Exploring coach and parent transformational leadership and their associations with social identity in adolescents

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ABSTRACT

The main objective of this study was to explore the associations between the transformational leadership of coaches and parents and adolescent athletes' social identity and examine the roles of gender and the stage of adolescence in these relationships. Furthermore, this study aimed to provide empirical evidence on measurement invariance across gender and the adolescent stage in the adapted Spanish version of the Social Identity Questionnaire for Sport (SIQS). The sample consisted of 656 athletes (299 males and 357 females) from 12 to 18 years old ($M = 15.27$, $SD = 1.64$) who participated in various team sports. All the participants completed a socio-demographic questionnaire, the Social Identity Questionnaire for Sport, and the Transformational Coaching and Transformational Parenting Questionnaires. The results confirmed the scalar measurement invariance of the adapted Spanish version of the SIQS across gender and adolescent stage. Transformational coaching and mothers' transformational parenting positively predicted adolescents' social identity across gender and adolescent stage. Additionally, during early adolescence, fathers' transformational parenting was also associated with their children's social identity. These findings emphasize the importance of transformational leadership in both team and family contexts in promoting athletes' social identity.

1. Introduction

Being part of a sports team involves more than merely sharing practices. In fact, the sense of belonging is one of the most valuable experiences in youth sports (Bruner et al., 2020), and it has long-term implications for adolescents' strengths and character (Côté & Brawley, 2020). These feelings and behaviors are developed through mutual social influence within teams, and they include confronting challenges, overcoming obstacles and threats, achieving common goals, and sharing interests and values (Eys et al., 2019). This process fosters a sense of belonging to something larger than oneself and moves from an individualistic perspective to a collective one (from 'I' to 'We'). The social identity approach has addressed this issue and aroused interest in the sports domain in the past decade (Haslam et al., 2020; Stephen et al., 2023).

Social identity is defined as "that part of an individual's self-concept that derives from the knowledge of belonging to a social group, together with the emotional meaning and value attached to that membership" (Tajfel, 1981, p. 255). The social identity approach proposes that individuals are motivated to create and maintain a positive self-concept through interactions with various groups throughout their lives (e.g., family, work, school, other life activities; Tajfel & Turner, 1979). Hence, people can build and reinforce a sense of "Us" by adopting the values, norms, and goals of these groups, which in turn shape their thoughts, emotions, and behaviors (Rees et al., 2015; Stephen et al., 2023). Through a process of self-categorization (Turner, 1982), individuals perceive themselves as sharing qualities and attributes that are interchangeable with other ingroup members (Rees et al., 2015). The salience of these social categories emerges from the interaction between an individual's internal predisposition to embrace a collective self-definition and the extent to which this definition aligns with the perceived external context (Oakes et al., 1994). Therefore, social identity is not confined to

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a single sphere of life, such as sports; instead, it is manifested across various contexts and activities.

In the context of youth sports, social identity represents a key factor that influences not only participation and performance, but also personal development and growth (Bruner et al., 2020). Team membership becomes an essential component of the self-concept, fostering a shared commitment to achieving collective goals (Haslam et al., 2020; Rees et al., 2015). Although sports offer an ideal environment for the development of a positive social identity in young people, its full developmental potential is frequently overlooked (Bruner et al., 2020).

Research in youth sports has extensively utilized Cameron's (2004) model of social identity (Bruner, Sutcliffe, et al., 2020). This model characterizes social identity as a multidimensional construct comprising three main components: ingroup ties, cognitive centrality, and ingroup affect. Ingroup ties refer to perceptions of similarity, bonding, and belonging with other group members. Cognitive centrality denotes the amount of time spent thinking about being a group member. Ingroup affect pertains to positive feelings associated with group membership.

Leadership, as a key process of social influence, has been shown to significantly impact social identity (Steffens et al., 2020; Stephen et al., 2023). Moreover, it is considered a critical factor in aligning team values, norms, and goals (Lawrason et al., 2020; Steffens et al., 2020). This influence is particularly evident in youth sports, where significant others, such as coaches, family members, and teammates, play a crucial role (e.g., Bruner, Martin, et al., 2020; Steffens et al., 2020).

Among the leadership theories, the transformational leadership theory[1] (Bass, 1985; Bass & Riggio, 2006) provides an ideal framework for understanding how leaders can enhance athletes' positive experiences (for a review, see Alvarez et al., 2016; Arthur et al., 2017). Transformational leaders aim to build a shared vision of the future status that teams can achieve through collective effort and collaboration. They serve as role models by embodying the principles advocated for the team (idealized influence), and they convey confidence to each team member regarding their ability to achieve the established goals (inspirational motivation). Transformational leaders should encourage the active participation of team members in goal-setting and decision-making (intellectual stimulation) and consider the unique characteristics of each team member, adapting their leadership style to support the team's collective aspirations (individual consideration) (Bass, 1985; Bass & Riggio, 2006).

According to Bass et al. (2003), transformational leaders strengthen social identity by clarifying and enacting the team's values, mission, and vision. Transformational coaches emerge as key socializers who guide and support the development of team membership (Lawrason et al., 2020). By modeling desirable behaviors, discussing goals and expectations, and assigning challenging tasks and roles to each member, they embody a collective identity around the team (Lawrason et al., 2020). Furthermore, Cronin et al. (2015) defended the need to place a greater emphasis on investigating the gender-based discrepancies in the relationship between transformational leadership and the outcomes experienced by followers. Their findings indicated that male athletes were more likely to perceive their coaches' transformational behaviors than their female counterparts were. Additionally, Murray et al. (2020) pointed out the need for more studies that examine the impact of transformational coaching and parenting across the stages of adolescence. Their findings suggested that transformational parenting was more influential in early stages of adolescence than in later stages. The

study also indicated that, when comparing parents' and coaches' transformational leadership, coaches play a stronger role in athletic outcomes (i.e., athletic performance).

Despite its relevance, a recent review (Stephen et al., 2023), identified only one study that applied transformational leadership theory to social identity in sports (De Cuyper et al., 2016). Additionally, Turnnidge and Côté (2018) suggested the need to further explore the relationships between transformational leadership and group-based variables such as young people's social identities in the sports context. In this vein, García-Esteban et al. (2023) recently found that transformational coaching fosters social identity in adolescent athletes by satisfying their basic psychological needs. Beyond the sports domain, organizational studies have shown that transformational leadership is linked to a shared sense of belonging (Tse & Chiu, 2014). To gain further insight into the relationship between transformational leadership and social identity within the sports domain, this study will focus on adolescent athletes.

Another source of influence in youth sports practice is the family. To shed light on the influence of parents on youths' development (e.g., Morton et al., 2010) and athletic experiences (e.g., Alvarez et al., 2019), Popper and Mayseless (2003) proposed that transformational parenting (i.e., mothers and fathers) promotes positive aspects related to youth development, such as healthy eating, physical activity, and life satisfaction (e.g., Morton et al., 2011, 2012). Additionally, transformational parenting can also protect adolescent children from athletic burnout (Alvarez et al., 2019). Parents act as transformational leaders by stimulating their children's sports participation, valuing their effort, and encouraging them to overcome new challenges and goals (Alvarez et al., 2019; Morton et al., 2012). This support helps children to view sports as an environment for personal development and identity strengthening (Dorsch et al., 2020). With this in mind, it seems reasonable to suggest that parenting styles will either strengthen or undermine children's social identity development within their sports teams. To the best of our knowledge, the extant literature has not explored the links between transformational parenting and social identity in the sports domain. Consequently, the present study focuses on the transformational leadership of coaches and parents and the relationship with the development of athletes' social identity.

To assess social identity, Bruner et al. (2014) adapted Cameron's (2004) multidimensional measure of social identity to the youth sports context. Later, Bruner and Benson (2018) revised the measure by addressing psychometric and linguistic issues, leading to the development of the Social Identity Questionnaire for Sport (SIQS), a 9-item questionnaire that is valid for both unidimensional and multidimensional use (see Instruments section). The SIQS has been translated into Turkish (Turkay et al., 2018), French (Campo et al., 2022), and Persian (Gholaminezad et al., 2022), providing a valid and reliable measure for assessing social identity among young athletes. In a recent study, López-Gajardo et al. (2024) validated a Spanish version of the SIQS with a sample of athletes between the ages of 12 and 40, showing adequate psychometric properties. These authors found total invariance across both gender and sport (handball and football). Our study tests the Spanish translation and adaptation of the English version (Bruner & Benson, 2018) in a specific sample of adolescent athletes. In addition, the factor structure, reliability, and invariance based on gender and the stage of adolescence (i.e., early and late) will be examined, thus providing new evidence about the validity of the SIQS.

Based on the above, the main objective of this research was to explore whether the relationships between transformational coaching and parenting and social identity vary across gender and adolescent stage (see Fig. 1). In pursuing this objective, a specific aim was to provide new evidence of the validity of a Spanish version of the SIQS items (Bruner & Benson, 2018) by testing measurement invariance across gender and adolescent stage.

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[1] Transformational leadership theory outlines three leadership styles: Transformational, transactional, and laissez-faire (Bass, 1985). In turn, the transformational leadership style is composed of four behaviors (i.e., idealized influence, inspirational motivation, intellectual stimulation, and individual consideration). The term "transformational leadership" can be adapted based on the leader's role, for instance, whether they are coaches (i.e., transformational coaching) or parents (i.e., transformational parenting).
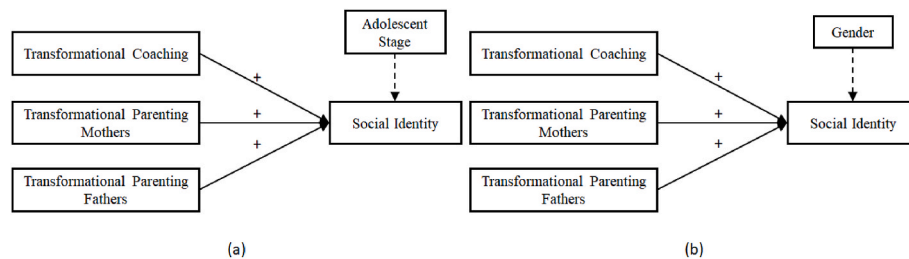
Fig. 1. Hypothesized structural invariance of the model for gender (a) and adolescent stage (b) between transformational leadership and social identity. *Note.* Dashed lines represent the control variables included in each model.

2. Method

2.1. Participants

The study included 675 adolescents who represented their teams in federated regional competitions for sports such as basketball, field hockey, handball, rugby, soccer, and volleyball in Buenos Aires, Argentina. Of these adolescents, 19 participants were excluded from the study due to the presence of outliers, incomplete parental reports, and cases where the parents were reported as deceased. The final sample consisted of 656 adolescents, of whom 299 were male and 357 were female. In terms of their stage, 354 were classified as early adolescents (ages 12–15), and 302 were classified as late adolescents (ages 16–18). The mean age was 15.27 years ($SD = 1.64$).

The athletes had trained with their team for an average of 2.48 seasons ($SD = 1.21$) and with their coach for nearly two seasons ($M = 1.82$; $SD = 1.04$). The mean number of training sessions per week was 3.04 ($SD = .91$), and all of the athletes participated in at least one game on weekends.

2.2. Instruments

Social identity was measured using the Social Identity Questionnaire for Sport (Bruner & Benson, 2018), translated from English to Spanish for this study. The SIQS stem asks athletes to reflect on their feelings towards their current team, and it is composed of nine items grouped in three scales containing three items each; in-group ties, cognitive centrality, and in-group affect.

At the time of data collection for the present study, the Spanish version by López-Gajardo (2024) had not yet been published, and so we were not aware of its existence. Consequently, for this study, the English version was translated into Spanish following the back-translation procedure (e.g., Hambleton et al., 2005). Three native Spanish speakers translated the original version of the SIQS into Spanish in collaboration with an experienced sport psychologist. Subsequently, discrepancies and nuances were discussed to develop a primary version of the questionnaire. In addition, the SIQS was reviewed by three expert judges for item-structure fit, syntactic and semantic adequacy, and appropriateness for the target age group (i.e., adolescence). Current recommendations from the International Test Commission were followed throughout this process (ITC, 2018). Finally, the SIQS was administered to a pilot sample of 309 adolescent basketball players between 13 and 19 years of age ($M = 16$ years, $SD = 1.70$) to ensure that participants could complete it without difficulty. The single-factor model showed satisfactory fit ($\chi^2(27) = 176.84$, CFI = .96, TLI = .95, RMSEA = .13, CI$_{90\%}$ = [.11,.15], SRMR = .08; $\omega = .87$). For this study, the single-factor model showed adequate fit ($\chi^2(27) = 575.76$, CFI = .94, TLI = .92, RMSEA = .18, CI$_{90\%}$ = [.16,.18], SRMR = .09; $\omega = .89$). The three-factor model also showed satisfactory values ($\chi^2(24) = 74.17$, CFI = .99, TLI = .99, RMSEA = .06, CI$_{90\%}$ = [.04,.07], SRMR = .04; ω range between .78 and .87). Bruner and Benson (2018) stated that a global measure representing social identity as a whole could be used. In view of the satisfactory fit of both the unidimensional and three-factor models, and in light of the

endorsement of previous literature, the parsimony criterion and the objectives of this study, the decision was taken to use a total score for the SIQS (single factor model). Higher self-reported scores on this scale would thus indicate a greater perception of social identity.

Although the original English version of the SIQS was structured using a 7-point Likert scale, the Spanish version developed for this study was administered using a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), in order to facilitate intra-study comparison, that is, to enable mean comparison between variables in the same study. Furthermore, using a response scale that does not incorporate a mid-point avoids the issue of mid-points being selected for reasons such as indifference or ambivalence, as opposed to indicating moderate levels of the trait (Brown & Shulruf, 2023).

Transformational coaching perceptions were measured using the Spanish version (TCQ; Alvarez et al., 2018) of the Transformational Teaching Questionnaire (TTQ; Beauchamp et al., 2010) adapted to the sports context. The stem and some items were modified to assess athletes' perceptions of their coaches' transformational leadership, as in previous research (Stenling & Tafvelin, 2014). The TCQ begins with the stem "My coach …". It contains 16 items divided into four subscales (containing four items each) designed to measure idealized influence (e. g., "Acts as a person that I look up to"), inspirational motivation (e.g., "Treats me in ways that build my respect"), intellectual stimulation (e.g., "Gets me to question my own and others' ideas"), and individualized consideration (e.g., "Shows that s/he cares about me"). Responses are given on a 6-point Likert scale ranging from 1 (*not at all*) to 6 (*frequently*). A total score for transformational coaching style was estimated, such that the higher the self-reported score on the TCQ, the more the transformational coaching style was perceived. For this study, the single-factor model showed satisfactory fit ($\chi^2(104) = 620.32$, CFI = .99, TLI = .99, RMSEA = .09, CI$_{90\%}$ = [.08,.09], SRMR = .05; $\omega = .94$). The four-factor model also showed satisfactory values ($\chi^2(98) = 502.72$, CFI = .99, TLI = .99, RMSEA = .08, CI$_{90\%}$ = [.07,.09], SRMR = .04; ω range between .77 and .88), suggesting that either model can be employed depending on the research question. In line with previous research (García-Esteban et al., 2023), the single-factor model was used in the present study.

Athletes' perceptions of transformational parenting were assessed using the Transformational Parenting Questionnaire (TPQ; Morton et al., 2011) in its Spanish version (Alvarez et al., 2019). The TPQ begins with the stem: My father/guardian … ' in the fathers' version, and 'My mother/guardian … ' in the mothers' version. Athletes completed separate TPQs for each parent/guardian (maximum of two). The TPQ measures the four dimensions of transformational parenting (i.e., idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration). It is composed of 16 items rated on a 6-point Likert scale ranging from 1(*strongly disagree*) to 6 (*strongly agree*): "Behaves as someone that I can trust" (idealized influence), "Treats me in ways that build my respect for him/her" (inspirational motivation), "Shows respect for my ideas and opinions" (intellectual stimulation), and "Shows comfort and understanding when I am upset/frustrated" (individualized consideration). Based on previous research (Alvarez et al., 2019), an overall transformational parenting score was calculated

by estimating the average score on all the items, with higher scores suggesting a higher level of transformational parenting. For this study, the single-factor model for the mothers' version showed satisfactory fit ($\chi^2(104) = 140.70$, CFI = .99, TLI = .99, RMSEA = .02, $CI_{90\%}$ = [.01, .03], SRMR = .04; ω = .95). The four-factor model for the mothers' version also showed satisfactory values ($\chi^2(98) = 84.17$, CFI = 1.00, TLI = 1.00, RMSEA = .00, $CI_{90\%}$ = [.00,.01], SRMR = .03; ω range between .79 and .91), suggesting that the different options can be employed depending on the research question. The single-factor model for the father's version showed satisfactory fit ($\chi^2(104) = 215.41$, CFI = .99, TLI = .99, RMSEA = .04, $CI_{90\%}$ = [.03,.05], SRMR = .04; ω = .96). The four-factor model for the father's version also showed satisfactory values ($\chi^2(98) = 124.03$, CFI = .99, TLI = .99, RMSEA = .02, $CI_{90\%}$ = [.01,.03], SRMR = .03; ω range between .83 and .90), suggesting that the different options can be utilized depending on the research question. As in prior literature (Alvarez et al., 2019), the single-factor model was used in the present study.

2.3. Procedure

This study was conducted in accordance with the Declaration of Helsinki and the guidelines of the American Psychological Association (APA), and it was approved by the Responsible Conduct in Research Committee of the Faculty of Psychology at the University of Buenos Aires (Ref.: UBA-05-21). Convenience team sports clubs and coaches were contacted by telephone and through personal interviews. The researchers informed them of the study characteristics, requesting their collaboration. After institutional approval, parents (of athletes under 16 years old) and participants provided informed consent. Adolescent athletes voluntarily and anonymously completed the questionnaires during a 20-min period after practice at the beginning of the sport season (from March to May 2022). Researchers were present to provide instructions and clarify any doubts during data collection. A report on the general research findings was sent to coaches and managers. At all stages of the study, participants could not be identified.

2.4. Data analysis

In the present study, the percentage of missing data was less than 5%, which suggests that it was not likely to be a serious problem (Graham & Hofer, 2000). A confirmatory factor analysis (CFA) was performed to assess the internal structure of the SIQS, TTQ, and TPQ, testing both unidimensional and multidimensional models (see Instruments section). Unweighted least squares were used, according to the ordinal scale of the instrument and the sample size. CFI and TLI values > .90 and RMSEA and SRMR <.08 indicate a good model fit. The internal consistency of the scale was estimated using the omega coefficient (ω). In addition, evidence of validity was tested by considering the relationship (Pearson correlation coefficient) between transformational leadership and social identity. The p-values were adjusted using Bonferroni's method and Cohen's (1992) criteria for correlation coefficients as effect sizes. The latter defines a small effect size was defined as $r \geq .10$ and <.30, a medium effect as $r \geq .30$ and <.50, and a large effect as $r \geq .50$.

Based on recommendations from the literature (Arnett, 2012), the stages of adolescence were classified into early (12–15 years) and late (16–18 years). Measurement invariance of the SIQS across gender and adolescent stage was tested using a multigroup confirmatory analysis. Configural, metric, and scalar invariance were tested by examining changes in model fit (ΔCFI $\leq$.01; ΔTLI $\leq$.01). Comparison between groups (gender and adolescent stages) for all variables was performed using Student's t-test.

The structural invariance of the hypothesized model for gender and adolescent stage was analyzed in two steps. First, the factor structure was analyzed without parameter restrictions (unconstrained baseline model). Second, the full invariance model was compared to the baseline model, where equality in all parameters in the two samples is assumed.

The gender analysis model used the stages of adolescence variable as a control variable, whereas the stages of adolescence analysis model used gender as a control variable (see Fig. 1). The model test command in Mplus and the corresponding Wald test were performed to analyze co-efficient differences within each model. All analyses were conducted using Mplus version 6.12 and SPSS 25.0. Statistical significance was set at .05 for all the analyses.

3. Results

3.1. Evidence of validity of the SIQS

Table 1 shows the descriptive statistics and item-factor loadings for all the Spanish SIQS responses. Item factor loadings presented satisfactory and statistically significant values ($p < .01$) for the unidimensional model.

CFA results (see Table 2) support strong measurement invariance for both comparison groups (gender and adolescent stage), given that the fit indices did not worsen significantly despite the constraints added. It is appropriate to compare construct scores directly when there is measurement invariance between two groups.

Differences according to gender were found, with males reporting

Table 1
Descriptive statistics and item-factor loadings for all social identity questionnaire responses.

Items	M (SD)	Skewness	Kurtosis	Factor loadings
1. I feel strong ties to other members of this team [Me siento muy unido/a con los/as miembros de este equipo]	4.94 (1.10)	−0.96	0.53	.77
2. I find it easy to form a bond with other members in this team [Me resulta fácil crear vínculos con los/as miembros de este equipo]	4.91 (1.25)	−1.17	0.82	.58
3. I feel a sense of being "connected" with other members in this team [Me siento "conectado/a" con los/as miembros de este equipo]	4.80 (1.21)	−0.90	0.28	.81
4. Overall, being a member of this team has a lot to do with how I feel about myself [En general, ser miembro de este equipo tiene mucho que ver con cómo me siento conmigo mismo/a]	4.49 (1.30)	−0.80	0.16	.56
5. In general, being a member of this team is an important part of my self-image [En general, ser miembro de este equipo representa una parte importante de cómo me veo]	4.46 (1.36)	−0.79	0.03	.57
6. The fact that I am a member of this team often enters my mind [Ser parte de este equipo suele estar presente en mi mente]	4.96 (1.18)	−1.34	0.16	.59
7. In general, I am glad to be a member of this team [En general, estoy contento/a por ser miembro de este equipo]	5.34 (.96)	−1.93	4.68	.76
8. I feel good about being a member of this team [Ser miembro de este equipo me hace sentir bien]	5.31 (.97)	−1.61	2.78	.80
9. Generally, I feel good when I think about myself as a member of this team [Generalmente me siento bien cuando pienso en mí mismo/a como miembro de este equipo]	5.02 (1.10)	−1.13	1.01	.63

Note. Range variable 1–6.

Table 2
Measurement invariance of the SIQS for gender and adolescent stage.

Model description	χ^2	df	CFI	TLI	RMSEA	ΔCFI	ΔTLI
Gender							
Baseline Males	37.29	24	.993	.990	.043		
Baseline Females	38.92	24	.998	.997	.042		
Configural invariance	76.21	48	.997	.996	.042		
Metric invariance	199.08	56	.985	.980	.088	−.012	−.016
Scalar invariance	202.68	61	.985	.982	.084	.000	.002
Adolescent stage							
Baseline early	42.45	24	.997	.995	.042		
Baseline late	42.07	24	.995	.992	.050		
Configural invariance	84.51	48	.996	.994	.048		
Metric invariance	134.57	56	.991	.989	.066	−.005	−.005
Scalar invariance	141.92	61	.991	.989	.064	.000	.000

Note. χ^2 = chi square, *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; Δ = fit index variation.

higher levels of social identity and transformational leadership from both coaches and parents (mothers and fathers) compared to females. Moreover, early adolescence presented significantly higher levels of social identity and transformational coaching than late adolescence (see Table 3).

As expected, results showed that social identity had a positive and significant correlation ($p < .01$) with transformational coaching ($r = .38$), as well as with the transformational leadership of both mothers ($r = .33$) and fathers ($r = .26$), providing evidence of validity.

3.2. The hypothesized model

The results of the multi-sample invariance of the hypothesized model for gender and adolescent stage showed that the compared models had acceptable fit indices, and that there were significant differences between the unconstrained and fully constrained models (see Table 4). This result supports the conclusion that there is no hypothesized model invariance based on the gender or stage of adolescence.

Results showed that female and male players' perceptions of their coach's transformational leadership and their mother's transformational parenting were positively related to their social identity. The association between fathers' transformational parenting and players' social identity was not significant for females or males (see Table 5). There was no significant difference in the associations between the transformational leadership of the coach and that of the mother with respect to the social identity of females (beta difference = −.035, $p = .678$) or males (beta difference = .148, $p = 103$). The model explained 20% of the variance in social identity for females and 25% of the variance for males.

The results also showed that, for early and late adolescents, perceptions of their coach's transformational leadership and their mother's transformational parenting were positively related to their social identity (see Table 5). For early adolescents, perceptions of their father's

Table 4
Results of the multi-sample invariance analysis of the hypothesized model for gender and adolescent stage.

Models	χ^2	df	CFI	TLI	RMSEA	ΔCFI	ΔTLI
Gender							
Unconstrained model	164.77	8	1.000	1.000	.000		
Fully constrained model	164.77	8	.982	.964	.046	.018	.036
Adolescent Stage							
Unconstrained model	171.37	8	1.000	1.000	.000		
Fully constrained model	171.37	8	.980	.960	.050	.020	.040

Note. χ^2 = chi square, df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; Δ = fit index variation.

transformational parenting were also positively related to their social identity. There were no significant differences in the associations between the transformational behaviors of the coach and the mother and the social identity in early (beta difference = .076, $p = .370$) or late adolescent stages (beta difference = −.053, $p = .547$). However, for early adolescents, the difference in the associations between the transformational behaviors of the coach and father was significant (beta difference = .076, $p = .015$). The model explained 28% of the variance in social identity for early adolescents and 17% of the variance for late adolescents.

4. Discussion

This study provided evidence for measurement invariance across gender and adolescent stage of the adapted Spanish version of the Social Identity Questionnaire for Sport (SIQS). Additionally, the findings showed that gender and adolescent stage influence the relationships between coaches' transformational leadership and athletes' social identity, as well as between mothers' and fathers' transformational leadership and their adolescent children's social identity. Specifically, coaches and mothers had a significant influence on their adolescent athletes/children's social identity across all the groups examined (i.e., female, male, early and late adolescence), whereas fathers only showed an influence on their children's social identity in the early adolescent stage. These findings provide further insight and expand the previous understanding of the relationship between transformational leadership and social identity in sports.

Overall, the adapted Spanish version of the SIQS exhibited excellent psychometric properties. Our study provides new evidence supporting the SIQS's functionality in both uni- and multidimensional structures in Spanish-speaking athletes, which aligns with the findings of López-Gajardo et al. (2024). However, this study focuses specifically on adolescent athletes, as in the original version by Bruner and Benson (2018), and it extends the application of the SIQS to a broader range of

Table 3
Descriptive Statistics and t-Difference Test for Study Variables According to Gender and Adolescent Stage.

	Females (*n* = 357)	Males (*n* = 299)	*t*	Early adolescence (*n* = 354)	Late adolescence (*n* = 302)	*t*
	M (*SD*)	*M* (*SD*)		*M* (*SD*)	*M* (*SD*)	
Social identity	4.79 (0.91)	5.06 (0.69)	−4.26**	4.98 (0.85)	4.83 (0.79)	2.33*
	4.63 (0.99)	4.90 (0.81)	−3.88**	4.86 (0.91)	4.62 (0.92)	3.37**
TF Coaching						
	5.40 (0.82)	5.59 (0.55)	−3.33**	5.49 (0.71)	5.48 (0.72)	0.22
TFP Mothers						
	5.19 (0.96)	5.45 (0.75)	−3.85**	5.32 (0.87)	5.30 (0.89)	0.25
TFP Fathers						

Note. Range variables = 1–6; TF = Transformational; TFP = Transformational Parenting.
**$p < .01$, *$p < .05$.

Table 5

Standardized Results of Unconstrained Model for Gender and each Adolescent Stage.

Model description	Estimate	SE	*p*-value	R^2 Social identity
Gender				
Females				.20**
Transformational coach – Social identity	.267	.047	.000	
Transformational parenting mother – Social identity	.254	.061	.000	
Transformational parenting father – Social identity	.088	.062	.153	
Adolescent stage	−.009	.048	.848	
Males				.25**
Transformational coach – Social identity	.405	.048	.000	
Transformational parenting mother – Social identity	.159	.058	.006	
Transformational parenting father – Social identity	.023	.058	.686	
Adolescent stage	−.114	.051	.025	
Adolescent Stage				
Early adolescence				.28**
Transformational coach – Social identity	.331	.045	.000	
Transformational parenting mother – Social identity	.196	.057	.001	
Transformational parenting father – Social identity	.131	.058	.023	
Gender	.117	.046	.011	
Late adolescence				.17**
Transformational coach – Social identity	.277	.051	.000	
Transformational parenting mother – Social identity	.266	.064	.000	
Transformational parenting father – Social identity	−.020	.065	.763	
Gender	.051	.054	.341	

Note. The model for gender used adolescent stage as a control variable and the model for adolescent used gender as a control variable and. *SE* = standard error. **$p < .01$.

team sports (i.e., basketball, field hockey, rugby, volleyball). Moreover, results of measurement invariance testing showed that the questionnaire performs satisfactorily across genders and is valid for both early and late adolescents. Positive and moderate associations were found between transformational leadership (i.e., coaching and parenting) and adolescent athletes' social identity, supporting previous research (García-Esteban et al., 2023; Tse & Chiu, 2014) and providing evidence of the scale's validity.

To our knowledge, this study is the first to simultaneously examine coaches' and parents' transformational leadership in the development of social identity in adolescent athletes. When exploring gender differences in perceptions of transformational leadership, male athletes perceived their coach, mother, and father as more transformational than female athletes did. These results are in line with previous literature (Cronin et al., 2015) that reported that male athletes perceived transformational behaviors in their coaches more frequently than female athletes did. Similarly, males perceived social identity to a greater extent. As Bruner, Sutcliffe, et al. (2020) noted, the literature on social identity and team processes has not yet explored the relevance of individual differences (such as gender), which limits the ability to contrast our results. Gender-based differences in sport socialization (Cormack & Hand, 2020) may explain our results. Thus, coinciding with certain gender stereotypes, sports tend to be considered a masculine domain, which leads to males being socialized as better suited to sport (Dorsch et al., 2021). Such stereotypes may influence the way people are introduced to and perceive themselves in sports, which may in turn affect their attachment and willingness to participate (e.g., Chalabaev et al., 2013).

In relation to the stage of adolescence, early adolescents perceived

higher levels of transformational coaching and social identity, whereas no differences were found for transformational parenting. During this stage, sports become a predominant activity, leading to a higher degree of involvement in sports (Batista et al., 2019). Thus, younger athletes may benefit from a more favorable environment for positive development due to experiencing less pressure and lower expectations about sports performance and success.

The results of the multi-sample invariance test of the proposed model for gender and stage of adolescence showed that the associations between the coach's transformational leadership and transformational parenting and social identity varied significantly across male and female athletes, as well as in early and late adolescent stages. Specifically, the coach's transformational leadership significantly predicts athletes' social identity across genders and adolescent stages. Transformational coaches are usually accurate in promoting team dynamics, given that they are essential actors not only in organizing and structuring training sessions and matches, but also in fostering positive peer relationships and promoting attitudes and values that place the collective over the individual (Lawrason et al., 2020). These findings are consistent with those from previous studies conducted in the Spanish context (García-Esteban et al., 2023), which emphasized the positive influence of transformational coaches on the development of social identity in adolescent basketball players.

In terms of transformational parenting, mothers predicted their children's social identity levels across genders and adolescent stages, whereas fathers only have an influence on the social identity of the youngest adolescents (i.e., early adolescence). It is well documented that warm and supportive parent–child relationships foster successful identity development (Crocetti et al., 2017). There is also evidence to suggest that mothers play a particularly influential role in this process (Crocetti et al., 2022). Mothers often assume a facilitating role (Coakley, 2006) that is enhanced by the unconditional support perceived by young athletes (Palomo-Nieto et al., 2011). This child-mother bond acts as an "umbrella" that encompasses emotional, logistical, and economic support behaviors that are essential for optimal development (Palomo-Nieto et al., 2011). Maternal involvement is especially esteemed for its positive effects on youth development through sports (Dorsch et al., 2020). For example, Alvarez et al. (2019) found that transformational parenting is associated with lower burnout among adolescent athletes, particularly when mothers provide autonomy support, thus mediating this relationship. This finding illustrates the differential contribution of positive maternal behaviors in the psychological development of their children. In Spanish-speaking cultures, particularly in Argentina, mothers are often the central figures in the family, playing an active role in organizing and providing emotional support for their children's activities (Richaud de Minzi et al., 2014).

In relation to fathers' influence, they have traditionally been more involved in their children's sporting activities throughout all the stages of sport development (Coakley, 2006). According to Côté (1999), younger athletes are more likely to be influenced by their parents. As athletes get older, parental influence decreases, and coach influence increases.

When analyzing which agent has the greatest influence on the social identity of the athletes/children, our results show that there are no differences based on gender or age in the way athletes perceive their coaches and mothers as agents of influence on their social identity. Nevertheless, the only difference between agents of influence on social identity appears between coaches and fathers in the younger age group, with fathers having less influence on social identity than the coach. Murray et al. (2020) suggested that coaches exert a greater influence on adolescents when considering the relationships between transformational leadership (coaches and parents) and sport outcomes (such as performance). Consequently, it seems reasonable to consider that team variables (i.e., social identity) may be more closely associated with the agent who is more related to the team (i.e., the coach).

These results have implications for designing interventions to

promote adolescents' positive experiences through the influence of social agents in sport. We suggest that the tenets of the transformational leadership framework should be considered a means of promoting social identity within sport teams. This approach could serve to regulate and foster self-regulation within teams, not only to increase positive experiences that may in turn promote engagement and wellbeing, but also to use this social identity to promote fair play and other values that are relevant to the team.

Despite these contributions, the cross-sectional design employed in this study represents one of its primary limitations. Longitudinal studies are essential for assessing changes over time (Graupensperger et al., 2020) in order to better understand the psychosocial factors (i.e., transformational leadership) that influence the trajectory of social identity and identify the implications for positive sport experiences (Bruner et al., 2022; Häusser et al., 2022). It would be valuable to gain insights by exploring the developmental trajectory in longitudinal research. Furthermore, coaches and parents should be encouraged to share their own perspectives. This might be achieved through the use of different methodologies (e.g., mixed methods, interviews, focus groups, and observation; Dorsch et al., 2021; Raimundi et al., 2023) that can shed light on the nuances in the mechanisms that explain how social identity is built.

An additional limitation of the present study is the composition of the sample, which is exclusively comprised of athletes engaged in team sports. In accordance with previous literature (e.g., Stephen et al., 2023), it would be advisable to examine social identity development in athletes engaged in individual sports as well as those participating in team sports.

Although the models hypothesized in this study are statistically significant, the percentage of explained variance is moderate. Therefore, further investigation of additional antecedents would be beneficial in order to gain more comprehensive insight into the development of social identity in adolescent athletes. We suggest continuing to explore the role of athletes' dispositional variables (e.g., personality traits, motivation) and contextual antecedents in both the team and family (e.g., autonomy-supportive vs. controlling styles), as well as relationships with significant others (e.g., teammates and siblings) that were not considered in this study.

5. Conclusions

This research contributes to the study of the relationship between the transformational leadership of coaches, mothers, and fathers and social identity at a specific level (i.e., gender and adolescent stage). This study offers valuable insight into the complexity of the processes that occur as a result of sport practice. It emphasizes one of the main missions of coaches: to assume the role of leader and promote a culture of collaboration and teamwork within the team. Coaches who practice transformational leadership are able to accomplish this by establishing specific goals and roles for each athlete, embodying key values such as inclusion, respect, and cooperation, and valuing the contribution of each athlete to the overall success of the team. By fostering dialogue and open communication among team members, coaches can encourage active participation from all team members. The adoption of these behaviors can increase the likelihood of athletes prioritizing team success (We) over individual success (I). Our research points out that this role of the coach is important for adolescent athletes, regardless of their gender or adolescent stage.

The findings of this study support the assertion that the family is a crucial context for understanding how athletes develop their social identity. In particular, transformational parenting has been identified as an effective parenting style for enhancing children's social identity. Furthermore, mothers demonstrated their influence across children's gender and adolescent stage, thus reinforcing the importance of their role in the process of socialization in sports. In contrast, fathers exerted influence only during the early adolescent period.

This study provides insight into how transformational parental involvement can facilitate adolescent athletes' perception of team sports as an opportunity for collective growth and learning, promoting the development of a positive social identity. From an educational approach (Knight & Newport, 2018), it would be beneficial for sport psychologists to be aware of the pivotal role that mothers play in the family in terms of promoting their children's social identity. Therefore, it may be advantageous to consider the involvement of mothers as a partner in adolescent family interventions. However, it is important to note that fathers also play a significant role, specifically for younger adolescents.

The Spanish version of the SIQS (Bruner & Benson, 2018) exhibited satisfactory measurement invariance, indicating that it can be used to assess social identity in adolescent athletes across genders and adolescent stages.

CRediT authorship contribution statement

Ignacio Celsi: Writing – review & editing, Writing – original draft, Visualization, Software, Resources, Project administration, Methodology, Funding acquisition, Data curation, Conceptualization, Formal analysis. **María Julia Raimundi:** Writing – review & editing, Visualization, Resources, Project administration, Funding acquisition, Conceptualization, Writing – original draft, Supervision, Methodology, Investigation, and Data curation. **Juan Facundo Corti:** Writing – review & editing, Software, Resources, Methodology, Data curation, Conceptualization, Writing – original draft, Visualization, Project administration, Investigation, Formal analysis. **Isabel Castillo:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization, Writing – original draft, Visualization, Resources, Formal analysis. **Octavio Alvarez:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Funding acquisition, Conceptualization, Visualization, Resources, Project administration, Investigation.

Compliance with ethical standards

The study was conducted in accordance with the Declaration of Helsinki and the American Psychological Association (APA) ethical standards. The Responsible Conduct in Research Committee of the Faculty of Psychology at University of Buenos Aires reviewed and approved the development of this study (Ref. UBA-05-2021). Written informed consent was obtained from all subjects involved in the study, and parental consent was obtained for players under 16 years of age, in accordance with current Argentine legislation.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

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