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A longitudinal examination of the influence of winning or losing with motivational climate as a mediator on enjoyment, perceived competence, and intention to be physically active in youth basketball

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ABSTRACT

Background: In basketball, children's main reason for playing is to have fun, whereas outcomes such as skill acquisition and long-term development are often perceived by adults as the main motive for children's engagement in sport. However, no studies have yet examined whether the game outcome could influence motivational variables longitudinally over the course of a season. The novelty of the present study resides in the longitudinal exploration, the multilevel approach, and the analysis of motivational climate as a mediator variable between game outcome and enjoyment, perceived competence, and intention to be physically active.

Purpose: The purpose of this study was to analyze whether under-12 basketball players' who won versus lost games had different perceptions of their enjoyment, perceived competence, and intention to be physically active throughout a season, considering motivational climate as a mediator.

Method: The participants were 94 boys and two girls from eight basketball clubs ($M_{age} = 9.72$ years, $SD = 1.70$ years, age range = 9–11 years). The study followed a six months longitudinal design. The independent variable was the game outcome (win-loss). The dependent variables were enjoyment, perceived competence, and intention to be physically active. Motivational climate was a mediator variable. Data were collected at the end of each of the 56 games throughout 14 game days over a basketball formal season. Longitudinal multilevel regression analysis was conducted within player-level and between player-level with the repeated measures representing the game-to-game variability.

Results: We found that at the within player level, motivational climate mediated the effect of game outcome as follows. On game days, when the game is won, players perceive the climate as more ego-related, which in turn reduced enjoyment and increased perceived competence. On game days, when the game is lost, players perceive the climate as more task-related, which in turn increased enjoyment, perceived competence, and intention to be physically active.

Conclusion: Game outcomes did not directly affect players' feelings, but motivational climate mediated the effect between game outcomes and motivational elements within players throughout a season. This study shows that the competitive nature of sport is not a deterrent to youth

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positive experiences provided adults minimize the emphasis of game outcomes over personal factors such as competence and enjoyment, through motivational climate.

55 One of the main aims of youth sport is to promote an active lifestyle that can be sustained throughout development. In doing so, sport pedagogy research focuses on the variables that are promoting short and long-term participation (Galatti et al. 2016). Under this perspective, competition and the results of competitive contests constitute one of these variables that affect youth engagement and young athletes' motivation in sport (McCalpin, Evans, and Côté 2017). In fact, game outcomes represent an important factor that has been positively associated with athletes' experience and coaching effectiveness (Horn 2008). Some studies suggest that coaches may prioritize the result of the game (e.g. winning) due to social pressure from clubs, parents, or peers often at the cost of long-term athletes' engagement (Galatti et al. 2016; Logan and Cuff 2019). Nevertheless, it is well documented that adults and youth motivation to be involved in sport are not always aligned (Vazou 2010; Wall et al. 2020). More specifically, in basketball, children's main reason for playing is to have fun, whereas outcomes such as skill acquisition and long-term success are perceived by adults as the main motive for children's engagement in sport (DiFiori et al. 2018; Visek et al. 2015). Considering that basketball is one of the most practiced sport worldwide, the purpose of this study was to analyze whether under-12 basketball players' who won versus lost games had different perceptions of their enjoyment, perceived competence, and intention to be physically active throughout a season, considering motivational climate as a mediator.

75 According to the achievement goal theory (AGT), motivation encompasses either a task or ego climate (Nicholls 1984). When a task climate is more prominent, players are focused on their own learning and when ego climate is more prominent, players are centered on winning and comparing themselves to others (Boixadós et al. 2004; Van Puyenbroeck, Stouten, and Vande Broek 2019). Generally, studies show that players' perception of task climate is positively associated with quality experiences in sport and intrinsic motivational elements, that include enjoyment, perceived competence and intention to be physically active (Alesi et al. 2019; Gjesdal, Appleton, and Ommundsen 2017; Harwood et al. 2015; Nicholls 1984). On the contrary, players' perception of ego climate is related with the demonstration of ability, frustration, competition, and negative motivational outcomes (García-González et al. 2019; Gjesdal et al. 2019; Nicholls 1984).

85 At the level of the person, self-determination theory (Deci and Ryan 1985) states that continued engagement in an activity depends on extrinsic or intrinsic motives. While extrinsic motivation refers to a drive that results from external elements, intrinsic motivation refers to engagement motives that are inherently interesting or enjoyable. Enjoyment and perceived competence are the most powerful variables that positively influence intrinsic motivation (McAuley, Duncan, and Tammen 1989; Deci and Ryan 1985). On the one hand, enjoyment is the perception of pleasure and satisfaction that someone has with an activity. It involves a cognitive evaluation of personal, social-environmental and cultural factors (Deci and Ryan 1985). On the other hand, perceived competence refers to how skilled a person perceives oneself to perform in a particular situation. It is a consequence of social comparison, outcomes, and internal factors (Deci and Ryan 1985). In order to provide a positive experience in sport, enjoyment and perceived competence are key motivational elements. Children who enjoy and show high perceived competence doing sport present great disposition to continue practicing sport (Hopple 2018; Sánchez-Oliva et al. 2020; Witt and Dangi 2018). Furthermore, enjoyment and perceived competence are motivational elements negatively correlated with dropping out (Corr, McSharry, and Murtagh 2018; Gardner, Magee, and Vella 2017).

100 Following AGT and self-determination theories, the motivational climate generated by adults, particularly coaches and parents, plays an important role in whether youth have a positive

experience in sport (Curran et al. 2015). More particularly, how adults influence young people's beliefs about the outcome of a competitive event will influence their perceptions of enjoyment and competence (Miller, Roberts, and Ommundsen 2004). In other words, the outcomes of a game greatly influence the motivational climate promoted by coaches and can affect youth athletes differently. As such, motivational climate can be considered as a mediator between game outcomes (win/loss) and young athletes' perception of enjoyment, perceived competence, and intention to be physically active (Cumming et al. 2007). In fact, motivational climate has been previously used as a mediator variable to better understand the motivational elements that impact sport participation (e.g. Madjar, North, and Karakus 2019; Van Puyenbroeck, Stouten, and Vande Broek 2017).

Few studies have obtained positive associations between winning and positive emotions, enjoyment and intention to be physically active (Baker-Ward, Eaton, and Banks 2005; Bakker et al. 2011). Nevertheless, more studies showed no relation between winning and fun, enjoyment, perceived competence, and motivational climate (Brustad 1988; Breiger et al. 2015; Cumming et al. 2007; Wankel and Sefton 1989). In a study that explores the effect of winning or losing on emotions, Baker-Ward, Eaton, and Banks (2005) interviewed 9-12-years-old soccer players at the end of a season and showed that winners retrospectively recalled more positive emotions than losers. Similarly, Bakker et al. (2011) reported higher enjoyment and intention to be physically active in the future when 14-18-years-old soccer players won games. In a study conducted more than 30 years ago, Wankel and Sefton (1989) showed that personal achievement was more important than winning as a predictor of fun in ice hockey players (7-15 years old). Around the same time, Brustad (1988) showed that in basketball, winning did not predict enjoyment and perceived competence before a practice session of 9-13-years-old players. Similarly, Cumming et al. (2007) reported that winning did not correlate with the motivational climate and enjoyment, after a recreational basketball season (10-15 years). In an extension of the previous study, Breiger et al. (2015) confirmed the noncorrelation between winning and motivational climate adding that winning exhibited stronger relations to attitudes for boys than girls. Although these studies show no association between winning and motivational indicators, the design did not allow the authors to examine the season-long effect of winning and losing on the sport experience of young athletes such as motivational climate, enjoyment, and competence (Baker-Ward, Eaton, and Banks 2005; Bakker et al. 2011; Breiger et al. 2015; Brustad 1988; Cumming et al. 2007; Wankel and Sefton 1989).

Although previous studies analyzed the relationship between game outcomes and motivational elements, none of them explored their association, following a longitudinal design at intra- and inter-player level. Consequently, the present study was guided by two research question: To what degree can game-to-game outcome variability throughout a season explain players' enjoyment, perceived competence and intention to be physically active? What is the effect of motivational climate as mediator variable between game outcome and enjoyment, perceived competence and intention to be physically active?

Considering the longitudinal design, we followed a multilevel modeling as a method of choice to analyze nested data structures that determine the game to game variance within player and between player variance (Hox, Moerbeek, and Van de Schoot 2017; Peugh and Enders 2005). Following the multi-level techniques presented by Krijgsman et al. (2019), we considered this a more exploratory analyses, addressing the research question at the intra-individual level (i.e. within players from game-to-game) and inter-individual (i.e. between players from game-to-game). In practical terms, this analysis allowed us to know whether some players were more easily influenced by game outcomes than other. Similarly, this technique, allowed us to shed light on whether or not there were differences between players regarding how game outcomes influenced them (Delrue et al. 2017).

Based on cross-sectional studies conducted in youth basketball (e.g. Breiger et al. 2015; Brustad 1988; Cumming et al. 2007), we expected that variability in game outcomes throughout a season would explain the positive variability in players' experiences of enjoyment, perceived competence, and intention to be physically active on a game to game basis (Baker-Ward, Eaton, and Banks 2005;

Bakker et al. 2011; Wankel and Sefton 1989). From previous studies, we hypothesized that motivational climate could mediate between game outcome and motivational elements (experiences of enjoyment, perceived competence, and intention to be physically active; Madjar, North, and Karakus 2019; Van Puyenbroeck, Stouten, and Vande Broek 2017).

Method

Research design

The study followed a longitudinal design to investigate differences between winning and losing players in youth basketball. The independent variable was the game outcome (win-loss). The dependent variables were the motivational elements: enjoyment, perceived competence, and intention to be physically active. Motivational climate was a mediator variable. Data were collected at the end of each of the 56 games throughout 14 game days over a basketball season.

Participants

Eight basketball clubs consisting of a total of 96 players took part in the study, which were located in Spain. The participants' inclusion criterion was that the players participated a minimum of two complete quarters in each game. The participants were 94 boys and two girls ($M_{age} = 9.72$ years, $SD = 1.70$ years, age range = 9-11 years), Caucasian, from moderate-to-high level socioeconomic status, educational attainment. All players had been involved in basketball in an organized league for an average of 4.62 years ($SD = .56$). The current involvement of the players consisted of 4.5 h per week, including three practice sessions and one-hour game. The players belonged to the high ability level teams in their age range according to their competition levels. Each team had the same coach during the season. Players' parents, coaches, and board of the basketball clubs completed informed consent forms (giving right to withdraw and confidentiality), and players provided their assent before the investigation. The author's University's Research Ethics Committee approved the study and it was performed according to the Helsinki Declaration.

Procedure

Data were collected throughout the 2012/2013 basketball formal season from November to April. Each participant completed the questionnaires after each of the 14 games. All games were played on 14 separate Saturdays on the same indoor court. All the teams played against each other two times throughout the season. The games were played following the official rules of under-12 basketball and refereed by two professional referees. Each game consisted of six quarters of 8 min with a break of 1 min between quarters, except between third and fourth quarters which was 5 min; two time-outs were allowed in the first three quarters and another two time-outs were allowed in the last three quarters. After each game, the players completed the questionnaires about motivational climate, enjoyment, perceived competence, and intention to be physically active. The players completed the questionnaires in the presence of one of the members of the research team and in the absence of any coaching staff. The participants took approximately 20 min after the game to answer the questionnaires in the same court, before debriefing with the coach and showering. All players completed the questionnaires after all games because the research team checked them. The information of the game outcome was taken *in vivo* after each game. The record of won games was the following: Two teams won 13 games, one team won 10 games, one team eight games, three teams four games, and one team one game.

Data collection

Motivational climate

Players completed the PMCSQ-2 validated for youth players (Newton, Duda, and Yin 2000). This instrument has 17 items referring to the task climate (e.g. 'on this team, each player contributes in some important way' and 'on this team, the coach makes sure players improve on skills they're not good at'; Kaiser-Meyer-Olkin = .87; Bartlett's test of sphericity = .000; Cronbach's α = .84; McDonald's ω = .97) and 16 referring to the ego climate (e.g. 'on this team, the coach gets mad when a player makes a mistake' and 'on this team, the coach thinks only the starters contribute to the success of the team'; Kaiser-Meyer-Olkin = .85; Bartlett's test of sphericity = .000; Cronbach's α = .71; McDonald's ω = .81). Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Enjoyment and perceived competence

Players completed the enjoyment and perceived competence scale (Arias-Estero, Alonso, and Yuste 2013) adapted from the physical activity enjoyment scale (McAuley, Duncan, and Tammen 1989). This instrument has three enjoyment items (e.g. 'I enjoyed practicing basketball very much' and 'I would describe this sport as very interesting'; Kaiser-Meyer-Olkin = .74; Bartlett's test of sphericity = .000; Cronbach's α = .73; McDonald's ω = .75) and four perceived competence items (e.g. 'after practicing basketball, I felt pretty competent' and 'I think I am pretty good practicing basketball'; Kaiser-Meyer-Olkin = .83; Bartlett's test of sphericity = .000; Cronbach's α = .94; McDonald's ω = .83). Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Intention to be physically active

Players completed the intentionality of being physically active scale (Arias-Estero, Castejón, and Yuste 2013) adapted from the original version (Hein, Müür, and Koka 2004). This instrument has five items referring to the intention to continue performing basketball in the future (e.g. 'after I finish the present season, I would like to be physically active practicing basketball' and 'outside of the games, I like to practice basketball'; Kaiser-Meyer-Olkin = .73; Bartlett's test of sphericity = .000; Cronbach's α = .75; McDonald's ω = .70). Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Data analysis

Statistical analysis of the motivational climate, enjoyment, perceived competence, and intention to be physically active variables was conducted using SPSS v. 25.0 for Windows (SPSS, Inc., Chicago, IL). We determined the normality of the data through the Kolmogorov-Smirnov test, finding that the data were parametric ($p > .05$). Descriptive analyses were calculated for players of winning and losing teams by means and standard deviations. We examined whether there were significant differences for each variable on game days between players of winning teams and players of losing teams using univariate effect of variance ANOVA. Given the nested structure of the data (as the repeated-measures were nested within the players), we tested our hypotheses through multilevel modeling (Hox, Moerbeek, and Van de Schoot 2017). A two-level hierarchical linear model was used to assess the impact of game outcome on players' enjoyment, perceived competence and intention to be physically active in a season, while mediating for motivational climate. We used multilevel regression analysis with two-levels (within player-level and between player-level), with the repeated measures representing the game-to-game variability (game day nested within and between players) and two models as follow (Krijgsman et al. 2019). First, we calculated M0 as the variance of the dependent variables throughout the season. M0 is the intercept-only model that was used to compare with other models (Hox, Moerbeek, and Van de Schoot 2017). Second in M1, game outcome

was entered to determine the game to game variance within player and between player variance (dummy coded: 0 for players of losing teams and 1 for players of winning teams). Finally, we analyzed the mediational effect of motivational climate between game outcome and enjoyment, perceived competence, and intention to be physically active, using Rockwood's MLmed macro (Rockwood and Hayes in press).

Results

Descriptive statistics are presented in Table 1. Independent of whether players had lost or won the game, they showed low ego climate values and high levels of task climate, enjoyment, perceived competence, and intention to be physically active. The regression analyses show that ego climate and task climate were related negatively (Table 2). Perceived competence and intention to be physically active were related positively. Percentages of variance for ego climate, task climate, enjoyment, perceived competence and intention to be physically active were similar at within player-level and between player-level. In general, we found weak game-to-game variability in the degree to which players perceived ego climate, task climate, enjoyment, perceived competence and intention to be physically active (see the percentage of variance within and between player level, Table 2).

Adding the game outcome (M1, Table 3), no associations were found between game outcome and all the variables at within and between player-level. We found that at within player level, motivational climate mediated the effect of game outcome as follows (Table 4, Figure 1). Ego climate negatively mediated the relationship between game outcome and enjoyment ($Z = -2.11, p = .035$) and positively mediated the relationship between game outcome and perceived competence ($Z = 2.36, p = .018$). It means that on game days, when the game is won, players were more likely to perceive the climate as more ego-related, which in turn reduced enjoyment and increased perceived competence. Task climate positively mediated the relationship between game outcome and enjoyment ($Z = 2.58, p = .009$), perceived competence ($Z = 2.65, p = .008$) and intention to be physically active ($Z = 2.59, p = .010$). It means that on game days, when the game is won, players less strongly experienced the climate as task-related, which in turn increased enjoyment, perceived competence, and intention to be physically active. No mediated effect were found regarding motivational climate at between player-level.

Discussion

The objective of this study was to analyze whether under-12 basketball players' who won versus lost games had different perceptions of their enjoyment, perceived competence, and intention to be physically active throughout a season, considering motivational climate as a mediator. Given that the goal of the study was to examine the longitudinal changes over time, we used multilevel analysis. The intra- and inter-individual approaches proved to be very valuable as confirmed by high percentages of variance at the within- and between-player levels in game outcome, ego climate and task climate. Overall, contrary to our expectation based on cross-sectional studies conducted in youth basketball (Breiger et al. 2015; Brustad 1988; Cumming et al. 2007), no relations between game outcome and motivational elements (enjoyment, perceived competence and intention to be physically active) were found neither at within player-level nor at between player-level, without motivational climate as a mediator (Baker-Ward, Eaton, and Banks 2005; Bakker et al. 2011; Wankel and Sefton 1989).

As it was expected, motivational climate was a mediator variable between game outcome and enjoyment, perceived competence and intention to be physically active at within player-level (Cumming et al. 2007; Curran et al. 2015; Miller, Roberts, and Ommundsen 2004; Nicholls 1984). Following AGT theory, motivational climate orientates players' perceptions about the result of their performance (Nicholls 1984). Accordingly, Curran et al. (2015) suggested that motivational climate is likely to operate as mediator of other players' perceptions. As in Cumming et al. (2007), the

Table 1. Descriptive statistics and significant differences for each variable on game days from players of winning teams and players of losing teams.

Dependent variables	Game days	Winning		Losing		F	p	ηp^2
		M	SD	M	SD			
Ego climate	1	2.01	.53	1.89	.47	.60	.440	.01
	2	2.06	.87	1.95	.53	.25	.616	.00
	3	2.01	.68	1.76	.52	3.23	.076	.04
	4	2.05	.73	1.77	.61	3.15	.080	.04
	5	2.12	.78	1.81	.61	4.26	.043*	.05
	6	2.21	.76	1.93	.59	4.43	.038*	.05
	7	2.15	.84	2.07	.62	1.68	.198	.02
	8	2.19	.84	2.01	.65	.01	.933	.00
	9	1.98	.73	2.19	.61	3.99	.049*	.05
	10	1.88	.61	1.99	.59	.20	.656	.00
	11	1.98	.58	1.98	.69	.68	.412	.01
	12	2.01	.73	2.10	.67	2.08	.152	.02
	13	2.09	.74	1.82	.66	5.35	.023*	.06
	14	2.05	.76	1.98	.70	.29	.591	.00
Task climate	1	4.30	.57	4.34	.51	.00	.951	.00
	2	4.22	.75	4.57	.32	7.17	.009*	.08
	3	4.28	.51	4.42	.54	.94	.336	.01
	4	4.21	.66	4.47	.46	4.28	.042*	.05
	5	4.25	.59	4.39	.52	1.66	.201	.02
	6	4.29	.49	4.42	.50	1.30	.257	.02
	7	4.23	.60	4.35	.52	2.84	.095	.03
	8	4.22	.76	4.31	.65	.02	.887	.00
	9	4.19	.66	4.09	.67	5.88	.018*	.07
	10	4.51	.46	4.11	.57	8.89	.004*	.10
	11	4.43	.52	4.31	.57	1.26	.264	.01
	12	4.18	.65	4.14	.67	2.13	.148	.03
	13	4.29	.63	4.41	.58	4.53	.036*	.05
	14	4.36	.54	4.20	.62	1.22	.272	.01
Enjoyment	1	4.76	.50	4.90	.39	1.41	.238	.02
	2	4.88	.44	4.87	.35	.02	.875	.00
	3	4.85	.56	4.95	.14	.89	.347	.01
	4	4.82	.65	4.80	.58	.02	.885	.00
	5	4.82	.43	4.86	.44	.09	.763	.00
	6	4.92	.31	4.91	.28	.00	.971	.00
	7	4.81	.37	4.80	.52	.07	.795	.00
	8	4.78	.61	4.82	.50	.02	.877	.00
	9	4.81	.37	4.90	.32	1.21	.273	.01
	10	4.92	.25	4.93	.20	.19	.661	.00
	11	4.93	.29	4.91	.26	1.04	.311	.01
	12	4.83	.47	4.92	.27	.00	.960	.00
	13	4.95	.22	4.95	.16	2.11	.150	.03
	14	4.95	.19	4.96	.16	.17	.678	.00
Perceived competence	1	3.93	1.08	3.83	1.16	.34	.562	.00
	2	3.77	.91	4.04	.95	1.88	.175	.02
	3	3.91	.94	3.82	1.12	.81	.369	.01
	4	4.04	.95	3.93	1.20	.12	.728	.00
	5	3.96	1.01	3.82	1.17	.27	.604	.00
	6	4.09	.89	4.26	.94	.11	.742	.00
	7	4.04	.89	3.89	1.25	.56	.455	.01
	8	3.96	.97	3.88	1.5	2.11	.150	.03
	9	4.21	1.02	4.04	1.25	.27	.603	.00
	10	3.93	1.05	4.17	1.13	.07	.788	.00
	11	4.21	.82	4.44	.89	5.71	.019*	.06
	12	3.78	1.20	4.13	1.22	.00	.968	.00
	13	4.43	.83	4.37	.96	.46	.501	.01
	14	4.13	1.02	4.28	1.03	.37	.543	.00
Intention to be physically active	1	4.50	.60	4.67	.46	2.08	.153	.03
	2	4.43	.68	4.68	.38	.34	.561	.00
	3	4.55	.61	4.73	.36	1.18	.281	.01
	4	4.61	.69	4.53	.66	.23	.634	.00

(Continued)

Table 1. Continued.

Dependent variables	Game days	Winning		Losing		F	p	ηp^2
		M	SD	M	SD			
	5	4.52	.54	4.64	.54	1.21	.274	.01
	6	4.52	.62	4.70	.42	2.14	.147	.03
	7	4.65	.49	4.37	.80	3.85	.053	.04
	8	4.46	.68	4.58	.59	.06	.801	.00
	9	4.69	.46	4.55	.63	1.99	.162	.02
	10	4.73	.38	4.70	.51	.04	.844	.00
	11	4.78	.34	4.83	.33	5.43	.022*	.06
	12	4.59	.60	4.64	.57	.47	.495	.01
	13	4.60	.79	4.85	.29	5.39	.023*	.06
	14	4.74	.40	4.83	.28	.34	.559	.00

Note: M: mean, SD: standard deviation. * $p < .05$, ** $p < .001$.

Table 2. Mean scores, standard deviations and regressions between measured variables.

Variables	M	SD	1	2	3	4	5	6
1. Game outcome	.52	.50						
2. Ego climate	2.00	.68	.24*					
3. Task climate	4.30	.59	.02	-.52**				
4. Enjoyment	4.88	.38	.01	-.21**	.08*			
5. Perceived competence	4.05	1.04	.01	.16**	.09**	.03**		
6. Intention to be physically active	4.64	.54	.10	-.08*	.10*	.34**	.62**	
% variance within player-level			63	54	53	56	57	57
% variance between player-level			37	46	47	44	43	43

Note: M: mean, SD: standard deviation, * $p < .05$, ** $p < .001$. Winning and losing were dummy coded: 0 for players of losing teams and 1 for players of winning teams.

current study supports that game outcome is not a prerequisite for fostering motivational elements in youth basketball because the most important predictor was the coach-created motivational climate. Because of the mediator effect of motivational climate, identified in the present work, the previous positive associations made in former studies between winning and motivational elements, such as perceived competence, enjoyment and intention to be physically active, should be interpreted with caution (Baker-Ward, Eaton, and Banks 2005; Bakker et al. 2011; Wankel and Sefton 1989).

The fact that task climate increased when losing and ego climate increased when winning could be explained by how adults and public reactions interact to influence young people's beliefs regarding the outcome of a competition (Miller, Roberts, and Ommundsen 2004). For instance, effective coaches are more likely to favor players' personal development when losing, but children are under the influence of public accolades and praises when winning. Children who lack the differentiated conception of how their effort affect the outcome of a game may be overly sensitive to coaches' and public reaction following the outcome of a game (Kliethermes et al. 2020) and, therefore, directly attribute their success, or lack of, to the final score of the game because of the adults' created motivational climate. Therefore, the final score of the games did not influence players' motivational elements directly (enjoyment, perceived competence and intention to be physically active) and consequently appears to have limited consequences on players' engagement over time.

Thus, the present study adds to the existing literature in at least three ways. First, rather than examining the independent associations between game outcomes and players' motivational climate, we explored the effect of motivational climate as a mediator variable between game outcomes and enjoyment, perceived competence and intention to be physically active. Second, whereas previous studies examined the proposed associations at the between-player level, we examined these relationships as processes at both the between- and within-player level. Finally, we followed a longitudinal design used to examine the effect of winning and losing in youth sport.

Table 3. Players' enjoyment, perceived competence and intention to be physically active: Variance component model (M0) and conditional model including game outcome within player and between player (M1).

Parameter	Ego climate		Task climate		Enjoyment		Perceived competence		Intention to be physically active	
	M0a β (SE)	M1a β (SE)	M0b β (SE)	M1b β (SE)	M0c β (SE)	M1c β (SE)	M0d β (SE)	M1d β (SE)	M0e β (SE)	M1e β (SE)
Fixed part										
Intercept	2.00(.02)**	1.94(.03)**	4.31(.02)*	4.33(.03)**	4.88(.13)*	4.89(.02)**	4.06(.04)**	4.07(.05)**	4.64(.02)*	4.67(.03)**
<i>Game outcome</i>										
Within player-level		.09(.08)		$\bar{\Delta}$.14(.08)		$\bar{\Delta}$.00(.03)		$\bar{\Delta}$.02(.07)		.01(.38)
Between player-level		.11(.04)*		$\bar{\Delta}$.05(.35)		$\bar{\Delta}$.04(.07)		$\bar{\Delta}$.10(.32)		$\bar{\Delta}$.16(.18)
Random part										
σ^2 Within player-level		.22(.01)**		.26(.06)**		.12(.00)**		.49(.02)**		.20(.01)**
σ^2 Between player-level		.43(.02)**		.31(.01)**		.14(.00)**		.97(.04)**		.26(.01)**

Note: * $p < .05$, ** $p < .001$. Coefficients shown are unstandardized path coefficients (β) with standard errors (SE) reported between brackets. Winning and losing were dummy coded: 0 for players of losing teams and 1 for players of winning teams.

Table 4. Players' motivational climate mediation between game outcome and enjoyment, perceived competence and intention to be physically active.

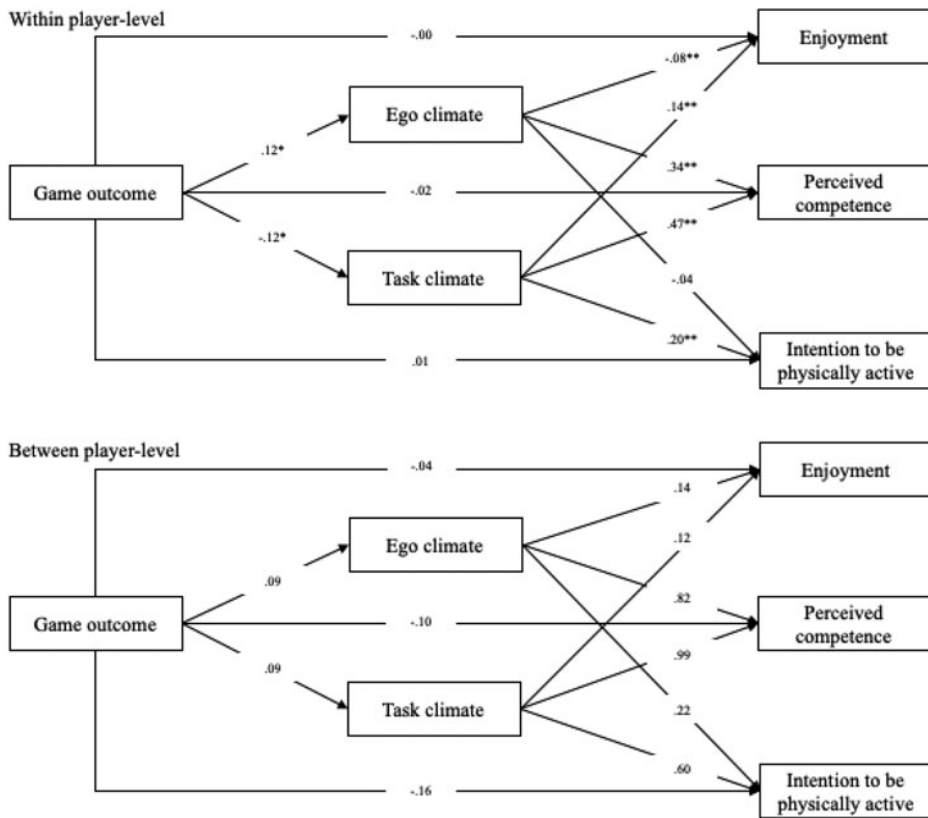
	Game outcome and mediator	Effect (SE)	t	p	CI
	Within player-level				
455	<i>Relationship between game outcome and ego climate</i>	.12(.04)	2.54	.011*	[.02, .22]
	Relationship between game outcome and enjoyment mediated by ego climate	-.08(.02)	▲4.10	.000**	[-.11, .04]
	Relationship between game outcome and perceived competence mediated by ego climate	.34(.05)	▲6.91	.000**	[.24, .44]
	Relationship between game outcome and intention to be physically active mediated by ego climate	-.04(.03)	▲1.74	.082	[-.09, .00]
460	<i>Relationship between game outcome and task climate</i>	-.12(.04)	▲2.83	.005*	[-.20, -.03]
	Relationship between game outcome and enjoyment mediated by task climate	.14(.02)	6.65	.000**	[.10, .19]
	Relationship between game outcome and perceived competence mediated by task climate	.47(.06)	8.07	.000**	[.35, .58]
	Relationship between game outcome and intention to be physically active mediated by task climate	.20(.03)	6.79	.000**	[.14, .26]
465	Between player-level				
	<i>Relationship between game outcome and ego climate</i>	.09(.26)	.36	.729	[-.55, .74]
	Relationship between game outcome and enjoyment mediated by ego climate	.14(.15)	.91	.414	[-.28, .55]
	Relationship between game outcome and perceived competence mediated by ego climate	.82(.64)	1.29	.266	[-.94, 2.59]
	Relationship between game outcome and intention to be physically active mediated by ego climate	.22(.36)	.61	.570	[-.79, 1.24]
470	<i>Relationship between game outcome and task climate</i>	.09(.27)	.32	.760	[-.58, .76]
	Relationship between game outcome and enjoyment mediated by task climate	.12(.15)	.82	.453	[-.27, .52]
	Relationship between game outcome and perceived competence mediated by task climate	.99(.61)	1.61	.179	[-.69, 2.68]
	Relationship between game outcome and intention to be physically active mediated by task climate	.60(.35)	1.70	.163	[-.37, 1.56]

475 Note: SE: standard error. * $p < .05$, ** $p < .001$. CI: confidence interval.

480 The results of the present study should be interpreted with caution because of the players' high level of specialization and ability, the self-reported nature of motivational climate, the lack of information on how coaches interacted with players after winning or losing, the team variation with regard to game outcomes, and the absence of control for the team level given that only eight teams were involved. In addition, given that almost all the participants in the current study were male basketball players, caution is warranted when generalizing the results to non-basketball contexts and females. Future studies should examine how age and gender may influence different motivational outcomes. Additionally, future studies should explore players' and coaches' experiences for explaining their perceptions regarding motivational climate, enjoyment, perceived competence, intention to be physically active and game outcomes considering their interests in playing.

490 *Practical implications*

495 In practical terms, the results of the present study suggest that youth were not overly affected by the results of each game day but their perceptions were mediated by motivational climate in which players did not compare themselves to each other (Boixadós et al. 2004). On the contrary, comparing between players, neither game outcome nor motivational climate mediating effect affected motivational elements. However, it is important to mention that the leagues and the teams were evenly matched and that the competitive structure of the league did not advantage specific teams. Therefore, the competitive structure of the league and perhaps the coaches in their interactions with the players, were variables of the sport environment that potentially minimized the negative factors associated with game outcomes (Almagro et al. 2015; García-González et al. 2019). The longitudinal data collected in the present study show that it is still possible to keep scores during games without negatively affecting players' perception of motivational elements. Coaches' and parents' role seems



Q7 Figure 1. Multilevel mediation analysis. Players' motivational climate mediation between game outcome and enjoyment, perceived competence and intention to be physically active.

to be crucial to create a motivational climate that minimize the effect of game outcome. Sport leagues need to be engineered so that all players have opportunities to win and lose and that the outcome of a game does not affect a player status within a league (McCalpin, Evans, and Côté 2017). Furthermore, to avoid the potential negative consequences associated with losing, coaches need to connect with players individually as people, model pro-social behaviors and express confidence in their athletes (Kliethermes et al. 2020; Turnnidge and Côté 2018).

Conclusion

In conclusion, players experienced positive feelings regarding their participation independent of whether they had lost or won the game. Game outcomes did not directly affect players' feelings, but motivational climate mediated the effect between game outcomes and motivational elements within players throughout a season. Overall, this study shows that the competitive nature of sport is not a deterrent to youth positive experiences provided adults minimize the emphasis of game outcomes over personal factors such as competence and enjoyment, through motivational climate.

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