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SPORT | RESEARCH ARTICLE

Self-reported playing time and justice as predictors of coach satisfaction: An analysis of elite ice-hockey and handball players

Rune Giske^{1,2}, Stein E. Rodahl³, Bjørn Tore Johansen² and Rune Høigaard^{2,4*}

Abstract: Intrateam competition for specific roles and playing time is a continuous imperative process in elite sport teams. The assessment of this competition is done by the coach and the outcome of this process has a significant impact on the team and the players. The following hypothesis was put forward for testing: Self-reported playing time and perceptions of justice among elite ice-hockey and handball players predict their satisfaction with the coach. Elite ice-hockey and handball players (N = 231) reported playing time and completed the Perceived Justice and Athlete Satisfaction Questionnaires. Hierarchical multiple regression analyses show that self-reported playing time, distributive justice, and procedural justice explains 41% to 45% of the variance in the dependent variable of satisfaction with a coach, thereby confirming the hypothesis. Self-reported playing time does not explain as much as the justice variables. The results complement earlier research showing that training and instructions as well as positive feedback were strong determinants of satisfaction with leadership. In an elite team setting perceived justice emerges as

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PUBLIC INTEREST STATEMENT

Intrateam rivalry and fighting for playing time is a prominent feature in elite sport teams like handball, soccer, and ice-hockey. Playing time is a limited resource highly valued by the players and decisions regarding playing time in matches becomes therefore a significant leadership component with direct consequences for team performance. Because the coach has the power to distribute a limited resource (playing time) in the team, the players' perception of the fairness about the allocation can influence team dynamics, and players' motivation and satisfaction with the coach. The unfair allocation may initiate destructive internal conflicts which might interfere with team performance and negatively influence athletes' athletic experience and their satisfaction with the coach, while perceived justice can have the opposite outcome. More knowledge about players' perception of justice can improve our understanding of how coaches' decision might influence players' relation to the coach and thereby improve the coach's ability to coach effectively.

an important predictor coach satisfaction and the management of intrateam positional competition is therefore an important leadership task to consider. Moreover, coaches allocating limited resources among players should reflect on the justice criteria these decisions are based on if satisfaction with the coach is at stake.

Subjects: Sport and Exercise Science; Sports Development; Sports Coaching

Keywords: coaching; distributive justice; procedural justice; elite team

Performance coaching embraces an attempt to control contributory performance variables (Lyle, 2002), and coaches are responsible for developing athletes' mental, physical, technical, and tactical abilities. On elite level in interactional team sports like ice-hockey and handball, the development of the individual player often will be subordinated by the responsibility to facilitate team performance in such a manner that they realize the expectation to win. France national soccer coach Didier Deschamps precisely elucidates this tension when he explicitly justified Samir Nasri's absence in the world championship in Brazil 2014: "*He is a starter at City [Manchester], which is not the case with France and he has made clear that he is not happy when he is not. And I can tell you it can be felt in the squad. I built the best squad; I did not pick the 23 best French players*" (Pretot, 2014). Phil Jackson the head coach of Chicago Bulls and Los Angeles Lakers expressed in the bestseller book 11 Rings: "*In basketball, the guys who hate you are usually the ones who aren't getting as much playing as they think they deserve*" (p. 93).

In interactional sports, most teams have more players available than the operational team directly involved in the match (Carron & Eys, 2012; Carron et al., 1989; Harenberg et al., 2016a; Lorentzen, 2017). Injuries, training content, restitution, and a belief that intraplayer competition between the players related to playing time is motivational beneficial are possible reasons for such a practice. Harenberg et al. (2016a) suggest that this intrateam positional competition is an ongoing, omni-present process which happens under the awareness of the coach and in addition necessary to determine playing time. According to Carron and Eys (2012) are the opportunities to compete with the main interest of athletes. This phenomenon is referred to as "fighting for playing time" where athletes compete for the opportunity to compete (Harenberg et al., 2016a). Playing time is normally highly valued by the athletes (Chelladurai & Kuga, 1996; Harenberg et al., 2016a; Rotella & Newburg, 1989) and Chelladurai (2007) argues that pursuit in excellence in a team setting requires intrateam rivalry.

In an environment where the players strive (or invest vast of time and effort) continuously and intensively to become better than teammates in light of the eye of the coach which decides the allocation of playing time (Harenberg et al., 2016a, 2016b) a fair distribution of this resource becomes an important leadership task (Becker, 2009; Gilbert et al., 2007; Høigaard, 2020). The allocation of playing time may look like a simple decision problem for the coach, but it can give rise to perceptions of unfair treatment, and initiate destructive internal conflicts which can interfere with teaching and competitive success (Anker, 2010).

Playing time as an objective measurable construct reflects the exact amount of playing time and in elite basketball and ice-hockey is often these facts available in the game statistics. However, Smoll and Smith (1989) emphasized the importance of the players' interpretation of the coaching behaviour and they argue that the effects of coaching behaviour are mediated by the meaning that players attribute to them. In this perspective, self-reported playing time might be more significant than objective-measured playing time.

Research directed at the relationship between athletes and their coaches shows that coaching behaviours impact the players' motivation and performance (Duda & Balaguer, 2007). An important component of that relationship is the level of fairness used by coaches when making

decisions, and choices about distribution of playing time seems to be particularly important because it might influence athletes' athletic experience and in the next step their satisfaction with the coach and the team (Høigaard, 2020). In a review of leadership literature in sport, Chelladurai (2007) claims that athletes are satisfied with the leadership when the coach emphasizes training and instruction as well as positive feedback. Elite team ball generic aspects like justice and distribution of resources (playing time) among teammates is, however, not themed in this research avenue. Harenberg et al. (2016b) state that despite its frequent occurrence in sports, internal competition among teammates is rather underexplored and it becomes important to clarify how coaches can prevent counterproductive outcomes (Gaffney, 2015).

Although we have some knowledge of the relation of coaching behaviour to athlete satisfaction, less attention has been directed towards athletes' perceptions of justice and its influence on satisfaction in elite teams. Jordan et al. (2004) argue that when an athlete is treated in an unfair manner or is dissatisfied, he or she will withdraw from the group, withhold effort, communicate less, and attempt to separate from the team. In addition, Gearity and Murray (2011) report that unfairness was one major theme that constitute the essence of poor coaching. Furthermore, Zhang and Chelladurai (2013) showed that athletes' perceptions of coaches' justice have a positive effect on their trust in their coach.

In social science, the concept of justice has received much attention over the past 40 years and the term justice is regarded as socially constructed (Colquitt et al., 2001). Research has focussed on subjective perceptions related to a) the fairness of outcome distribution or allocations, i.e., distributive justice, and b) the fairness of the procedures used to determine outcome distributions; i.e., procedural justice. For the further philosophical and conceptual elaboration of fairness and justice in sporting games see Loland (1999).

In the present paper, we consider playing time to be a resource distributed between members of a team. Equal distribution of playing time means that available players are given identical playing time and Lorentzen (2017) argues that this allocation practice is less a topic for discussion if the players are equally skilled in youth sport. According to Tornblom and Jonsson (1985, p. 259) Equal allocation does not require knowledge about differential recipient characteristics, and no one is (more than any other) deprived of outcomes. However, such an allocation of playing time in elite team sports is unlikely, and justice must be based on the players' perception of outcome and input. Input or contribution concern effort expended, innate, or achieved ability and productivity. In team performance coaching it is required that the most skilful athletes are playing or those players who generates the maximum team performance together are given playing time indicating there is an element of relativism between the value standard coaches use when they allocate playing time (Lorentzen, 2017).

Procedural justice focuses on the fairness of the procedures for reward distribution (Mahony et al., 2010). Procedural justice in organizational settings concerns the processes used to make decisions and initiatives to increase their perceived fairness. According to Greenberg (1990), the fairness of procedures for employees can be promoted with a decision-making process that is considered ethical, absence of bias, accurate information, correction of mistakes, and allowance for input in the processes. Tyler et al. (1996) argue that fair procedures matter because they communicate symbolic messages about whether individuals are respected members of a group, and whether they should feel pride in that group. Organizational setting research, in general, has shown that perceived justice associates to job performance and satisfaction, organizational commitment, and organizational citizenship (Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Kim & Andrew, 2015).

In sport sciences, the examination of justice arose with the work of Hums and Chelladurai (1994) studying distributive justice among coaches and administrators, and a large part of this research has focussed on perceived fairness in intercollegiate athletics (Mahony et al., 2010). For example,

Whisenant (2005) found that players with positive perceptions of justice demonstrated higher levels of commitment and were likely to continue their participation in their respective sports and Whisenant and Jordan (2006) reported a positive relationship between perception of procedural justice and team performance. De Backer et al. (2011) found that perceived justice outside an educational setting positively predicted elite volleyball- and handball players' team identification, which in turn predicted their perceptions of the task and social cohesion. According to De Backer et al. (2011) previous research in organizational settings has to a lesser degree considered the leaders as a source of justice, but it is reasonable to believe that athlete perception of fairness with the coach influence athletes' attitudes (e.g., commitment to a team, effort, satisfaction with the coach).

In a review, Jordan et al. (2004) argue that in a team sport, playing time, responsibility, and assignment of positions are individual outcomes received by the athletes that may influence their perceptions of fairness. In elite sport, playing time, which is a limited resource controlled by the coach and therefore, most likely relates to players' satisfactions with the coach. However, playing time is probably not enough to understand satisfaction with leadership since the way it is distributed (equitable, equally, need-based) and how those decisions are reached (procedural) likely play a significant role. According to Chelladurai (2001), reduced satisfaction with the leader will occur when the coach continually disregards the athletes' needs and desires. It seems therefore rather obvious that players with less playing time are less satisfied with their coach, thus far, we have very little empirical data to support this notion and previous studies primary been qualitative (Harenberg et al., 2016a, 2016b; Rotella & Newburg, 1989) or nonempirical (Anker, 2010; Lorentzen, 2017). Furthermore, justice seems to be an important leadership issue, but we have little knowledge about how players' perception of fairness is associated with satisfaction with their coach. Therefore, the purpose of this study is to inquire into the potential predictor variables, amount of self-reported playing time, distributive justice, and procedural justice regarding players' satisfaction with their coach. More specifically, the following hypothesis is proposed for testing.

Hypothesis: Self-reported playing time and perceptions of justice among elite ice-hockey and handball players predict their satisfaction with the coach.

1. Method

1.1. Sample and data collection

Despite of obvious difference between ice-hockey and handball, the rules provide the coach in both games the opportunity to switch players back-and-forth as active players during the game. This structural similarity gave us reason to believe that the effect of self-reported playing time and justice on the coach satisfaction dimension might be quite similar between the two sports. All teams in elite ice-hockey and handball leagues were therefore invited off-season to participate in this cross-sectional study. A total of 231 male senior players from the Norwegian elite leagues in ice-hockey (155 players drawn from all 10 teams in the league) and handball (76 players from eight of the 12 teams in the league) participated in the study. Players varied in age from 17 to 37 years ($M = 22.7$, $SD = 3.8$). The number of years of playing at an elite level varied from 1 month to 14 years ($M = 3.7$, $SD = 3.6$). The number of players per team who participated varied from 11 to 20, with an average of 12.8 players per team, and there was no change of head coaches during the season.

The teams were invited by the Norwegian Olympic Centre to be physically tested and to participate in an informal strongman competition. After finishing the physical test, the players were asked to participate in this study and informed about its purpose. No, player refused to participate, and after completing questionnaires, the players placed them in a secure pillar-box at

the Centre, and ethical approval was obtained according to the institutional procedures of the second author's University.

1.1.1. Measures

1.1.1.1. Self-reported playing time. In the present study, the amount of self-reported playing time (SRPT) was determined by asking handball players to report the number of minutes that they on average played during a match in the recent season. The following categories were used: 1) less than 10 min, 2) from 10 to 19 min, 3) from 20 to 29 min, 4) from 30 to 39 min, and 5) over 40 min. In ice-hockey the following categories were used: 1) less than 10 min, 2) from 10 to 19 min, 3) from 20 to 29 min, and 4) over 30 min. To develop comparative playing time categories between handball and ice-hockey we use the following procedures: The game time in handball and ice-hockey is 60 min. There are, however, seven players on the field at the same time in handball and six players in ice-hockey. This means that the coach in handball administers 420 min (60 min x 7 players) while the ice-hockey coach administers 360 min (60 min x 6 players). In handball, the coach distributes playing time to 12 players while the ice-hockey coach allocates this resource to 22 players. Each player's average playing time in handball is therefore 35 min (420 min/12 players) while average playing time in ice-hockey is 16,36 min (360 min/22 players). This average value was the base for the categorization of the players. Ice-hockey players reporting in the category between 10 and 20 min was defined as average playing time, while players reporting less than 10 min were categorized in the group less than average playing time. Players reporting more than 20 min were categorized in the group more than average playing time. In handball, the average playing time was in the category between 30 and 40 min and reported playing time over 40 min was categorized in the group over average playing time, while players reporting less than 30 min was categorized as less than average playing time.

Of the 218 athletes, there were 62 in category: playing time under average (PTG1); 75 in category: playing time average (PTG2); and 81 in category: playing time more than average (PTG3). The three-category ordinal variable "playing time" was included in the regression analysis as two dummy variables, with the PTG1 being used as a reference.

1.1.1.2. Satisfaction with the coach. Three aspects of satisfaction with the coach were assessed with the Athlete Satisfaction Questionnaire (ASQ) (Riemer & Chellandurai, 1998). The ASQ was derived from a model that is multidimensional in nature, incorporating 15 facets of athlete satisfaction. For the purposes of this study, we used three sub-scales related to athletes' satisfaction with their coaches, as follows:

Ability utilization (five items): Satisfaction with how the coach uses and/or maximizes the individual athlete's talents and/or abilities. An example of an item is: "I am satisfied with the degree to which my abilities are used".

Training and instruction (three items): Satisfaction with the training and instruction provided by the coach. An example of an item is: "I am satisfied with the instruction I have received from the coach this season".

Personal treatment (five items): Satisfaction with coaching behaviours that directly affect the individual, yet indirectly affect team development. This includes social support and positive feedback. An example of an item is: "I am satisfied with the extent to which the coach is behind me".

All items were presented on a 7-point Likert scale ranging from 1 (*not at all satisfied*) to 7 (*extremely satisfied*). The mean scores for each subscale are derived independently but higher scores reflect greater satisfaction. Cronbach's alpha coefficients were .87 for ability utilization, .81 for training and instruction, and .92 for personal treatment, which all indicate good internal reliability according to values suggested by Nunnally (1978). The three-factor satisfaction was also evaluated through confirmatory factor analysis (CFA) using SPSS, AMOS and the results indicating fair fit for the subscales, ability utilization, training, and instruction, and personal treatment (Browne & Cudeck, 1993; Kline, 2005).

1.1.1.3. *Perceived justice with the coach.* To assess the athlete’s perception of justice with their coach we used De Backer et al. (2011) justice questionnaire. The scale consists of four items assessing perceptions of distributive justice – for example, “The minutes I play are fair, based on my performance” —and four items assessing perceptions of procedural justice – for example, “My coach makes decisions accurately and correctly”. Participants responded to these justice perception items on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha values were .79 for distributive justice and .89 for procedural justice, which both indicates good internal reliability. The two-factor-perceived justice was also evaluated through confirmatory factor analysis (CFA) using SPSS, AMOS and the results indicate close fit (Browne & Cudeck, 1993; Kline, 2005).

2. Results

Table 1 displays mean, standard deviations, and bivariate correlations the variables measured, and the results show high mean values (above the midpoint of the scale) on both justice scales and in all three sub-dimensions of the Athlete Coaching Satisfaction Inventory. In general, this result indicates a high level of satisfaction with the coach and suggests that the elite players consider their coaches’ decisions to be fair. As shown in Table 1, there are significant positive correlations between all measured variables.

Three hierarchal multiple regression analyses were performed to examine the effects of playing time and perceived justice on each of the satisfaction-with-coach dimensions. The analyses were performed with sport included as a dichotomous variable and treated as covariates. In the first step, sport and playing time was entered and perceived justice in the second step. In addition, due to multiple hypotheses, a Bonferroni correction of the alpha value was conducted (.05/3). Accordingly, the current alpha was set to .017.

As can be seen in Table 2, the predictor variables of playing time emerged as a unique predictor accounted for 6% to 14% of the variance in the dependent variables. The covariate variable sport did not significantly affect the dependent variables. When controlling for sport and playing time, distributive justice and procedural justice were both unique positive predictors and accounted 28% to 35% of the variance in the dependent variables (Cohen’s F^2 was: Training and instruction = 0.75; Ability utilization = 0.79; Personal treatment = 0.89).

Distributive justice emerged as an especially strong and significant predictor of ability utilization ($\beta = .46$), and procedural justice showed a particularly strong effect on the dependent variable of Training and instruction ($\beta = .49$).

Table 1. Descriptive statistics and the bivariate correlation between measured justice and ASQ variables

	n	M (SD)	2	3	4	5
1.Procedural justice	197	3.54 (0.74)	.32**	.50**	.55**	.37**
2.Distributive justice	194	3.60 (0.92)	–	.56**	.44**	.61**
3.Personal treatment	196	5.11 (1.08)		–	.75**	.68**
4 Training and instruction	195	4.97 (1.08)			–	.63*
5.Ability utilization	199	4.82 (1.13)				–

Note. * $p < .05$, ** $p < .01$.

Table 2. Hierarchical multiple regression analyses with sport and satisfaction with coach (ability utilization, training, and instruction, and personal treatment) as dependent variables

Variables	Ability utilization		Training and instruction		Personal treatment	
	Step 1 ^c	Step 2 ^d	Step1 ^c	Step 2 ^d	Step1 ^c	Step 2 ^d
Team ball discipline ^a	-.06	-.04	-.14	-.15	-.12	-.11
Playing time ^b						
PTG 2	.22*	.11	.25*	.22*	.24*	.16
PTG 3	.47*	.23*	.32*	.17	.41*	.20*
Distributive justice		.46*		.24*		.38*
Procedural justice		.21*		.49*		.38*
Total adj. R ²	.14	.42	.06	.41	.10	.45

Note: ^a0 = Handball, 1 = Ice-hockey

^bSelf-reported playing time included as dummy variables; PTG 3 = More than average playing time; PTG 2 = average playing time; PTG 1 Under average playing time used as reference group

^cStandardized regression coefficients without Perceived justice entered in the regression

^dStandardized regression coefficients with Perceived Justice entered in the regression

*Statistical regression coefficients (Bonferroni corrected alpha level) $p < .01$.

To investigate the impact on playing time (PTG 1, PTG 2, PTG 3) on level of justice a one way between group ANOVA was conducted. There was a statistically significant difference at in distributed justice score for all groups [$F(2,184) = 15.1, p < .01$]. Post-hoc comparisons using Tukey HSD test indicated that the mean score from PTG1 ($M = 3.17, SD = .90$), PTG2 ($M = 3.60, SD = .80$), PTG3 ($M = 4.0, SD = .87$) were all significantly different from each other ($p < .05$).

3. Discussion

In a high team performance, sports environment allocation of playing time is a source of power coupled to the coach (Chelladurai & Kuga, 1996; Harenberg et al., 2016b) and previous studies have not been conducted with a quantitative research design. This intrateam phenomenon is underexplored (Harenberg et al., 2016a) and the purpose of this study was, therefore, to investigate self-reported playing time and perceived justice as predictor variables of athletes' satisfaction with their coaches in elite male ice-hockey and handball teams. The results displayed in Table 2 shows that playing time emerged as a significant predictor in step one in the regression analysis on all three dependent coach satisfaction variables. This finding indicates that players with less playing time are less satisfied with their coaches, while players with more playing time are more satisfied and it confirms previous findings derived from qualitative research (Harenberg et al., 2016a, 2016b; Rotella & Newburg, 1989; Woods & Thatcher, 2009).

In step two, when the perceived justice variables were entered into the regression analysis, the variable "playing more than average" was the only significant predictor of personal treatment and ability utilization. While previous research has demonstrated a negative effect of limited playing time (Rotella & Newburg, 1989; Woods & Thatcher, 2009), the findings in the present study shows in addition that increased playing time is associated with higher levels of coach satisfaction. Increased playing time may contribute to the perception that the players receive better care and it ensures player status, and a possible explanation of why playing time predicts satisfaction with the coaches' personal treatment. Allocation of playing time may be understood as an operationalization of a coach's trust in a player's competence or ability (Hoffman et al., 1996) and may explain why more playing time generates greater satisfaction with the way in which the coach uses and/or maximizes the individual player's talents.

Becker (2009) investigated athletes' perceptions of great coaching and derived from her research we can argue that the key is not equal but the equitable amount of playing time. Furthermore, Harenberg et al. (2016b) stated that communication regarding playing time decisions is vital to keep athletes engaged in the competition for playing time.

As can be seen in Table 2, both distributive justice and procedural justice emerged as significant predictors for all dependent variables, and add additionally 28–35% variance in the dependent variables. These findings seem to be in line with the Becker (2009) and Harenberg et al. (2016b) and confirms the hypothesis stated that self-reporting playing time and perceptions of justice predict their satisfaction with the coach, and justice seems to be particularly significant. Distributive justice seems to be especially important for the ability utilization and personal treatment variables. Distributive justice is about whether players' playing time is perceived fair based on their effort, performance, and ability, while ability utilization concerns the players' satisfaction with the way in which the coach uses an individual athlete's talents. It is plausible that distributive justice is a precursor to a player's experience of being perceived as talented or feeling appreciated and, therefore, that it helps explain the variance in ability utilization.

The prediction, that distributive justice affects athlete satisfaction with personal treatment, suggests that if a player considers the distribution of playing time to be fair, he is generally satisfied with the personal treatment from the coach. This can be understood in the same way that in an organizational setting, employees' satisfaction with their superior's personal treatment may partly be explained by the distribution of salaries (resources) and partly if it is considered fair compared to the others' input. The experience of being well treated and appreciated by the coach precursor that the decision outcome related to playing time is felt deserved compared with the other team members. The playing time and distributed justice variables both partially explain the variance in satisfaction with personal treatment by the coach, but distributive justice is a stronger predictor. This result may elaborate previous research findings showing that lack of playing time has a negative influence on players' mental condition and the coach–athlete relationship (Rotella & Newburg, 1989; Woods & Thatcher, 2009) in the sense that it is not only the lack of playing time per se that creates this negative effect but also the experience of low distributive justice.

Procedural justice concerns the fairness of the procedures responsible for reward distribution, and in this context, this relates to the coaches' decision-making process leading to the distribution of playing time among the players. According to Giske et al. (2013), we have deficient empirical knowledge about coaches' decision-making in an elite team sport, and their findings indicate that elite soccer coaches are dominated by a rational and intuitive decision style. Procedural justice concerns the player's perception of the objectivity of the information on which a decision is based, and the accuracy, correctness, and rationality of the process, which are fundamentals we associate with a rational decision style. Emphasizing procedural justice may therefore alternate coaches' decision style from more intuitive towards more rational.

As displayed in Table 2, procedural justice seems to be an especially important predictor for the dependent variable satisfaction with a) personal treatment and b) training and instruction. The relationship to personal treatment may indicate that the accuracy and correctness of decision-making processes is of great importance for how well the players perceive they are treated. This finding seems to line with Harenberg et al. (2016b) suggestion that it is imperative that coaches make playing time decisions transparent. Gaffney (2015) argues that healthy competition within a team is both natural and productive, but it must be carefully monitored, or it becomes counter-productive. The results of the present study support an assumption that transparent decisions with justifications communicated to the players enhance their satisfaction with the coach personal treatment by foster a nourishing intrateam competitive environment. The measure of satisfaction with personal treatment is primary emotionally loaded (e.g., “the friendliness and level of appreciation that my coach shows towards me”), and the present finding elaborates which coaching behaviour (procedural justice) beyond the emotionally loaded, which is essential

to take into account facilitating satisfaction with personal treatment among the elite team players.

Previous research on coaches has focussed mainly on the extent of training and instruction (Chelladurai, 2007; Smith et al., 1977) and not the qualitative and social elements of this pedagogical practice. Training and instruction are considered as one of the most significant coaching tasks that requires continuously comprehensive pedagogical deliberations. Procedural justice emerged as a significant predictor and may solely indicate that elite players on this performance level receive team practice or a training content, which is based on justified and thoughtful decisions.

3.1. Limitations

Although the results of this study support that playing time and justice explains much of the variance in coach satisfaction in elite handball and ice-hockey there are several factors that might limit their generalization. First, one can question the operationalization of self-reported playing time, which may be considered as approximate. However, the perception of allocated playing time is probably more important and has a greater potential to affect the players' conceptions of the coach compared with an objective measure of playing time. Future studies should however address the connection between objective and perceived playing time. Match analysis technology can be a research avenue, illuminating this relationship. From a practical perspective the information from the analysis can contribute to improvement in coaches' decisions and increased transparency and facilitate the players' perception of justice.

Second, the justice scales measure only players' perceptions of justice and do not give reasons for why it is fair or unfair. The correlation design of this study has limitations related to causality, and future research should have a longitudinal design.

Finally, the data is generated from handball and ice-hockey, where the players can be substituted several times, and unlimited substitution is often permitted. Therefore, the perception of playing time might be different from other team sports (e.g., soccer). The operationalization of perceived playing time should be further elaborated before generalizing to other team sport (e.g., soccer).

3.2. Conclusion and practical application

The results of this study confirm that self-reported playing time and perceived justice among elite players predict their satisfaction with their coaches. Justice is an issue when a resource (e.g., playing time) is restricted, as it is in elite teams, and seems to be a more significant contributor than playing time per se. This finding seems to complement earlier research showing that training and instructions as well as positive feedback was strong determinants of satisfaction with leadership (Riemer & Chelladurai, 1995).

In a competitive and performance-oriented environment, Gaffney (2015) argues that winning is a strong *prima facie* priority over other values like, e.g., fairness. To become an elite team-member implies the subordination of one's self-interest to the group interest, and paradoxically one's self-interest is better promoted that way. The group interest is that the most skilful athletes are playing because it increases the likelihood of success and these principals applies equally (Gaffney, 2015). However, fair and respectful treatment from coaches can facilitate players' respect and pride, which are feelings related to self-esteem and obligations to the coach and encourage people to accept unfavourable decisions and to facilitate commitment, loyalty, and effort on behalf of the team (Tyler et al., 1996).

The foundation of fair decisions in distributing playing time is related to the lack of bias and consistency of the coach and to the accuracy of information (De Backer et al., 2011). These notions of justice is not in conflict with a strong orientation towards performance but is reflections

that may improve team performance in general (better quality of decisions regarding playing time) and ensure coach satisfaction even if a player is disappointed with the outcome.

A strong commitment precursor elite players' investment of years of practice enables them to become an elite team member. Perception of justice and allocated of playing time may therefore become more protuberant compared with nonelite players, but the allocation of playing time is probably also an essential aspect in all teams where it is a limited resource desired by the players. Distribution of this limited resource becomes a key to understand team coaching because the allocation of time can be considered as a reward and an operationalization of individual trust and in addition a germ to conflicts in the team. In our opinion, all team coaches distributing a desired limited resource should reflect upon the criteria these allocation decisions are based on.

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