Genet-Volet (2000). We used a five-step process as follows: (a) Preliminary

translation, in which we designed the first version of the survey and had three experts with higher education in English-Portuguese languages translate it; (b) First evaluation panel in which an analysis of this Portuguese version was reviewed by three specialists to generate a second version of the questionnaire that incorporated their suggested modifications; (c) Second evaluation panel in which this second Portuguese version of the questionnaire was evaluated by a different panel composed of four other specialists who, together with the first panel of experts came to a consensual judgment of the content of a new third version; (d) Pilot study ($n = 56$) in which the third version of the questionnaire was administered for testing English/Portuguese syntax and comprehension, resulting in a fourth version; (e) Finally, a revision in which two Portuguese teachers reviewed the fourth version for syntax, spelling, and grammar and produced the fifth and final version. Identical procedures were used for the English to German and English to French translations.

The Cross-Cultural Training Needs questionnaire was also developed for this study based on previous literature about cross-cultural training (MacNab, 2012; Reiche et al., 2014), and Employment Mobility (Crowne, 2008). It consisted of four dimensions: training content, training recipients, training delivery, and migration stages. Five researchers qualified in sports and/or coach education and with migration experience evaluated this questionnaire to determine whether the items were relevant and clear. Based on their comments the questionnaire was revised and then translated into Portuguese, German and French. Forward translations were conducted for the questionnaires by native researchers and/or coach educators (see Schlägel & Sarstedt, 2016). The questionnaires were available online.

Data analysis

A confirmatory factor analysis (CFA, see also below) was performed to investigate the goodness of fit of the four-factor model of the CQsport using maxi-

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Cultural intelligence in sport: An examination of football coaches' cross-cultural training needs

Abstract

Cultural intelligence is the capability of a person to adapt effectively to different cultures. This capability has been investigated in areas such as management, military, and education. However, there are no studies in sport referring to this capability. It is important to study cultural intelligence in sport because of the increased globalisation resulting from coaches' and athletes' migration across countries and clubs. This study aimed to develop the Cultural Intelligence in Sport (CQsport) and examine its factorial structure and psychometric properties; and examine coaches' cultural intelligence and their perceived cross-cultural training needs. Participants were 209 football coaches either with or without international experience. Participants completed an online survey consisting of CQsport and a cross-cultural training needs questionnaire. We used a multigroup analysis, within the structural equation model (SEM) approach, to test group differences in the CQsport and performed a one-way analysis of variance (ANOVA) for comparisons across groups concerning cross-cultural training needs. Coaches with international experience rated themselves with more cultural intelligence in the sports context than coaches with no international experience on the metacognitive, cognitive, motivational and behavioural dimensions. Coaches with international experience also self-rated fewer training needs than coaches without international experience. This study represents the first attempt to examine football coaches' cultural intelligence and their cross-cultural training needs.

Keywords

Emigration · Managers · Soccer · Cultural diversity · Transnationalism

mum likelihood estimation on AMOS 26. We assumed a 10:1 ratio (i.e., ten subjects for each parameter to be estimated), as suggested by Kline (2011). We used a Maximum Likelihood (ML) method and measurement model adequacy veri-

Table 1 Means, standard deviations, normality tests, factor loadings for the confirmatory factor analysis (CFA) and Cronbach's α for the Cultural Intelligence in Sport Scale (CQsport)

Items	Mean	SD	Skew	Kurtosis	Loadings	CR
<i>Metacognitive CQ sport</i>						
I am conscious of my coaching philosophy when interacting with a sports stakeholder from a different culture	5.79	1.39	-1.39	2.09	0.90	0.89
I adjust my leadership style when interacting with a sports stakeholder from a different culture	5.43	1.40	-0.91	0.61	0.71	
I check the efficacy of my coaching philosophy when interacting with a sports stakeholder from a different culture	5.56	1.33	-1.01	1.09	0.92	
I adjust my coaching philosophy when interacting with a sports stakeholder from a different culture	5.37	1.39	-0.74	0.25	0.72	
<i>Cognitive CQ sport</i>						
I know how the organisation of a club works in a foreign country	4.84	1.37	-0.73	0.74	0.80	0.93
I know the competitive mentality in a foreign country	5.11	1.43	-0.94	0.85	0.92	
I know the behaviour of the fans in a foreign country	5.12	1.37	-0.84	0.87	0.89	
I know how the coach-sports stakeholders' relationship works in a foreign country	4.99	1.47	-0.85	0.56	0.91	
<i>Motivational CQ sport</i>						
I enjoy interacting with sports stakeholders from different countries	5.87	1.47	-1.44	1.64	0.83	0.94
I am confident that I can work with a foreign sports stakeholder when working in my native country	5.78	1.57	-1.32	0.90	0.88	
I am confident that I can work with a foreign sports stakeholder when working in a foreign country	5.69	1.52	-1.14	0.48	0.91	
I am confident that I can deal with the stresses of adjusting my coaching style to a foreign country	5.42	1.56	-0.96	0.19	0.82	
I enjoy coaching in cultures that are different from my native country	5.53	1.52	-1.00	0.12	0.82	
I am confident that I can get used to the sport's conditions/context in a different country	5.68	1.51	-1.17	0.46	0.89	
<i>Behavioural CQ sport</i>						
I change my verbal behaviour when interacting with a sports stakeholder from a different country	5.16	1.52	-0.83	-0.02	0.90	0.92
I use pause and silence differently to suit my interaction with a sports stakeholder from a different country	4.95	1.56	-0.63	-0.46	0.86	
I vary the rate of my speaking when interacting with a sports stakeholder from a different country	5.06	1.52	-0.76	-0.28	0.86	
I change my non-verbal behaviour when interacting with a sports stakeholder from a different country	4.80	1.58	-0.58	-0.60	0.79	
I change my facial expressions when interacting with a sports stakeholder from a different country	4.87	1.53	-0.57	-0.48	0.80	
Multivariate	-	-	-	166.06	-	-

SD standard deviation

fied by the traditional absolute and incremental indices of Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), standard mean root square residual (SRMR), and root mean square error of approximation (RMSEA), with a confidence interval of 90%. For these indices, we used cut-off values suggested by several authors (e.g., Byrne, 2010; Hair et al., 2014; Marsh et al., 2004). Specifically, we used the χ^2/df (ratio of chi square to degrees of freedom) < 5 , CFI and TLI ≥ 0.90 , SRMR ≤ 0.8 , and RMSEA ≤ 0.8 . We performed a preliminary analysis of the data to verify the

normality of data distribution and assess for missing values and outliers. To attend to the missing values, the full information maximum likelihood (FIML) imputation was chosen. We analysed internal consistency through composite reliability and calculated it by Raykov's (1997) formula, adopting 0.70 as the cut-off value (Hair et al., 2014). We calculated average variance extracted (AVE) to evaluate convergent validity, and we defined values > 0.50 as the cut-off for acceptability. For discriminant validity, we calculated heterotrait-monotrait ratio of correlations

(HTMT) and it had to be greater than 0.85 (Henseler, Ringle, & Sarstedt, 2015).

Multigroup analysis enables the assessment of the equivalence of the measurement model between groups with different characteristics. Several authors have described the importance of measurement invariance testing between groups (Cheung & Rensvold, 2002) to determine whether certain measurements can be applied to different groups with different characteristics. To investigate the measurement invariance, we used two groups (with international

Table 2 Summary of fit indices for the measurement of invariance across the international experience for first- and second-order factors

Multigroup analyses	χ^2	df	p	CFI	$\Delta\chi^2$	Δ df	p	Δ CFI
<i>First-order factors</i>								
Unconstrained model	469.27	268	0.000	0.950	–	–	–	–
Measurement weights	505.18	287	0.000	0.946	35.91	19	0.000	0.004
Measurement intercepts	546.29	306	0.000	0.940	41.11	19	0.000	0.006
<i>Second-order factor</i>								
Unconstrained model	492.71	276	0.000	0.946	–	–	–	–
Measurement weights	520.04	291	0.000	0.943	27.33	15	0.000	0.003
Measurement intercepts	558.85	310	0.000	0.938	38.81	19	0.000	0.005

χ^2 chi-square goodness-of-fit statistic, *df* degrees of freedom, *CFI* comparative fit index

Table 3 Results for convergent and discriminant validity

Multigroup analyses	AVE	Metacognitive	Cognitive	Motivational	Behavioural
Metacognitive	0.670	0.819	–	–	–
HTMT	–	–	–	–	–
Cognitive	0.779	0.590	0.882	–	–
HTMT	–	0.621	–	–	–
Motivational	0.739	0.827	0.577	0.860	–
HTMT	–	0.796	0.570	–	–
Behavioural	0.709	0.764	0.459	0.759	0.842
HTMT	–	0.761	0.470	0.753	–

HTMT heterotrait–monotrait ratio, AVE average variance extracted

experience, $n=81$, versus with no international experience, $n=121$) and we tested the configural, metric and scalar invariance. For these tests, the changed value of the $CFI < 0.01$ indicated that the invariance tests claimed were supported (Byrne, 2010). For metric invariance, we used a change in SRMR (Δ SRMR) of less than 0.030 and a change in RMSEA (Δ RMSEA) of less than 0.015 as support for model fit. For scalar invariance, we used a change in SRMR (Δ SRMR) of less than 0.010 and a change in RMSEA (Δ RMSEA) of less than 0.015 as an indication of good invariance.

To test the hypothesis that coaches with international experience score higher on the CQsport, we performed a multigroup analysis, within the SEM approach, using AMOS 26. There are two types of measurement invariance (Sass, 2011): (a) one based on an analysis of the psychometric properties of the scale, including its configural, metric, scalar, and residual invariance; and (b) one based on an examination of group differences in variance, covariance, and latent means. We used mean and covariance structure analyses to test for latent mean differences across each group. The

Z statistic was used to determine statistical significance between latent means. We calculated Cohen's *d* criteria (1988) to obtain the correspondent effect size, following Kline's (2011) recommendations. We evaluated effect sizes as follows: (a) trivial (≤ 0.19); (b) small (0.20–0.49), (c) average (0.50–0.79) and (d) large (≥ 0.80), as suggested by Cohen (1992). We also performed a one-way analysis of variance (ANOVA) for comparisons across groups concerning cross-cultural training needs, using SPSS 26 (IBM, Armonk, NY, USA).

Results

Confirmatory factor analysis of CQsport

Data were normally distributed as skewness and kurtosis varied from -1.44 to 2.09 (Byrne, 2010). The factor loadings ranged from 0.71 to 0.92 for all items. The model fit indices suggested a good data-model fit ($\chi^2/df=1.930$, $CFI=0.968$, $TLI=0.96$, $SRMR=0.04$, $RMSEA=0.067$). The items and descriptive data for the CQsport are also included in Table 1.

All three invariance tests were satisfied. We performed three invariance tests in the two groups for our model with four first factors (four dimensions of CQsport) and a second factor (general CQsport). First, for testing configural invariance, we analysed the two groups estimated freely (unconstrained model). The goodness-of-fit results show the factor structure was similar across groups (first factors: $CFI=0.950$; second factor: $CFI=0.946$). Second, we performed a metric invariance imposing constraints for the factor loadings to be equal across groups (measurement weights model) and the results indicated good model fit (first factors: $CFI=0.946$; second factor: $CFI=0.943$). When we compared to the unconstrained model, no significant changes were identified (first factors: $\Delta CFI=0.004$; second factor: $\Delta CFI=0.003$). Third, we performed a scalar invariance test (using measurement intercepts model), which indicated a good model fit (first factors: $CFI=0.940$; second factor: $CFI=0.938$). When we compared to the measurement weights model, no significant changes occurred (first factors: $\Delta CFI=0.006$; second factor: $\Delta CFI=0.005$; Table 2).

Regarding the psychometric properties of the scale, the composite reliability of the four factors indicated high reliability of the CQ sport (Table 1). The average variance extracted (AVE) indicated values larger than 0.5, which demonstrated that the scale has convergent validity (Table 3). Discriminant validity was also accepted, as the values of the heterotrait–monotrait (HTMT) ratio of correlations was lower than 0.85 (Henseler et al., 2015).

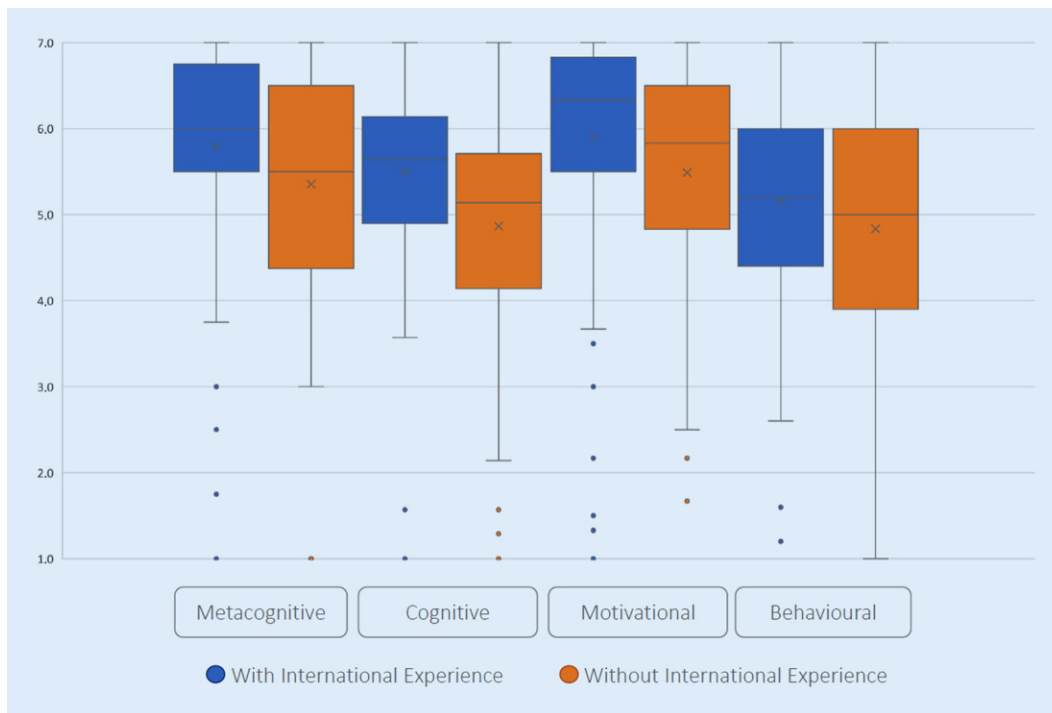


Fig. 1 ◀ CQ sport (Cultural Intelligence in Sport) dimensions considering coaches' international experience

Coaches' CQsport results

Coaches with international experience rated themselves with more cultural intelligence in the sports context than coaches with no international experience on the metacognitive ($z = 14.115, p = 0.001, d = 0.340$), cognitive ($z = 8.589, p = 0.001, d = 0.563$), motivational ($z = 12.940, p = 0.001, d = 0.297$) and behavioural ($z = 12.369, p = 0.001, d = 0.240$) dimensions (Fig. 1).

Cross-cultural training needs

Coaches with no international experience rated higher cross-cultural training needs than coaches with international experience on all items of Training content: Knowledge and skills ($F(1, 207) = 7.719, p = 0.006, d = 0.376$), English language ($F(1, 207) = 5.557, p = 0.019, d = 0.321$), Local language ($F(1, 207) = 4.865, p = 0.028, d = 0.302$), and skills to interact with foreign sports stakeholders ($F(1, 207) = 4.722, p = 0.031, d = 0.297$). They also rated higher on all items of Training recipients: Coaching staff ($F(1, 207) = 14.062, p = 0.000, d = 0.513$), Family ($F(1, 207) = 7.324, p = 0.007, d = 0.374$), and Host country coaches ($F(1, 207) = 4.506, p = 0.035,$

$d = 0.298$). Both groups preferred practice-based delivery methods or theory-based training delivered by migrant coaches but there were also group differences in terms of Delivery method (Table 4). Finally, coaches without international experience rated training needs at the stage of *working in a foreign country* significantly higher ($F(1, 207) = 4.574, p = 0.034, d = 0.299$) than coaches with international experience (Fig. 2).

Discussion

This study aimed to examine football coaches' cultural intelligence and their cross-cultural training needs. The results showed that coaches with international experience self-rated more cultural intelligence and less cross-cultural training needs than coaches without international experience.

Our finding that coaches with international experience rate higher on cultural intelligence is in line with studies outside sport where for instance military personnel showed increased cultural intelligence after having international experience (Crowne, 2008; Engle & Crowne, 2014; Sahin et al., 2014). We can assume that through international experiences

coaches have the opportunity to interact and communicate with people from different cultures, test their assumptions about their own culture, and understand cultural differences. In some cases, foreign coaches have to learn a new language or to improve their language skills in order to be able to communicate with other sports stakeholders. In our study, significant differences were found between groups in the metacognitive, cognitive, motivational, and behavioural aspects of cultural intelligence. This is important because previous research has found that the behavioural dimension was not always affected by the experience. In one study US business students improved all dimensions except the behavioural dimension, and the authors reasoned that the lack of direct contact between the students and people from the host culture might have been the cause for this (Wood & St. Peters, 2014). In their review paper, Ott and Michailova (2018) found that international experience influenced cultural intelligence but less so the behavioural component. They argued that information is needed about the correct behaviours in a specific cultural context before this dimension is impacted. For this reason, the behavioural component could be improved by the combined

Table 4 CQsport (Cultural Intelligence in Sport) dimensions and training needs considering international experience

	International experience			
	Without		With	
	Mean	SD	Mean	SD
<i>CQsport</i>				
Metacognitive	5.35	1.21	5.79	1.17
Cognitive	4.86	1.20	5.50	1.07
Motivational	5.49	1.35	5.89	1.34
Behavioural	4.83	1.45	5.15	1.21
<i>Training content</i>				
Knowledge and skills related to a specific sport's culture	5.65 ^a	1.31	5.10	1.60
English language to communicate with sports stakeholders	5.38 ^a	1.46	4.82	1.99
Local language to communicate with sports stakeholders	5.69 ^a	1.08	5.28	1.59
Skills on how to interact with foreign sports stakeholders	5.68 ^a	1.30	5.24	1.64
<i>Training recipients</i>				
My coaching staff	6.10 ^a	1.17	5.36	1.67
My family	5.61 ^a	1.57	4.99	1.74
Host country coaches	5.76 ^a	1.38	5.33	1.50
<i>Training methods of delivery</i>				
Theory-based session with physical attendance	4.76 ^a	1.29	4.52	1.63
Theory-based with use of software	4.81	1.43	4.75	1.76
Theory-based delivered by experts in cultural intelligence	4.88	1.37	4.87	1.25
Theory-based training delivered by migrant coaches	5.27	1.30	5.03	1.89
Practice-based with physical attendance	5.89	0.96	5.27	1.68
Practice-based with use of software	5.47	1.31	5.10	1.79
Practice-based delivered by experts in cultural intelligence	5.75 ^a	1.17	5.30	1.52
Practice-based mediated by migrant and native coaches	5.83	1.70	5.47	1.65
<i>Training and migration stages</i>				
Before relocating to work in a foreign country	6.01 ^a	1.27	5.67	1.66
When working in a foreign country	5.52 ^a	1.55	5.01	1.85
When relocating to work in the native country	4.10	2.00	3.76	2.02

NIE with no international experience, *WIE* with international experience, *SD* standard deviation

^aIndicate significant group differences per dimension

use of international experience and cross-cultural training. Coaches' international experiences can be understood as concrete experiences, which allow them to better understand and behave with different cultures (Kolb, 1984; MacNab, 2012). These experiences can constitute experiential learning regarding other cultures (Cushion et al., 2012; Mesquita et al., 2014) and therefore be associated with greater cultural intelligence as the results indicate.

Coaches with no international experience showed more training needs related to knowledge and skills. We suggest that international experience could help coaches develop cultural knowledge, skills, and behaviours (Shannon & Begley, 2008), which might result from their cultural exposure working abroad

(Crowne, 2008) and provide a professional advantage in globalised football (Engle & Crowne, 2014). Our findings also show that the group difference in terms of cross-cultural training needs is prominent concerning language and knowledge and skills to work abroad. We suggest that by their international experience, coaches have gained these skills, whereas those without such experiences have not. Moreover, these training needs may relate to perceived barriers of language, knowledge, and skill which have prevented coaches from working abroad. Previous studies found that if coaches do not speak a foreign language, they will feel less engaged in having an international experience (Orlowski, Wicker, & Breuer, 2016, 2018). The group differences in the need for

cross-cultural training *when working in a foreign country* may be explained by coaches with international experience feeling less need for such training at this stage of their migration. However, we might consider that international experience without engaging in reflection and active experimentation, might not be enough to transform the experience into learning (Li et al., 2013; MacNab, 2012). So, also individuals with international experience should consider cross-cultural training to get support on reflecting and thinking over different perspectives by using a critical approach to challenge their assumptions (Kolb, 1984).

The limitations of this study prevent the over-generalisation of the results and may guide future research. We treated the independent variable international experience as binary but future research may explore it further: Does the duration of international coaching experience correlate with the level of cultural intelligence? Or does any amount of international experience contribute to better cultural intelligence? Do coaches' life experiences in multicultural contexts and their interactions with people from other cultures also impact their cultural intelligence? Cultural intelligence was self-rated so it remains unclear whether coaches were entirely conscious of their cross-cultural training needs. Future studies should examine the perceptions of other sports stakeholders (e.g. sports directors, athletes) regarding their coaches' cultural intelligence. The cross-cultural training programmes should be implemented and their impact on coaches' cultural intelligence examined. In this study, we mainly focused on cultural intelligence related to nationality aspects in order to cover the aim of the study. However, it would also be important to consider cultural intelligence in relation to sports, lifestyles, youth cultures, and organisational cultures. This study represents the first attempt to examine cultural intelligence in sports. It provides an instrument to measure cultural intelligence in sport (CQsport). It shows that coaches with international experience self-rated more cultural intelligence and fewer training needs than coaches without international experience. It also provides valuable in-

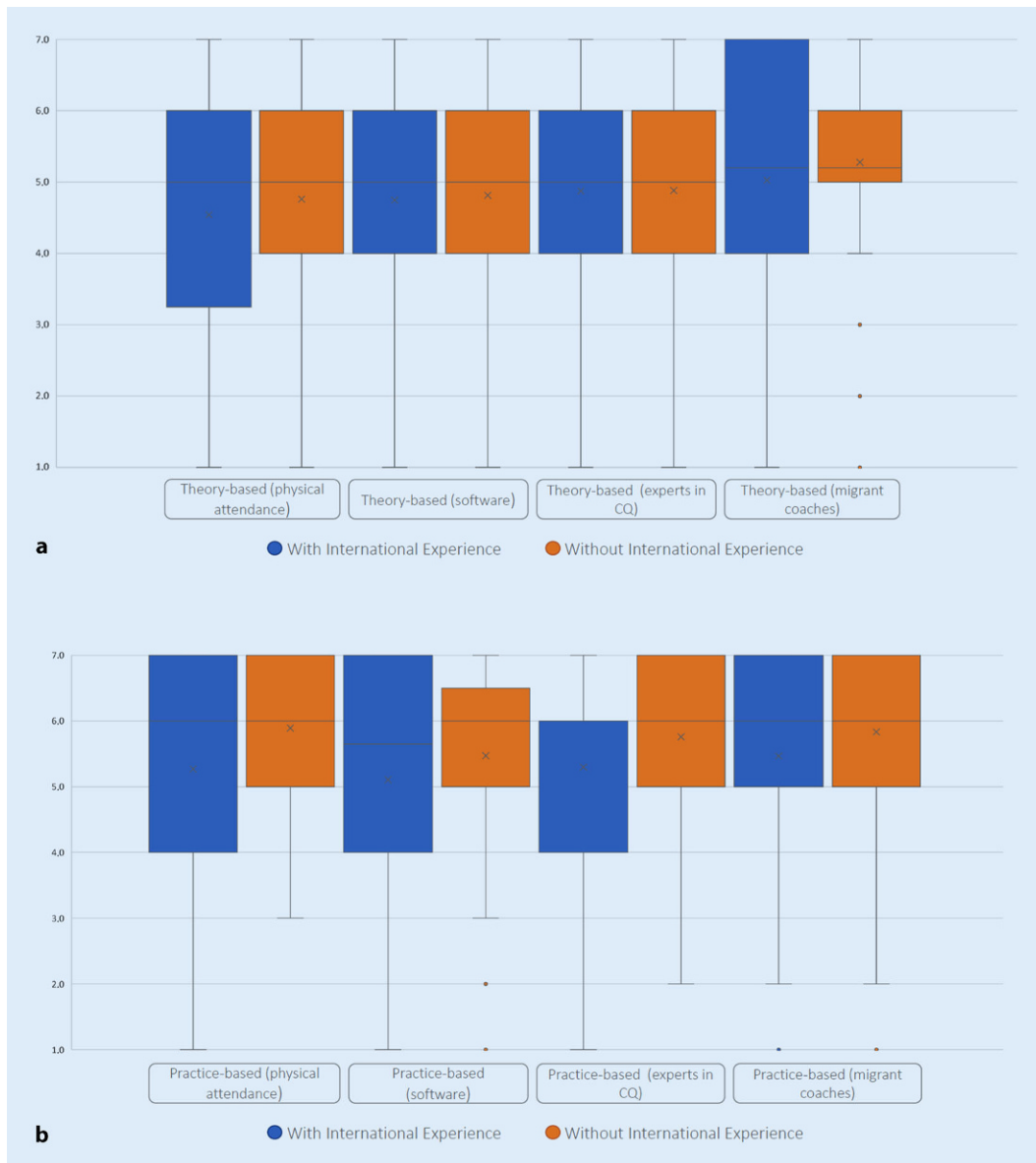


Fig. 2 Training needs considering international experience: **a** Theory-based methods of delivery; **b** Practice-based methods of delivery

formation for the *when*, *who*, and *how* of delivering cross-cultural training.

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Declarations

Conflict of interest. M. Borges, A. Rosado, B. Lobinger, F. Freitas and R.F. de Oliveira declare that they have no competing interests.

All studies mentioned were in accordance with the ethical standards indicated in each case.

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