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53 studies on migrants' experiences indicates that transitioning athletes encounter an array of
54 psychosocial and cultural challenges both on and off the field, including social isolation,
55 loneliness and homesickness (Richardson, Littlewood, Nesti, & Benstead, 2012; Ronkainen,
56 Khomutova, & Ryba, 2019; Samuel, Stambulova, & Ashkenazi, 2019); difficulties
57 understanding and navigating cultural value systems and norms (Khomutova, 2016;
58 Middleton, Schinke, Oghene, McGannon, Peterson, & Kao, 2020; Schinke, McGannon,
59 Battochio, & Wells, 2013); frustration, anger, feelings of cynicism and self-doubt (Samuel et
60 al., 2019; Schinke, Blodgett, McGannon, Ge, Oghene, & Seanor, 2017); as well as
61 marginalization, social exclusion and conflict (Blodgett & Schinke, 2015; Ryba, Ronkainen,
62 & Selänne, 2015). The aforementioned researchers convincingly argued that cultural
63 transition pathways are socially constructed, and their trajectories are contingent upon both
64 the transnational migrants' cultural capital and experience on the one hand, and structural
65 barriers in the social fields of origin and destination countries, on the other (see also Ryba,
66 2017; Ryba et al., 2018; Schinke, Blodgett, Ryba, Kao, & Middleton, 2019).

67 The role of athletic and non-athletic environments in facilitating or debilitating
68 acculturation processes of migrant athletes has also been investigated (Duchesne, Bloom, &
69 Sabiston, 2011; Elbe et al., 2018). These studies revealed that athletes who report higher
70 levels of satisfaction with both sport and non-sport aspects of everyday life, experience an
71 enhanced feeling of belonging in new social networks as well as motivation to settle in.
72 Moreover, a recent study of youth migrants in Greece showed that sport can reduce feelings
73 of discrimination and serve as a buffer against acculturative stress (Morela, Elbe,
74 Theodorakis, & Hatzigeorgiadis, 2019). However, no previous studies have examined the
75 extent to which challenges associated with transitioning into a new culture in general impact
76 on an athlete's adaptation in the sport context. In other words, there is a poor understanding
77 of the potential influences of culturally constituted environmental factors – within which the

78 athletic career transition is embedded – on an athlete’s sport performance context. With the
79 overarching goal to deepen current understandings of the cultural transition, our exploratory
80 quantitative study aimed to identify challenges that professional and amateur elite athletes
81 experience on and off the athletic field, when transitioning to new environments at a given
82 cultural site. The relationship between difficulties in cultural adaptation and demographic
83 characteristics, namely, gender, sport type (individual vs. team), age and previous migration
84 experience were also examined.

85 **Cultural Transition Theoretical Framework**

86 In this research we focus on transnational athletes who have constructed their careers
87 across borders and whose individual and sport-based development has been embedded in the
88 socio-culturally different contexts of at least two countries (c.f. Ryba & Stambulova, 2013).
89 Culture is conceptualized as constitutive in explaining psychological phenomena, especially
90 with regards to the self as agent and its relations with others and the social environment
91 (Kitayama, Duffy, & Uchida, 2007; Markus & Kitayama, 2010). From a cultural psychology
92 perspective, the cultural and the psychological cannot be separated. However, cultural models
93 organizing the respective modes of being, consisting of agency, self-other representation, and
94 cognition (Kitayama et al., 2007), typically can be delineated through comparison when an
95 individual gets involved in contrasting cultural activities and practices. Although feeling,
96 thinking, and acting can take culture-specific forms, humans possess a powerful capacity to
97 continually shape and be shaped by the context (Markus & Kitayama, 2010). Thus, adapting
98 to an unfamiliar culture is a time-dependent process rooted in the human tendency to strive
99 for internal equilibrium while establishing a relationship with a new environment (Kim,
100 2005; Ryba, 2017; Ryba et al., 2012).

101 The present study is situated in the Cultural Transition Model (Ryba et al., 2016) that
102 advanced conceptual understandings of the cultural adaptation mechanisms produced in the

103 transition process. The model was developed based on experiences of professional and semi-
104 professional transnational athletes and accounts for short- and long-term adaptation, referred
105 to as acute cultural and sociocultural adaptation, respectively. Acute cultural adaptation
106 (ACA) typically begins shortly after relocation when athletes learn to fit in to a new sporting
107 environment and gradually acquire cultural capital that is valued in a broader societal context:
108 for example, adjusting to the communication norms and practices of the host site. The ACA
109 is conceptualized as a negotiated process predicated on the satisfaction of basic psychological
110 needs of relatedness, competency and autonomy (Ryan & Deci, 2000), with team relatedness
111 mediating the acculturation process of migrant athletes (Ryba et al., 2012). During this phase,
112 many athletes report experiences that are symptomatic of ‘culture shock’ (e.g., triggered by
113 weather, diet, training and living conditions) and prioritize their athletic performance
114 (Meisterjahn & Wrisberg, 2013; Ryba et al., 2012; Samuel et al., 2019; Schinke et al., 2013).
115 Ryba et al. (2016) moreover suggested that transnational professionals’ focus on performance
116 issues is also facilitated by receiving clubs’ expectations for athletes to adapt to potentially
117 different cultural norms of a club, league or national sport system (but rarely beyond that),
118 whereby the athletes’ normative belonging is established. Consequently, establishing strong
119 social relations and making friends with teammates at destination may be critical to
120 successful integration in the new environment (Agergaard & Ryba, 2014; Ely & Ronkainen,
121 2019; Ronkainen, Harrison, Shuman, & Ryba, 2016; Schinke & McGannon, 2014).

122 Long-term migrants typically more actively engage in interpersonal relations at various
123 cultural sites outside of their sport and as a result may become more socially integrated in the
124 destination country, although encompassing multiple sites of inclusion and exclusion. With
125 long-term settlement and the likelihood of permanent residence, athletes are motivated by the
126 sociocultural dimension of acculturation associated with behavioral competence, cultural
127 knowledge, and the ability to interact and function autonomously in the new cultural

128 environment (Ward & Kennedy, 1999). Studies of transnational athlete migrants revealed that
129 the cultural transition outcome is typically a self-identity transformation, with a subtler
130 understanding of the local socio-political and cultural systems, and the ability to shift
131 perspectives within the self–other orientation based on a given cultural context (Light et al.,
132 2019; McGannon, Schinke, Ge, & Blodgett, 2018; Ronkainen et al., 2016, 2019; Ryba et al.,
133 2012, 2015; Schinke & McGannon, 2014; Schinke, Blodgett et al., 2019).

134 Because transnational athletes are simultaneously embedded in multiple layers of the
135 social fields, Ryba et al. (2016, 2020) theorized that the psychological work of cultural
136 transition involves a cycle of attunement to variations in the cultural modes of being, with
137 three psychological mechanisms contributing to optimum individual functioning at each
138 phase of the transition. The underlying psychological mechanisms are: (a) social
139 repositioning – that is, identification where one stands within new social relations and
140 networks; (b) negotiation of cultural practices – that is, finding balance between one’s own
141 and the destination countries’ cultural norms and daily practices; and (c) meaning
142 (re)construction – that is, the process of realigning personal life story as new experiences
143 emerge that may challenge the previous self-narrative. Studies that applied the cultural
144 transition model to a specific athletic population provided support of its non-linear process
145 (Ely & Ronkainen, 2019; Ronkainen et al., 2019).

146 The important implication of the cultural transition model for the present research is
147 that we conceptualize challenge as something that acquires meaning in a particular social and
148 cultural context and consequently activates idiosyncratic modes of thought, feeling, and
149 action that do not necessarily translate into universal causal relations. This approach also
150 points to the need to consider subjective time in psychological processing as well as the
151 possibility of cumulative factors across the social fields that may mediate the relationship
152 between the psychological and the cultural in transition. Furthermore, as suggested by Ryba

153 (2019), while the current model offers useful insights into the cultural adaptation processes, it
154 should be developed further with regards to migration motives, gender, and athletic status, in
155 particular. In this study, we focused on exploring sociocultural markers of difference,
156 namely, gender, sport type, age, and previous migratory movements.

157 **Factors Associated with Cultural Adaptation**

158 It is important to point out that transnational athletes migrate for a variety of reasons
159 (e.g., training camps, professional contracts, fleeing totalitarian regimes or war zones) which
160 significantly shape their acculturation pathways (Ryba et al., 2018). In this paper, we focus
161 on highly skilled migrants who have been considered a privileged group in previous studies
162 because transnational networks, through which their cross-border mobility is produced, also
163 facilitate their employment and settlement in the (temporary) destination. While we
164 acknowledge diversity *within* the skilled sport migrants regarding push and pull resources
165 underpinning their career and life motives, for the purpose of the present study we
166 operationalize migration motive as the ambition for professional sport-based development.
167 This theme has consistently been reported to cut across athletes' explanations for migrating
168 (Botelho & Agergaard, 2011; Maguire, 2004; Ryba, Stambulova, Ronkainen, Bundgaard, &
169 Selänne, 2015).

170 ***Gender***

171 Sport-based migration has traditionally been investigated as male athletes' career
172 ambition although recent research indicates that female athletes have become increasingly
173 mobile (Agergaard & Ryba, 2014; Botelho & Agergaard, 2011; Ekengren, Stambulova,
174 Johnson, Carlsson, & Ryba, 2019; Ryba et al., 2012; Ryba, Stambulova et al., 2015). Thus
175 far, however, little empirical research has examined gender-specific challenges of
176 transnational athletic migration. In one study of the gendered construction of elite athletic
177 careers from a life story perspective, Ryba, Ronkainen, et al. (2015) detailed the ways in

178 which gender beliefs and norms at a particular cultural site deeply permeated and shaped the
179 transnational athletes' career trajectories and life choices. The authors discerned a gender-
180 specific pattern indicating that while the male athlete was largely living a culturally
181 normative script of 'good life', the female athlete actively resisted and negotiated with the
182 gendered cultural narratives to realign herself with new meanings, experiences, and
183 aspirations. Another recent study that examined gendered career trajectories of Swedish
184 professional athletes (Ekengren et al., 2019), found a migration theme to be integral to
185 professional development of both men and women. However, there were differences in the
186 ways in which male and female athletes storied their cultural transition experiences: whereas
187 men emphasized performance, women stressed difficulties adjusting to social situations and
188 cultural norms. These findings are consistent with studies in other fields indicating that adult
189 women tend to experience more difficulties in adaptation to a new cultural environment due
190 to differing gender-based interactions in the family and receiving community (Dion & Dion,
191 2001; Wang, 2009). To the best of our knowledge, the association between cultural
192 adaptation and transnational athletes' gender has not been studied quantitatively.

193 *Sport Type, Age and Previous Migration Experience*

194 Cultural adaptation challenges as a function of migrant athletes' sport, age, and
195 previous mobilities have not been directly investigated. Two qualitative studies that
196 examined acute cultural adaptation of Finnish swimmers (individual sport; Ryba et al., 2012)
197 and Israeli handballers (team sport; Samuel et al., 2019) in the context of a training camp
198 migration yielded similar results. Specifically, the swimmers and the handballers' team
199 culture mediated individual athlete's engagement with the new sociocultural context. Given
200 that migrating as a group is hardly likely for transnational athletes seeking professional
201 opportunities, a team sport athlete may benefit more, than an individual sport athlete, from
202 established channels of migration in the global sports system (Maguire & Falcous, 2011). The

203 social relations with teammates may further alleviate adaptation difficulties; however, this
204 potentially is contingent on the team's acceptance and sharing of the acculturation load with
205 the newcomers to enhance their basic psychological needs satisfaction (Morela et al., 2019;
206 Ryba et al., 2012, 2015; Schinke et al., 2013; Schinke, Blodgett et al., 2019).

207 With respect to age, athlete movement within countries, such as being drafted to a
208 national team or recruited to play for a college/university team in another part of the country,
209 occurs at a relatively young age. In terms of international mobility, it has been suggested that
210 young people, aged 20-34, are more inclined to migrate than in other age categories (Bale &
211 Maguire, 2013). This phenomenon is particularly visible in professional football (soccer),
212 where clubs look to "import" youth players aged 15-16 years to their youth academies for
213 reasons of working around "home-grown" player quota limitations (Richardson et al., 2012)
214 or simply maximizing financial gains on future transfer fees. Some qualitative sport studies
215 provided contextualized insights into identity and cultural practices of migrant athletes
216 around age. For example, the school-aged Israeli athletes in a long training period abroad had
217 to arrange time for online tutoring and studying towards matriculation exams (Samuel et al.,
218 2019). In another study, the acculturation experience of migrant youth footballers to the UK's
219 Premier League was conceptualized as a "glocalization" process characterized by negotiation
220 of their migrant, adolescent and elite athlete identities in the unfamiliar and insular academy
221 setting (Weedon, 2011). Studies also highlighted that difficulties of adjusting to a higher
222 competition level in addition to multiple broader life challenges (e.g., schooling,
223 housekeeping, shopping and cooking), are typically reported by younger migrants (Blodgett
224 & Schinke, 2015; Richardson et al., 2012; Ronkainen et al., 2019; Ryba, Stambulova et al.,
225 2015; Schinke et al., 2017). Considering the link between biological age and the cultural
226 meanings informing life choices, Ryba et al. (2016) explicated the ways in which an 18-aged
227 professional football (soccer) player negotiated situated meanings ascribed to age as 'male

253 challenges experienced in and outside of sport by professional and amateur elite athletes from
254 different cultures, sport types and migrating to a wide variety of different countries. By
255 contrast, confirmatory research such as confirmatory factor analysis of psychometric tools
256 combines theoretical precision and statistical rigor (van de Vijver, 2009), including power
257 analysis and statistical treatment of data. Consistent with the exploratory nature of the study,
258 no hypotheses were formulated (Kyriazos, 2018).

259 The study's first aim was to apply the AAI to identify challenging issues associated
260 with cultural transition. The second aim was to examine whether there were differences in
261 perceived adaptation challenges based on gender and sport type, and whether there was a
262 relationship between age and previous migration experience regarding experienced
263 challenges. To clarify the relationship between the sport and non-sport environments in
264 which acculturation processes of migrating athletes occur, the third aim of the study was to
265 examine whether gender, sport type, age, previous migratory movements as well as
266 challenges experienced transitioning to a new culture in general would predict challenges
267 perceived in the sport context.

268 **Methods**

269 *Participants and Procedures*

270 A total of 143 (69 female) athletes (age range 16–44; $M = 25.76$, $SD = 4.63$) were
271 recruited for this study. One hundred and six athletes were engaged in a team sport and 37 in
272 an individual sport. All athletes in the study had made at least one cultural transition during
273 their athletic career, and 104 athletes had experienced more than one. The athletic status of
274 the athletes included professionals ($n = 86$), semi-professionals ($n = 24$), amateurs ($n = 26$),
275 and amateurs on athletic scholarship ($n = 6$). One respondent did not indicate athletic status.
276 Based on the survey, athletes' citizenship was from a total of 22 different countries in
277 Europe, 2 in North America, 3 in South America, 6 in Asia, 6 in Africa and 2 from the

278 Australasia region. A total number of 9589 months was reported as time spent by participants
279 in the current location ($n = 143$, $M = 67.06$, $SD = 103.94$), of which 3225 months by men ($n =$
280 74 , $M = 43.58$, $SD = 78.13$) and by 6364 by women ($n = 69$, $M = 92.23$, $SD = 121.5$). Of all
281 participants, 15% spent up to 3 months in the host location, 22% spent between 4 and 12
282 months, 37% spent between 13 and 48 months, 8% spent between 49 and 120 months and the
283 remaining 17% spent over 121 months (i.e. over 10 years).

284 Survey participants were recruited by personal emails to colleagues in the authors'
285 professional network with a request to forward the online survey link to athletes in their
286 network. Furthermore, a link to the survey was posted in different sport-related Facebook
287 groups. In addition, athletes in the authors' network were approached directly and asked to
288 fill in either online or paper and pencil versions of the survey. The link to the online survey
289 offered participants the opportunity to choose between Danish, English and Russian versions.
290 Furthermore, athletes were provided with pencil-and-paper versions in Finnish and Polish.
291 All translations of the survey were completed with the translation – back translation method
292 (Brislin, 1970). Following the American Psychological Association (APA) ethical guidelines,
293 all participants provided informed consent and were ensured of the confidentiality and
294 anonymity of their responses. This study was conducted from Denmark and according to
295 Danish rules ethical clearance was not required due to the non-invasive nature of the study.
296 All athletes were free to refrain from the survey as well as completing specific questions. We
297 asked that athletes be 18 years of age or older to participate in the survey and no athletes
298 under the age of 16 participated. Since youth 16 and older are deemed Gillick competent we
299 did not exclude their data.

300 Data were analyzed using SPSS version 25. Mann-Whitney U tests ($p < 0.05$) were used
301 to identify group differences in cultural transition challenges between female and male
302 athletes as well as between team and individual sport athletes. Spearman's correlations (two-

303 sided) were conducted to investigate the relationship between age and number of migratory
304 experiences and cultural transition challenges. A multivariate regression analysis was
305 conducted to investigate the study's third aim.

306 *Instrument*

307 The first part of the survey included 20 demographic questions relating to athletes'
308 gender, age, citizenship, current (temporal) settlement, number of countries in which they
309 have resided for a minimum of two months, languages spoken, sport participation, and their
310 parents' cultural background. The majority of questions were open-ended.

311 The second part of the survey included the newly developed Athlete Adaptation
312 Inventory (AAI). The AAI was developed by adapting the Sociocultural Adaptation Scale
313 (SCAS), developed by Ward and Kennedy (1999) for studying international students'
314 adaptation, and was informed by the cultural transition literature (Ryba et al., 2012, 2016).
315 Based on the adopted theoretical framework, moreover, supported by empirical findings that
316 transnational migrant athletes experience non-linear acculturation cycle on and off the
317 athletic field (e.g., Ronkainen et al., 2019; Ryba et al., 2012; Samuel et al., 2019; Schinke et
318 al., 2013), we aimed to construct a more encompassing questionnaire. For this, from the
319 original SCAS, 23 unaltered items were taken over referring to challenges when transitioning
320 to a new sociocultural environment of the receiving society (i.e., non-sport items), two items
321 were deemed redundant, and 16 items were modified. The modification of original items was
322 minor and consisted of inserting context words (e.g., on the team, in everyday situations) or
323 changing wording while maintaining the concept intact (e.g., SCAS item living away from
324 family members overseas/independently from your parents was modified to living away from
325 family and friends). This resulted in additional 23 and seven items respectively. Sixteen new
326 items were generated to probe into issues that might be perceived as challenging for athletes
327 transitioning to a new sociocultural environment, with 13 of them being sport-related items.

328 The SCAS modification as well as the new items were formulated based on (a) the
329 authors' extensive research and applied experience with transitioning athletes; (b) review of
330 relevant literature; and (c) multiple discussions with an expert panel consisting of sport and
331 performance psychology consultants (SPPC), a sports physician, team and individual sports'
332 coaches and transnational athletes (summarized in Table 1). To give an example, new items
333 like getting used to the training routine (# 5) and understanding coaching instructions (# 17)
334 were added based on first author research (1st author et al. XXXX); preparing for games in
335 your usual way (# 7) was created based on Schinke and colleagues research with Aboriginal
336 athletes (e.g., Schinke et al., 2007); while health-related items (# 33, 34 and 35) were
337 included per the sports physician recommendation. The expert discussion participants had
338 significant experience within the area of athlete adaptation, in some cases over 30 years'
339 experience, and the majority had first-hand experience with transnational mobility. The
340 purpose of including diverse experts in the discussion group was to broaden our perspective
341 on the complex dynamics of cultural adaptation, performance and wellbeing (see also 1st
342 author XXXX, based on selected interview material). The AAI was developed in English and
343 simultaneously translated into Danish and Finnish which prompted additional reflection on
344 wording of the items.

345 At the next stage, eight expert discussion participants and six transnational athletes (see
346 Table 1) were asked to provide feedback on the instrument's wording, comprehensiveness
347 and relevance. Based on feedback received, which included minor suggestions for wording,
348 the scale was further modified to a version that included a total of 69 items. The 5-point
349 response scale of the SCAS which ranges from 1 (*no difficulty*) to 5 (*extreme difficulty*) as
350 well as a choice of "does not apply" was also used for the AAI. Tables 2 and 3 list sport and
351 non-sport items, respectively. The AAI was not designed to be sport-type specific and can be

352 used for all migrant athlete populations. The AAI currently exists in eight languages, namely
353 Albanian, Danish, English, Finnish, German, Polish, Russian and Turkish.

354 **Results**

355 The means, standard deviations, and range of the 69 items (Table 2, Table 3) indicated
356 that, on average, athletes rated the challenges as slightly difficult. The mean for all 69 items
357 was 1.84 ($SD = 0.54$) with an average range of 2.67 (min 1.0 – max 3.67). The 36 items
358 relating to the sport context had a mean of 1.84 ($SD = 0.57$) and the 33 items relating to the
359 everyday life context also had a mean of 1.84 ($SD = 0.52$). Thirteen items had a mean of 2.0
360 (*slight difficulty*) or higher. Eight of these items referred to the sport context, like being
361 understood on the team, understanding jokes and humor in the team, understanding the local
362 accent/language, dealing with someone on the team who is unpleasant/aggressive or
363 expressing one's own ideas about the team's playing style. The other five items pertained to
364 general life issues such as making friends outside of sport, living away from family members
365 and friends or dealing with bureaucracy.

366 Subsequently, gender, sport type, age and previous migration experience were
367 investigated for all 69 items. Significant gender differences were found in a total of seven
368 items. In the majority of cases (4 items), females felt it was more difficult to adapt to
369 challenges compared to males. Most of these challenges were sport-related. Getting used to
370 the training routine ($U = 2003.00, p = .022, r = .19$) was more challenging for females ($M =$
371 $1.90, SD = 0.93$) than for males ($M = 1.58, SD = 0.82$). Understanding coaching instructions
372 ($U = 1924.00, p = .020, r = .20$) was also more challenging for females ($M = 2.04, SD = 0.94$)
373 than for males ($M = 1.74, SD = 1.01$). In addition, getting medical help ($U = 1639.00, p$
374 $= .029, r = .19$) was more challenging for female ($M = 2.10, SD = 1.10$) than for male ($M =$
375 $1.74, SD = 0.96$) participants. Only one non-sport aspect was identified (applicable to student
376 athletes), namely dealing with foreign staff at the university ($U = 431.00, p = .015, r = .29$),

377 which was also perceived as more challenging by females ($M = 1.82$, $SD = 1.00$) than by
378 males ($SD = 1.33$; $SD = 0.59$). Males experienced more adaptation difficulties than females
379 solely outside of sport. Talking about themselves with others ($U = 1654.00$, $p < .001$, $r = .30$)
380 was more difficult for males ($M = 2.30$, $SD = 1.16$) than for females ($M = 1.62$, $SD = 0.71$).
381 Also, adapting to local etiquette ($U = 1996.00$, $p = .035$, $r = .18$) was more difficult for males
382 than for females. And finally, seeing things from a local's point of view ($U = 1930.00$,
383 $p = .022$, $r = .19$) was also more challenging for males ($M = 1.97$, $SD = 0.92$) than for females
384 ($M = 1.68$, $SD = 0.96$).

385 Sport type was differentiated according to team versus individual sports. A total of
386 three items showed adaptation differences. In all three cases, team sport athletes perceived
387 more difficulties, and in all cases in the non-sport domain. Living away from family and
388 friends ($U = 1272.00$, $p = .002$, $r = .26$) was more difficult for team sport ($M = 1.71$, $SD =$
389 0.96) than for individual sport athletes ($M = 1.69$, $SD = 0.98$). Adapting to local etiquette was
390 also more challenging ($U = 1496.00$, $p = .030$, $r = .18$) for team sport ($M = 1.66$, $SD = 0.76$)
391 than for individual sport athletes ($M = 1.41$, $SD = 0.76$). And lastly, using the local transport
392 system ($U = 1396.00$, $p = 0.032$, $r = .18$) was more challenging for team sport athletes ($M =$
393 2.05 , $SD = 1.14$) than individual athletes ($M = 1.61$, $SD = 0.99$).

394 Age was significantly correlated with only two sport-related items. Older athletes
395 reported fewer difficulties in expressing their ideas about training ($r = -.23$, $p = .006$) and
396 understanding what is required from them ($r = -.19$, $p = .024$) than younger athletes. Age was
397 not related to adaptation to sociocultural challenges outside of sport.

398 Lastly, results suggest that previous migration experience (operationalized as the
399 number of host countries participants had lived in longer than 2 months) is inversely related
400 to adaptation difficulties for one non-sport and two sport-related items. That is, the more
401 cultural transitions experienced by athletes, the fewer adaptation challenges they identified in

402 the AAI. This pertains to finding one's way around the team ($r = -.17, p = .045$) as well as
403 understanding cultural differences ($r = -.20, p = .018$) and following local rules and
404 regulations ($r = -.20, p = .020$).

405 Finally, we analyzed whether gender, sport type, age, previous migratory movements as
406 well as challenges experienced with the transition to a new culture in general could predict
407 perceived challenges in the sport setting. For each participant, the total number of cultural
408 adaptation challenges was calculated separately for sport and non-sport domains. Briefly, the
409 number of items rated from at least slightly challenging were summated to a total score of
410 perceived challenges for each domain. Male and team sport athletes were coded as "1", and
411 females and individual sport athletes were coded as "2". Bivariate correlations showed no
412 significant differences in terms of gender or sport type (Table 4). A multiple linear regression
413 was conducted to evaluate how well gender, sport type, age, previous migratory experience
414 and non-sport setting predicted adaptation challenges in the sport setting. Regression results
415 indicated that the five predictors explained 56.2 % of the variance ($R^2 = 0.562$, adjusted $R^2 =$
416 0.56), $F(5;137) = 37.42, p < 0.01$). It was found that increased difficulties in adapting to sport
417 challenges are associated with difficulties in adapting to everyday life challenges ($\beta = .76, p$
418 $< .01$) and to a much lesser degree, with gender (female) ($\beta = .12, p < .01$). The remaining
419 independent variables (i.e. involvement in a team sport, age and previous migratory
420 experience) did not contribute significantly to the prediction (Table 5). Based on tests carried
421 out for independence of observation, multicollinearity and outliers, the model was found to
422 fulfil assumptions for multivariate regression analysis.

423 Discussion

424 The first aim of this exploratory study was to identify the challenging issues associated
425 with cultural transition in a sample of transnational migrant athletes. On average, athletes
426 rated their adaptation challenges as slightly difficult, which equals a 2 on the scale ranging

427 from 1 to 5. Since only 15% of the sample had relocated less than 3 months prior to data
428 collection, this finding is hardly surprising. However, it was found that certain aspects were
429 perceived as very challenging by some athletes. The results support previous qualitative
430 findings that athlete migrants may experience rupture or discontinuity in cultural transition,
431 both on and off the athletic field (Blodgett & Schinke, 2015; Light et al., 2019; Meisterjahn
432 & Wrisberg, 2013; Richardson et al., 2012; Ronkainen et al., 2019; Ryba et al., 2012; Ryba,
433 Stambulova et al., 2015; Samuel et al., 2019; Schinke et al., 2013, 2017). Consistent with
434 these works, relational and communal layers of acculturation have also emerged in this study
435 as evidenced by the fact that participants had most difficulty making friends outside of sport,
436 understanding the local accent/language and living away from family and friends. Our
437 findings indicate that receiving teams need to better understand migrant athletes' perspectives
438 as newcomers, who experience difficulty comprehending team culture, team jokes and
439 humor, who struggle with making themselves understood, talking about themselves with
440 others or with coping when team member behaviors are unpleasant/aggressive. Moreover,
441 results reveal that athletes value opportunities to express their ideas about training and about
442 team playing style, both of which are culturally embedded, locally organized and often taken
443 for granted by coaches and athletes alike. By cultivating awareness of cultural diversity
444 issues and taking on a greater share of the acculturation load, members of receiving athletic
445 environments would be more effective in fostering transitioning athletes' motivation to train
446 and perform (Duchesne et al., 2011; Ryba, 2014; Schinke et al., 2013; Schinke, Ge et al.,
447 2019). Sport psychology practitioners can assist athletic teams and groups to bridge gaps in
448 understanding hidden cultural assumptions that, in turn, would augment trust and team
449 chemistry associated with better performance outcomes.

450 The second aim of this study was to investigate how athletes perceive adaptation
451 challenges encountered during cultural transition, according to gender, sport type, age and

452 prior migration experience. In this sample, female athletes perceived adapting to a new
453 training routine, understanding coaching instructions and getting medical help as more
454 challenging than male athletes. Notably, women found it particularly challenging to interact
455 with individuals in power, such as coaches, doctors or foreign university staff, whereas men
456 experienced greater discomfort talking about themselves or adapting to local etiquette. Given
457 that these interactions occurred in various social fields of the culturally unfamiliar
458 environment for the athletes, the results indicate that this might also have significant
459 implications for athletes' wellbeing and career development opportunities (c.f., Ryba, 2014;
460 Ryba, Ronkainen et al., 2015). A study about the doctor–patient relationship by Ferguson and
461 Candib (2002) found consistent evidence that race, ethnicity and language had a substantial
462 influence on the quality of doctor–patient communication; and that minority (in terms of
463 power) patients, especially those unable to speak the host culture's language, were less likely
464 to elicit an empathic response from physicians, receive sufficient information, and be
465 encouraged to participate in decision making. These, together with sport psychology research
466 findings that female athletes experience greater difficulties than male athletes in their
467 communication with male coaches (Kristiansen, Tomten, Hanstad, & Roberts, 2012;
468 Ronkainen, Watkins, & Ryba, 2016), indicate that particular attention should be given to
469 transitioning female athletes to assist them with sport-related adaptation processes. Men, on
470 the other hand, showed more challenges than women in adapting to the non-sport context.
471 Understanding ways in which gender shapes acculturation pathways would serve the
472 receivers well in their efforts to manage diversity more efficiently.

473 In terms of sport type, results suggest that team sport athletes perceive adaptation as
474 slightly more challenging than individual athletes. Differences, however, only surfaced in a
475 total of three items pertaining to non-sport challenges, including living away from family
476 members and friends, using local transportation and adapting to the local etiquette. We found

477 it surprising that individual sport athletes, who do not reap the social benefits of a team
478 setting, did not perceive these transitions as more challenging compared to team sport
479 athletes. Similarly, it was expected that the social support that team members offer would
480 mitigate team athletes' difficulty of living away from family and friends to a greater extent
481 than individual athletes. The results, however, indicate that challenges associated with
482 adapting to a new team culture with respect to values, norms, practices as well as power
483 offset the potential benefits of team-based social support.

484 Concerning age, our findings indicate that older athletes find it less challenging to
485 navigate new sport environments. Specifically, older athletes appear to be more confident
486 understanding what is required of them and expressing their ideas about training. The age
487 phenomenon has been reported in the sports literature with reference to dressing room
488 hierarchy, in team sports like football/soccer (Roderick, 2006). Older players tend to have
489 greater role clarity (Cotterill, 2013), which could partially explain our findings regarding
490 their grasp of what is required or expected of them, including assuming a formal/informal
491 leadership role. Individual sport athletes are also more likely, with age and experience, to
492 form stronger views on their training and to become more assertive in expressing these views.

493 Interestingly, previous migratory experience was found to impact primarily on the
494 perception of non-sport-related adaptation difficulties. Athletes with a greater number of
495 prior cultural transitions reported fewer difficulties understanding cultural differences, being
496 able to see two sides of an intercultural issue or communicating with people from a different
497 ethnic background. It could thus be assumed that migratory movements alone, more
498 specifically the number thereof, affect adaptation to sport challenges only in so far as athletes
499 feel they are better equipped to find their way around the team. However, other aspects of
500 adapting to a new team/sports environment such as making yourself heard and understanding
501 what is required of you, come with length of professional experience. To this effect, Schinke

502 and Park (2016) state that previous transition experience “might” (p. 151) help to promote
503 acculturation processes.

504 The third aim of the study was to examine whether gender, sport type, age, previous
505 migratory experiences and general daily life challenges in cultural transition predict
506 challenges in the sport context. We found that sport challenges are strongly related to non-
507 sport (general life) challenges, and, to a lesser degree, to the female gender. Our quantitative
508 results corroborate previous qualitative studies which suggested this relationship (e.g., Dion
509 & Dion, 2001; Ryba et al., 2012). The current findings also provide support for conceptually
510 (Markus & Kitayama, 2010; Ryba, 2017) and empirically (Elbe et al., 2018; Ronkainen et al.,
511 2019; Ryba et al., 2016) established assertions about the embeddedness of migrant athletes’
512 psychological experience in relational cultural contexts, wherein the mismatch between an
513 individual’s cultural mode of being and sociocultural patterns of meaning at the destination
514 may create difficulties in an athlete’s attempts to develop a working relationship with the new
515 sporting context. Taking into consideration that on average the participants of the present
516 study spent more than five years in their destination country, our findings suggest that the
517 psychological work of cultural transition may even be more taxing than what is directly
518 assessable for transnational migrants on a conscious level.

519 **Limitations and Conclusions**

520 We acknowledge the limitation of our starting point assumption that highly skilled
521 sport migrants, such as professional and amateur elite athletes, would engage in migration
522 voluntarily. Another limitation is the self-report format of this study. The study is also based
523 on retrospectively collected, cross-sectional data and, therefore, no causal inferences can be
524 made. Moreover, there was no representative sampling for this study. It is therefore possible
525 that athletes, who had experienced a traumatic cultural transition, were not inclined to
526 respond or that athletes retrospectively downplayed how challenging the adaptation process

527 was. Hence, cultural transitions might be perceived as even more challenging than our data
528 suggest. Future research can extend this work by recruiting a larger, experientially more
529 diverse and representative group of athletes. Moreover, challenging adaptation items should
530 be related to other factors, such as coping skills, cultural awareness, and cultural
531 competencies, to examine interpersonal dynamics between newcomers and receivers that
532 might explain why certain aspects of the adaptation process appear to be challenging as a
533 function of gender and type of sport. Longitudinal research would allow the investigation of
534 adaptation processes in real time and the identification of issues perceived as most
535 challenging during particular phases of the cultural transition process. Applying mixed
536 methods might additionally further our understanding of the cultural transition process.

537 The present study contributes novel findings to the existing literature by revealing
538 significant differences in cross-cultural adaptation based on gender, type of sport, age and
539 previous migratory experience. Furthermore, the study found that female athletes, who are
540 struggling with the transition to a new cultural environment, are most likely to experience
541 challenges in the sport context, whereas males and team sport athletes seem to struggle more
542 in the non-sport context. Although navigating through an acculturation process can lead to
543 negative emotions such as frustration and stress it does not necessarily have to lead to a crisis
544 or a performance decrement (see also Ryba et al., 2020; Stambulova, 2016). On the contrary,
545 discontinuity experienced in cultural transition can enhance personal growth as suggested by
546 the results regarding age and number of mobilities. However, some athletes do not manage
547 the transition successfully, and this can lead to a decrease in performance, psychological
548 stress and health risks (Demes & Geeraert, 2015; Ryba, 2014; Schinke, Blodgett et al., 2019).
549 The questionnaire could be a valuable tool for sport psychology practitioners, coaches and
550 medical staff working with transitioning athletes by enabling them to identify most
551 challenging areas in athletes' cultural adaptation. Questionnaire results would provide a more

552 accurate assessment of athletes' needs that in turn could inform the design of targeted
553 interventions; ones which could effectively address the transitioning challenges identified.
554 Accordingly, potential performance decrements caused by unidentified inter-cultural
555 challenges can be prevented (see also Schinke, Ge et al., 2019). Further, our findings raise
556 awareness for the need to make a concerted effort in socializing newcomers and orienting
557 them to available resources which would reduce the burden of the acculturation load in
558 transnational athletes, especially in areas where psychosocial support is particularly needed.
559

560 References

- 561 Agergaard, S., & Ryba, T. V. (2014). Migration and career transitions in professional sport:
562 Transnational athletic careers in a psychological and sociological perspective. *Sociology of*
563 *Sport Journal*, 31(2), 228-247. doi:10.1123/ssj.2013-0031
- 564 Archer, M., Bhaskar, R., Collier, A., Lawson, T., & Norrie, A. (1998). (Eds.), *Critical*
565 *realism: Essential readings*. London: Routledge.
- 566 Bale, J., & Maguire, J. (2013). *The global sports arena: Athletic talent migration in an*
567 *interdependent world*. London: Routledge.
- 568 Botelho, V. L., & Agergaard, S. (2011). Moving for the love of the game? International
569 migration of female footballers into Scandinavian countries. *Soccer & Society*, 12(6), 806-
570 819. doi:10.1080/14660970.2011.609681
- 571 Blodgett, A. T., & Schinke, R. J. (2015). “When you’re coming from the reserve you’re not
572 supposed to make it”: Stories of Aboriginal athletes pursuing sport and academic careers
573 in “mainstream” cultural contexts. *Psychology of Sport and Exercise*, 21, 115-124.
574 doi:10.1016/j.psychsport.2015.03.001
- 575 Brislin, R. W. (1970). Back-translation for cross-culture research. *Journal of Cross-Cultural*
576 *Psychology*, 1, 185–216.
- 577 CIES Observatory (2019). International basketball migration report. Retrieved from
578 <http://www.fiba.basketball/documents/ibmr2019.pdf> on January 6th, 2020.
- 579 Cotterill, S. T. (2013). *Team psychology in sports: Theory and practice*. Abingdon:
580 Routledge.
- 581 Demes, K. A., & Geeraert, N. (2015). The highs and lows of a cultural transition: A
582 longitudinal analysis of sojourner stress and adaptation across 50 countries. *Journal of*
583 *Personality and Social Psychology*, 109(2), 316-337. doi:10.1037/pspp0000046

- 584 Dion, K. K., & Dion, K. L. (2001). Gender and cultural adaptation in immigrant families.
585 *Journal of Social Issues*, 57(3), 511-521. doi:10.1111/0022-4537.00226
- 586 Duchesne, C., Bloom, G. A., & Sabiston, C. M. (2011). Intercollegiate coaches' experiences
587 with elite international athletes in an American sport context. *International Journal of*
588 *Coaching Science*, 5(2), 1-20. doi:10.1080/2159676X.2016.1176068
- 589 Ekengren, J., Stambulova, N., Johnson, U., Carlsson, I.-M., & Ryba, T. V. (2019). Composite
590 vignettes of Swedish male and female professional handball players' career paths. *Sport in*
591 *Society*. doi:10.1080/17430437.2019.1599201
- 592 Elbe, A.-M., Hatzigeorgiadis, A., Morela, E., Ries, F., Kouli, O., & Sanchez, X. (2018).
593 Acculturation through sport: Different contexts different meanings. *International Journal*
594 *of Sport and Exercise Psychology*, 16(2), 178-190. doi:10.1080/1612197X.2016.1187654
- 595 Ely, G., & Ronkainen, N. (2019). "It's not just about football all the time either":
596 Transnational athletes' stories about the choice to migrate. *International Journal of Sport*
597 *and Exercise Psychology*. doi:10.1080/1612197X.2019.1637364
- 598 Ferguson, W. J., & Candib, L. M. (2002). Culture, language, and the doctor-patient
599 relationship. *Family Medicine and Community Health Publications and Presentations*,
600 34(5), 353-361. Retrieved from https://escholarship.umassmed.edu/fmch_articles/61
- 601 Khomutova, A. (2016). Basketball coaches' experience in working with multicultural teams:
602 Central and Northern European perspectives. *Sport in Society*, 19(7), 861-876.
603 doi:10.1080/17430437.2015.1067777
- 604 Kim, Y. Y. (2005). Adapting to a new culture: An integrative communication theory. In W.
605 Gudykunst (Ed.), *Theorizing about intercultural communication* (pp. 375-400). Thousand
606 Oaks, CA: SAGE.

- 607 Kitayama, S, Duffy, S., & Uchida, Y. (2007). Self as cultural mode of being. In S. Kitayama
608 & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 136-174). New York: Guilford
609 Press.
- 610 Kristiansen, E., Tomten, S. E., Hanstad, V., & Roberts, G. C. (2012). Coaching
611 communication with elite female athletes: Two Norwegian case studies. *Scandinavian
612 Journal of Medicine & Science in Sports*, 22(6), 156-167. doi:10.1111/j.1600-
613 0838.2012.01521.x
- 614 Kyriazos, T. A. (2018). Applied psychometrics: Sample size and sample power
615 considerations in factor analysis (EFA, DFA) and SEM in general. *Psychology*, 9(8),
616 2207-2230. doi:10.4236/psych.2018.98126
- 617 Light, R. L., Evans, J. R., & Lavalley, D. (2019). The cultural transition of Indigenous
618 Australian athletes into professional sport. *Sport, Education and Society*, 24(4), 415-426.
619 doi:10.1080/13573322.2017.1391085
- 620 Maguire, J. (2004). Sport labour migrations research revisited. *Journal of Sport & Social
621 Issues*, 28(4), 477-482. doi:10.1177/0193723504269914
- 622 Maguire, J., & Falcou, M. (2011) (Eds.). *Sport and migration: Borders, boundaries and
623 crossings*. London: Routledge.
- 624 Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution.
625 *Perspectives on Psychological Science*, 5(4), 420-430. doi:10.1177/1745691610375557
- 626 Meisterjahn, R. J., & Wrisberg, C. A. (2013). "Everything was different": An existential
627 phenomenological investigation of US professional basketball players' experiences
628 overseas. *Athletic Insight*, 5(3), 251-270.
- 629 McGannon, K. R., Schinke, R. J., Ge, Y., & Blodgett, A. T. (2019). Negotiating gender and
630 sexuality: A qualitative study of elite women boxer intersecting identities and sport

- 631 psychology implications. *Journal of Applied Sport Psychology*, 31(2), 168-186.
632 doi:10.1080/10413200.2017.1421593
- 633 Middleton, T. R. F., Schinke, R. J., Oghene, O. P., McGannon, K. R., Petersen, B., & Kao, S.
634 (2020). Navigating times of harmony and discord: The ever-changing role played by the
635 families of elite immigrant athletes during their acculturation. *Sport, Exercise, and*
636 *Performance Psychology*, 9(1), 58–72. doi:10.1037/spy0000171
- 637 Morela, E., Elbe, A.-M., Theodorakis, Y., & Hatzigeorgiadis, A. (2019). Sport participation
638 and acculturative stress of young migrants in Greece: The role of sport motivational
639 environment. *International Journal of Intercultural Relations*, 71, 24-30.
640 doi:10.1016/j.ijintrel.2019.04.003
- 641 Poli, R., Ravenel, L., & Besson, R. (2018). Ten years of demographic analysis of football
642 players' labor market. Retrieved from [http://www.football-](http://www.football-observatory.com/IMG/sites/mr/mr39/en)
643 [observatory.com/IMG/sites/mr/mr39/en](http://www.football-observatory.com/IMG/sites/mr/mr39/en)
- 644 Richardson, D., Littlewood, M., Nesti, M., & Benstead, L. (2012). An examination of the
645 migratory transition of elite young European soccer players to the English Premier
646 League. *Journal of Sport Sciences*, 30(15), 1605-1618.
647 doi:10.1080/02640414.2012.733017
- 648 Roderick, M. (2006). *The work of professional football: A labour of love?* London:
649 Routledge.
- 650 Ronkainen, N., Aggerholm, K., Ryba, T. V., & Allen-Collinson, J. (2020). Learning in sport:
651 From life skills to existential learning. *Sport, Education and Society*.
652 doi:10.1080/13573322.2020.1712655
- 653 Ronkainen, N. J., Harrison, M., Shuman, A., & Ryba, T. V. (2016). "China, why not?":
654 Serious leisure and transmigrant runners' stories from Beijing. *Leisure Studies*, 36(3), 371-
655 382. doi:10.1080/02614367.2016.1141977

- 656 Ronkainen, N. J., Khomutova, A., & Ryba, T. V. (2019). "If my family is okay, I'm okay":
657 Exploring relational processes of cultural transition. *International Journal of Sport and*
658 *Exercise Psychology, 17*(5), 493–508. doi:10.1080/1612197X.2017.1390485
- 659 Ronkainen, N. J., Watkins, I., & Ryba, T. V. (2016). What can gender tell us about the pre-
660 retirement experiences of elite distance runners in Finland?: A thematic narrative analysis.
661 *Psychology of Sport and Exercise, 22*, 37-45. doi:10.1016/j.psychsport.2015.06.003
- 662 Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic
663 motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.
664 doi:10.1037/0003-066x.55.1.68
- 665 Ryba, T. V. (July 2019). *Now you see me, but will you listen? Sport, work and unexamined*
666 *life in migration*. Keynote address presented at the 15th European Congress of Sport and
667 Exercise Psychology (FEPSAC, 50th anniversary), Münster, Germany.
- 668 Ryba, T. V. (2017). Cultural sport psychology: A critical review of empirical advances.
669 *Current Opinion in Psychology, 16*, 123-127. doi:10.1016/j.copsy.2017.05.003
- 670 Ryba, T. V. (2014). Cultural diversity, transnational athletes, and performance. In G. J.
671 Cremades & L. S. Tashman (Eds.), *Becoming a performance psychology professional:*
672 *International perspectives on practice and supervision* (pp. 143-151). London, UK:
673 Routledge.
- 674 Ryba, T. V., & Stambulova, N. B. (2013). The turn towards a culturally informed approach to
675 career research and assistance in sport psychology. In N. Stambulova & T.V. Ryba (Eds.),
676 *Athletes' careers across cultures* (pp. 1-16). London: Routledge.
- 677 Ryba, T. V., Haapanen, S., Mosek, S., & Ng, K. (2012). Towards a conceptual understanding
678 of acute cultural adaptation: A preliminary examination of ACA in female swimming.
679 *Qualitative Research in Sport, Exercise and Health, 4*(1), 80–97.
680 doi:10.1080/2159676X.2011.653498.

- 681 Ryba, T. V., Ronkainen, N. J., & Selänne, H. (2015). Elite athletic career as a context for life
682 design. *Journal of Vocational Behavior*, 88, 47-55. doi:10.1016/j.jvb.2015.02.002
- 683 Ryba, T. V., Schinke, R. J., Stambulova, N., & Elbe, A.-M. (2018). ISSP Position Stand:
684 Transnationalism, mobility, and acculturation in and through sport. *International Journal*
685 *of Sport and Exercise Psychology*, 16(5), 520–534. doi:10.1080/1612197X.2017.1280836
- 686 Ryba, T. V., Stambulova, N. B., & Ronkainen, N. J. (2016). The work of cultural transition:
687 An emerging model. *Frontiers in Psychology*, 7, 427. doi:10.3389/fpsyg.2016.00427
- 688 Ryba, T. V., Stambulova, N. B., & Ronkainen, N. J. (2020). Transnational career and cultural
689 transition. In D. Hackfort and R. J. Schinke (Eds.), *The Routledge international*
690 *encyclopedia of sport and exercise psychology*. London, UK: Routledge.
- 691 Ryba, T. V., Stambulova, N. B., Ronkainen, N. J., Bundgaard, J., & Selanne, H. (2015). Dual
692 career pathways of transnational athletes. *Psychology of Sport and Exercise*, 21, 125-134.
693 doi:10.1016/j.psychsport.2014.06.002
- 694 Samuel, R. D., Stambulova, N., & Ashkenazi, Y. (2019). Cultural transition of the Israeli
695 men's U18 national handball team migrated to Germany: A case study. *Sport in Society*,
696 Advanced online publication. doi:10.1080/17430437.2019.1565706
- 697 Schinke, R. J., Blodgett, A. T., McGannon, K. R., Ge, Y., Oghene, O., & Seanor, M. (2017).
698 Adjusting to the receiving country outside of the sport environment: A composite vignette
699 of Canadian immigrant amateur elite athlete acculturation. *Journal of Applied Sport*
700 *Psychology*, 29(3), 270-284. doi:10.1080/10413200.2016.1243593
- 701 Schinke, R. J., Blodgett, A. T., Ryba, T. V., Kao, S. F., & Middleton, T. (2019). Cultural
702 sport psychology as a pathway to advances in identity and settlement research to practice.
703 *Psychology of Sport and Exercise*, 42, 58-65. doi:10.1016/j.psychsport.2018.09.004
- 704 Schinke, R. J., Ge, Y., Petersen, B., Blodgett, A., Dupuis-Latour, J., & Coholic, D. (2019).
705 Building a national team context based upon the identity challenges and intervention

- 706 strategies of elite female boxers in their home training environments. *Journal of Sport*
707 *Psychology in Action*, 10(2), 94–105. doi:10.1080/21520704.2018.1543221
- 708 Schinke, R. J., & McGannon, K. R. (2014). The acculturation experiences of (and with)
709 immigrant athletes. *International Journal of Sport and Exercise Psychology*, 12(1), 64–75.
710 doi:10.1080/1612197X.2013.785093
- 711 Schinke, R. J., McGannon, K. R., Battochio, R. C., & Wells, G. (2013). Acculturation in elite
712 sport: A thematic analysis of immigrant athletes and coaches. *Journal of Sports Sciences*,
713 31(15), 1676-1686. doi:10.1080/02640414.2013.794949
- 714 Schinke, R. J., & Park, S. (2016). The emergence of acculturation in the sport psychology
715 landscape. In R. J. Schinke, K. R. McGannon & B. Smith (Eds.), *Routledge International*
716 *Handbook of Sport Psychology* (pp. 147-156). London: Routledge.
- 717 Schinke, R. J., Ryba, T. V., Danielson, R., Michel, G., Peltier, D., Enosse, L., Pheasant, C., &
718 Peltier, M. (2007). Canadian Aboriginal elite athletes: The experiences of being coached
719 in
720 mainstream culture. *International Journal of Sport and Exercise Psychology*, 5(2), 125-
721 143. doi:10.1080/1612197X.2007.9671815
- 722 Stambulova, N. B. (2016). Athletes' transitions in sport and life. In R. J. Schinke, McGannon,
723 K. & Smith, B. (Eds.). *Routledge international handbook of sport psychology* (pp. 519-
724 535). London, UK: Routledge.
- 725 | Stambulova, N. B., Ryba, T. V., & Henriksen, K. (2020). Career development and
726 transitions of athletes: The International Society of Sport Psychology Position Stand
727 revisited. *International Journal of Sport & Exercise Psychology*.
728 doi:10.1080/1612197X.2020.1737836
- 729 Van de Vijver, F. J. (2009). Types of comparative studies in cross-cultural psychology.
730 *Online Readings in Psychology and Culture*, 2(2). doi:10.9707/2307-0919.1017

- 731 Wang, J. (2009). A study of resiliency characteristics in the adjustment of international
732 graduate students at American universities. *Journal of Studies in International Education*,
733 13(1), 22-45. doi:10.1177/1028315307308139
- 734 Ward, C., & Kennedy, A. (1999). The measurement of sociocultural adaptation. *International*
735 *Journal of Intercultural Relations*, 23(4), 659-677. doi:10.1016/S047-1767(99)00014-0
- 736 Weedon, G. (2011). "Glocal boys": Exploring experiences of acculturation amongst migrant
737 youth footballers in Premier League Academies. *International Review for the Sociology of*
738 *Sport*, 47(2), 200-216. doi:10.1177/1012690211399221
- 739
- 740

741 Table 1

742 *Participant Characteristics*

743

744 **Participants of Expert Discussion**

745

746	Professional Role (Gender)	Sport	Another Roles' Experience	Region
747				
748	1. SPPC, national team (M)	I/T	Researcher, migration	Asia
749	2. SPPC, national team (M)	I/T	Researcher, migration	Australasia
750	3. SPPC, national team (F)	I/T	Researcher, migration	Africa
751	4. SPPC, national team (F)	I/T	Researcher, migration	Asia
752	5*. SPPC, NCAA athletes (M)	I/T	Researcher	North America
753	6*. SPPC, NCAA athletes (M)	I/T	Researcher, coach	North America
754	7*. SPPC, club athletes (F)	I/T	Researcher, migration	Europe
755	8*. SPPC, club athletes (M)	T	Coach, researcher, migration	Europe
756	9*. Coach, national team (M)	T	Migration	Russia, Europe
757	10*. Coach, club athletes (F)	I	Migration	Europe
758	11*. Coach, club athletes (M)	T	Migration	Europe
759	12*. Sports physician, national team			
760	and club athletes (M)	I/T	Researcher	Europe

761

762 **Transnational Athletes**

763

764

765 1. Professional athlete (M) T Student-athlete North America, Russia

766	2. Professional athlete (F)	T	Student-athlete	North America, Europe
767	3. Professional athlete (M)	T		Europe, North America
768	4. Semi-professional athlete (F)	T	Coach, student-athlete	Europe, North America
769	5. Semi-professional athlete (F)	T	SPPC, student-athlete	Europe
770	6. Amateur elite athlete (F)	I	Researcher	Europe, Asia

771

772 *Note.* *participants of expert discussion who also provided feedback on the AAI earlier
773 versions.

774

775 Table 2

776 *Items, means, ranges as well as gender and sport type differences and correlations with age*777 *and number of host countries for the Athlete Adaptation Inventory (AAI) – sport challenges*

Item Nr.	Item text	<i>M</i>	<i>SD</i>	Range	N	M/F	T/I	Age	Nr. of countries
1	Making friends on the team	1.70	1.00	1–5	142				
2	Finding your way around on the team	1.71	0.83	1–4	141				(–)
3	Being understood on the team	2.01	0.98	1–5	141				
4	Getting used to the training place/venue	1.74	0.85	1–4	143				
5	Getting used to the training routine	1.73	0.88	1–4	142	F			
6	Going to team social events/gatherings/functions	1.80	1.06	1–5	143				
7	Preparing for games in your usual way	1.66	0.89	1–5	140				
8	Talking about yourself with your teammates	2.02	1.03	1–5	139				
9	Understanding team culture	2.01	0.96	1–5	141				
10	Understanding jokes and humor on the team	2.13	1.07	1–5	142				
11	Dealing with someone on the team who is unpleasant/aggressive	2.39	1.09	1–5	137				
12	Getting used to the food offered during training camps	1.95	1.12	1–5	141				
13	Following team rules and regulations	1.47	0.79	1–5	143				
14	Dealing with people in positions of authority on the team/in the sport club	1.62	0.84	1–5	141				
15	Adapting to the team's coach–athlete interaction	1.75	0.93	1–5	140				
16	Getting along with the coach	1.62	0.87	1–5	140				
17	Understanding coaching	1.89	0.98	1–5	140	F			

	instructions					
18	Making yourself understood with the coach	1.91	0.94	1-5	140	
19	Communicating with teammates of a different ethnic background	1.84	0.96	1-5	137	
20	Relating to fans	1.60	0.91	1-5	124	
21	Dealing with the crowd/ spectators	1.47	0.80	1-5	129	
22	Dealing with playing conditions	1.81	0.89	1-5	140	
23	Understanding the local accent/language	2.59	1.31	1-5	143	
24	Relating to older/younger teammates	1.59	0.81	1-5	140	
25	Dealing with athletes of a higher status	1.61	0.83	1-5	133	
26	Understanding what is required of you	1.61	0.87	1-5	142	(-)
27	Expressing your ideas about your own training	2.14	1.00	1-5	141	(-)
28	Expressing your ideas about the team's playing style	2.30	1.05	1-5	139	
29	Accepting/understanding club/ team policies	1.64	0.91	1-5	139	
30	Understanding the coach's philosophy	1.89	0.98	1-5	140	
31	Understanding the team's value system	1.73	0.97	1-5	137	
32	Adopting the team's perspective on culture	1.70	0.86	1-5	137	
33	Expressing your health issues and concerns with the coaching staff	1.92	1.10	1-5	132	
34	Getting medical help	1.91	1.06	1-5	129	F
35	Communicating your health problems with the doctor	1.88	1.05	1-5	129	

36	Seeing things from the sports club's point of view	1.82	0.95	1-5	141
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780 Table 3

781 *Items, means, ranges as well as gender and sport type differences and correlations with age*782 *and number of host countries for the Athlete Adaptation Inventory (AAI) – non-sport*783 *challenges*

Item Nr.	Item text	<i>M</i>	<i>SD</i>	Range	N	M/F	T/I	Age	Nr. of countries
37	Understanding cultural differences	1.67	0.81	1–5	140				(–)
38	Being able to see two sides of an intercultural issue	1.69	0.76	1–5	138				
39	Making friends outside sport	2.64	1.47	1–5	142				
40	Using the transport system	1.93	1.12	1–5	136		T		
41	Making yourself understood in everyday situations	2.00	0.89	1–4	141				
42	Getting used to the pace of life	1.80	0.87	1–5	143				
43	Going shopping	1.49	0.80	1–5	142				
44	Enjoying social events/gatherings	1.68	0.90	1–5	142				
45	Worshipping as you usually do	1.87	1.09	1–5	112				
46	Talking about yourself with others	1.97	1.03	1–5	141	M			
47	Engaging in activities you usually enjoy	1.85	1.00	1–5	142				
48	Dealing with someone who is unpleasant/aggressive	2.13	0.97	1–5	139				
49	Getting used to local food/finding food you enjoy	1.68	0.92	1–5	143				
50	Following local rules and regulations	1.55	0.85	1–5	143				(–)
51	Communicating with people of a different ethnic group	1.78	0.98	1–5	141				
52	Dealing with bureaucracy	2.12	1.13	1–5	139				
53	Making yourself understood with authorities	1.94	1.09	1–5	134				
54	Adapting to local	1.64	0.84	1–5	140				

	accommodation						
55	Living away from family and friends	2.57	1.23	1-5	142		T
56	Interacting with members of the opposite sex	1.71	0.96	1-5	140		
57	Dealing with unsatisfactory service	2.14	0.91	1-5	137		
58	Finding your way around in the city	1.76	0.83	1-4	143		
59	Dealing with the climate	1.86	0.95	1-5	142		
60	Dealing with people staring at you on the streets	1.65	0.89	1-5	131		
61	Adapting to local etiquette	1.59	0.77	1-4	140	M	T
62	Getting used to the population density	1.49	0.73	1-4	140		
63	Accepting/understanding the local political system	1.92	0.94	1-5	141		
64	Understanding the locals' world view	1.86	0.93	1-5	140		
65	Seeing things from the locals' point of view	1.84	0.95	1-5	140	M	
66	Understanding what is required of you at university	1.59	0.94	1-5	71		
67	Coping with academic work	1.84	0.94	1-4	73		
68	Dealing with foreign staff at the university	1.57	0.84	1-5	70	F	
69	Expressing your ideas in class	1.81	0.96	1-5	72		

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785 *Note.* Items with a mean ≥ 2 set in boldface; M/F = scored significantly higher than the other
 786 gender; I = Individual sport athletes scored significantly higher. T = Team sport athletes
 787 scored significantly higher; (+) – the difficulty increased with increased age/number of host
 788 countries; (-) – the difficulty decreased with increased age/number of host countries.

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791 Table 4

792 *Male and female athletes' adaptation when moving to a new country*

	M (n = 74)		F (n = 69)		t	p	95% CI		d
	M	SD	M	SD			LL	UL	
AAI: Sport challenges	1.81	0.55	1.88	0.59	-0.72	0.470	-0.26	0.12	0.12
AAI: Non-sport challenges	1.88	0.53	1.81	0.51	0.77	0.444	-0.10	0.24	0.13

793 *n* – number of athletes; *M* – mean; *SD* – standard deviation; *t* – Student's test statistic; *p* – significance; 95% *CI* – confidence interval for794 difference between means; *LL* i *UL* – upper and lower level of confidence interval; *d* – Cohen's coefficient

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796 *Athletes' adaptation when moving to a new country, depending on sport type*

	team (n = 106)		single (n = 37)		t	p	95% CI		d
	M	SD	M	SD			LL	UL	
AAI: Sport challenges	1.85	0.54	1.81	0.65	0.37	0.710	-0.17	0.26	0.07
AAI: Non-sport challenges	1.86	0.52	1.80	0.51	0.56	0.580	-0.14	0.25	0.11

797 *n* – number of athletes; *M* – mean; *SD* – standard deviation; *t* – Student's test statistic; *p* – significance; 95% *CI* – confidence interval for798 difference between means; *LL* i *UL* – upper and lower level of confidence interval; *d* – Cohen's coefficient

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801 Table 5

802 *Regression coefficients in analysis predicting difficulties in adapting to sport challenges*

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
(Constant)	0.14	0.26		0.54	0.587
Age (years)	0.00	0.01	-0.03	-0.42	0.672
Number of host countries	0.02	0.03	0.04	0.67	0.507
Gender (female)	0.13	0.06	0.12	2.04	0.043
Individual sport	0.01	0.07	0.01	0.14	0.889
AAI: life challenges	0.84	0.06	0.76	13.54	<0.001

803 *B* – regression coefficient; *SE* – standard error; β – standardised regression coefficient; *t* – test statistic; *p* – significance

804

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