THE INTERNATIONAL WHEELCHAIR BASKETBALL FEDERATION'S CLASSIFICATION SYSTEM: THE PARTICIPANTS' PERSPECTIVE

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Abstract:

The purpose of this exploratory study was to evaluate opinions of elite athletes, coaches and classifiers regarding the International Wheelchair Basketball Federation's (IWBF) functional classification system. We were also interested in the athletes' perspective regarding potential changes to the classification system. In addition, we compared the generalized opinions reported by the athletes to those of coaches and classification officers. This survey was administered during the Wheelchair Basketball Gold Cup (Amsterdam, 2006). Seventy-nine athletes, 50 men and 29 women, as well as 12 coaches and 14 classifiers completed the survey. The first part of the survey addressed demographic characteristics of the participants. The second part focused on their opinions regarding the current classification system. Based on the survey responses, athletes reported that the IWBF classification system is generally satisfactory. However, athletes as well as coaches and classification officers did report some specific concerns about this classification system. These concerns included changes in an athlete classification, athlete cheating and communication between classifiers and athletes. Athletes, coaches and classifiers, as the wheelchair basketball's primary constituent groups, have a vested interest in the evolution of the game and should be included in the evaluation and modifications to the functional classification system. This study has demonstrated that a classification specific survey could provide useful information and insight into the perspectives of these constituent groups.

Key words: *survey, disabled sports, athletes, disabilities*

Introduction

Given the wide spectrum of functional abilities of athletes participating in wheelchair basketball, it is necessary to have a classification system that ensures equitable opportunities for participation of all eligible athletes. According to Tweedy and Vanlandewijck (2011) all Paralympic systems of classification should indicate that the purpose of the system is to promote sports participation of people with disabilities by minimizing the impact of eligible types of impairment on the competition outcome. According to the IPC Classification Code (2015), the purpose of classification is to define who can compete in Para-sport and to ensure that the impact of impairment in each event is minimised. In order to enable sport for the physically disabled to achieve this goal, the Paralympic classification model has progressed to the categorization of athletes based on the similarity of impairment or function rather than medical diagnosis (Francis, 2005).

In 1982, Horst Strohkendl introduced a functional classification system, which was adopted by the International Wheelchair Basketball Federation (IWBF) (IWBF, 2014). This novel system focused on the athlete's functional ability as the main clas-

sification criterion (Strohkendl, 1986; Courbariaux, 1996). The system was based on differential descriptions of the functional abilities of wheelchair basketball athletes in each of five classes (1, 2, 3, 4 and 4.5). IWBF also mandated three subclasses (1.5, 2.5, and 3.5) for athletes presenting mixed characteristics of two classes (1 and 2, 2 and 3, or 3 and 4) (Courbariaux 1996; IWBF, 2014).

The higher the class (points), the higher the functional level of the athlete. In the current IWBF rules, the point limit for the five players of one team on the floor at any one time is 14 points (i.e. 1pt+2pt+3pt+3.5pt+4.5pt=14 pt) (IWBF, 2014). IWBF promotes inclusion of female athletes in male teams in national leagues. The same tendency is observed for junior athletes. It influences the total team point amount on the court. For instance, when a female athlete plays in Euroleague tournaments, the acceptable total team points increases by 1.5 pt. Similarly it is done with juniors. The system is based on the observation of athletes' functional abilities during games or training sessions. The range of trunk movement and stability are the basis for classification. Most commonly used terminology when discussing classification is the player's "volume of action", which is clearly defined for each class. Only sometimes athletes' medical files (i.e. description of minimal disability) or medical tests (i.e. stamp measurements) are used during players' evaluation (IWBF, 2014).

The International Paralympic Committee's Political primary emphasis regarding classification across sports has been to decrease the number of classification levels to make the system easier to comprehend and accessible to the general public, to ensure an adequate number of competitors in a given event and make the events themselves more manageable (Jones & Howe, 2005)

To this end, a variety of different criteria have been used to evaluate the uniqueness of the wheelchair basketball functional classification system levels. For this purpose, numerous authors have examined aerobic and anaerobic performance (Hutzler, 1993; Vanlandewijck, Spaepen & Lysen, 1995; Hutzler & Sagiv, 1996; Hutzler, Ochana, Bolotin, & Kalina, 1998; Molik, Kosmol, Laskin, Skucas, & Bida, 2010; de Lira, et al., 2010; Weissland, Faupin Borel, Berthoin, & Leprêtre, 2015), sport skill tests (Brasile 1986, 1990; Brasile & Hedrick, 1996; Doyle, et al. 2004; Gil, et al., 2015; Granados, et al., 2015; Weissland, et al., 2015; Yanci, et al., 2015; Iturricastillo, Yanci, Granados, & Goosey-Tolfrey, 2016), game performance (Vanlandewijck, et al., 1995; Molik & Kosmol, 2001; Vanlandewijck, et al., 2003, 2004; Molik, et al., 2009; de Witte, Hoozemans, Berger, van der Woude, & Veeger, 2015), and others (i.e. shooting mechanics, kinematic analyzes, wheelchair acceleration) (Malone, Gervais, & Steadward, 2002; Crespo-Ruiz, Del Ama-Espinosa, & Gil-Agudo, 2011; Vanlandewijck, Verellen, & Tweedy, 2011) to evaluate athletes' performance at different classification level.

In a presentation to the International Paralympic Committee, Hedman (2003) advocated that the inclusion of athletes' opinions related to their sport is critical, particularly about classification. A review of the literature was unable to locate any research in the area of players' opinions regarding wheelchair basketball classification. Wu, Williams, and Sherrill (2000) provided a questionnaire to a group of swimming classifiers. The basic assumption in their study was that the classification process was an exercise in positive social control. The authors concluded that, among other attributes, classifiers demonstrated features that enable them to serve competently as agents of social control, they typically have extensive classification and swimming experience, and possess a coaching or teaching certificate.

The purpose of this study was to provide preliminary data on the perspectives and opinions of athletes, coaches and classifiers regarding the IWBF functional classification system. The basic premise is that the classification systems must ensure the opportunity for full participation of eligible athletes with a diverse range of functional abilities while encouraging high levels of participation and performance. If the classification system is not perceived to be fair and equitable as described in the basic premise – if there are perceptions of bias – this will affect the wheelchair basketball interest of individuals in participating, and the motivation of individuals who participate. To date, there have been no opinion-based study of the classification system. The results of this exploratory study will be used to plan a more rigorous study of opinions related to the classification system.

Methods

The Senate Commission of Science Research Ethics at the Jozef Pilsudski University of Physical Education in Warsaw (Poland) approved this study. Additionally, this study was approved by the International Wheelchair Basketball Federation. The consent to participate in this study was assumed with the return of the questionnaire and participants' anonymity was assured. To maximize response rate the participants were twice reminded, by the team managers, to fill in the questionnaire – in the middle and at the end of the tournament.

Participants

All 216 eligible athletes who participated in the 2006 Wheelchair Basketball Gold Cup in Amsterdam were invited to participate. Seventy-nine of the 216 (36.6%) participating elite wheelchair basketball athletes (29 female, 50 male), representing 11 men's and 7 women's national teams,

took part in the study. Gender ratio of athletes (63.3% male and 36.7% female) who participated in the study was consistent with gender ratio of all athletes (61.1 % male and 38.9% female) who participated in the tournament. In addition we had the opportunity to give this survey to the coaches and classification officers. Of those attending the games, 12 coaches (50%) and 14 classifiers (100%) volunteered to participate. Table 1 presents the demographic data of athletes, coaches, and classifiers.

Survey

To evaluate the current status of the IWBF functional classification system from the participants' perspective, a survey was developed that focused on the following four primary factors: 1) status of the current classification system, 2) an assessment of classification procedures, 3) perceived skill level of national level classifiers, and 4) perceived skill level of international level classifiers. In concert with the direction and advice of a sociolo-

Table 1. Demographic data of athletes, coaches, and classifiers

Athletes – n (%)	Total (Athletes)		79	(100)
	Gender – n (%)	Female	29	(37)
		Male	50	(63)
	Age[a] – mean (SD)		29.7	(7)
	Type of disability – n (%)	Polio	10	(13)
		Paraplegia/ Spina bifida	45	(58)
		Amputee	12	(15)
		Other	11	(14)
		Unknown	1	
	Wheelchair basketball experience – n (%)	1-10 years	55	(70)
		More than 10	24	(30)
	Training sessions per week – n (%)	1-3	33	(42)
		4 or more	45	(58)
		Unknown	1	
	Current classification – n (%)	1 (1.0-1.5)	23	(32)
		2 (2.0-2.5)	15	(21)
		3 (3.0-3.5)	10	(14)
		4 (4.0-4.5)	23	(32)
		Unknown	8	
Coaches – n (%)	Total (Coaches)		12	(100)
	Gender – n (%)	Female	3	(25)
		Male	9	(75)
	Disabilities – n (%)	With	2	(17)
		Without	10	(83)
	Years of experience – n (%)	<1	0	(0)
		1-3	1	(8)
		4-10	3	(25)
		>10	8	(67)
Classifiers – n (%)	Total (Classifiers)		14	(100)
	Gender – n (%)	Female	5	(36)
		Male	9	(64)
	Profession – n (%)	Physicians	3	(21)
		Physical therapist	2	(14)
		Athlete, Coaches	4	(29)
		Others	5	(36)
	Ranking – n (%)	National	2	(15)
		International	11	(85)
		Unknown	1	
	Years of experience as national classifier – n (%)	Less	6	(46)
		More	7	(54)
		Unknown	1	
	Years of experience as international classifier – n (%)	Less	3	(25)
		More	9	(75)
		Unknown	2	

[a]Age of 20 respondents was unknown.

gist, an initial sample of questions was developed and presented to our content expert revisors – the President of the IWBF, the IWBF Player Classification Commission, and several other international and national level classifiers, many of whom were retired athletes. Once our content experts agreed on the specific questions, three versions of the survey were created, for the athletes, coaches, and classifiers, respectively (Bowling, 2002). Versions varied only in that the wording was group specific and the appropriate demographic information was asked. The first section of the survey addressed demographic characteristics of the participants. The second section focused on their opinions regarding the classification system.

This descriptive survey was designed using a close-ended format with the assumption that our evaluation of the classification system could be based on the participants' evaluation of four fundamental factors: 1) status of the current classification system, 2) evaluation of classification procedures, 3) perceived skill level of national classifiers, and 4) perceived skill level of international classifiers. A 5-point Likert scale was used (1 – very poor, 2 – poor, 3 – satisfactory, 4 – good, 5 – very good). Analysis of the data validity and reliability was performed on the scale of classification system's evaluation, because other parameters had nominal character (they were not identified as parametric factors). Principal component analysis was used for the theoretical confirmation of validity. We accepted that factors or components that were used in the evaluation scale would be correlated >.70 with the first component (Nunnaly, 1978; Bowling, 2002). Analysis of the main components of the scale status of the current classification system (1) separated one correlate component at the level from .82 to .88 with four components that created it. Based on the level of validity of the components that describe evaluation of the classification system we were are able to recognize questions as appropriate.

Moreover, Cronbach analyses for four fundamental factors showed alpha level of .803.

The reliability of the questionnaire was evaluated using the method of internal cohesion, which required that the correlations were at least 0.40 (Kline, 1986). Our analysis showed correlations for each of the four primary factors examined in our questionnaire to be .76, .93, .71, and .90, respectively.

Statistical analysis

This study was exploratory in nature and the sample size was fixed by the number of volunteer respondents who were attending the tournament, therefore our interest centered on the margin of error in the estimated proportion (Cochran, 1977). The primary outcome variable was athletes' opinion of the IWBF classification system. For the purposes of estimating the margin of error, interest centered on the proportion of respondents who rated the current classification system as satisfactory or better (satisfactory, good or very good) versus the proportion of respondents who rate the system as unsatisfactory (poor or very poor).

The observed sample size was 79 athletes. The observed proportion of respondents who rated the current system as satisfactory or better was approximately 90%; the proportion of unsatisfactory evaluations was approximately 10%. We were willing to incur a small risk (α=0.05) of underestimating the margin of error. With these specifications, the margin of error was approximately 6.75%.

Most variables corresponding to these questions were taken to have ordinal levels of measurement. Exceptions were two questions having to do with the classification system preference and the number of classes, both of which had nominal levels of measurement. The percentage response within each group (athlete, coach, and classifier) was calculated for each of the fifteen variables. For the ordinal variables, the hypothesis that the groups had identical locations – specifically, that they had identical mean ranks – was tested using a Kruskal-Wallis test. When this hypothesis was rejected, nonparametric multiple comparisons tests (Zar, 2007) were conducted on each of the three pairs of groups (athletes – coaches, athletes – classifiers, and coaches – classifiers) to identify pair(s) that contributed to the rejection. For the nominal variables, the hypothesis that the categorical variable and status are independent was tested using a Fisher's Exact test. For the question regarding athletes' opinions about their classifications, the data were further broken down by categories, with category A including classes 1 through 2.5 (those without pelvic control) and category B including classes 3 through 4.5 (those with pelvic control). The Fisher's Exact test of the hypothesis that opinion and category are independent was conducted at the .05 level of significance.

Kruskal-Wallis and Fisher's Exact tests were conducted at the $p \leq .05$ level of significance. The procedure-wise error rate for the multiple comparisons was $p \leq .05$. Percentage responses, Kruskal-Wallis tests, and Fisher's Exact tests were conducted using IBM SPSS Statistic 20 (Cracow, Poland). Multiple comparisons were implemented by writing a function in S-Plus 7.0.6

Results

Table 2 presents the opinions of athletes, coaches, and classifiers about the current classification system, Table 3 reveals the perceptions of athletes, coaches, and classifiers regarding the classifiers' skill level and objectiveness of classification, and Table 4 presents these groups' opinions about some of the current issues related to classi-

fication. Significant differences between athletes, coaches and classifiers were found for the following (nine out of fifteen) questions: classification system, number of classes, procedures in the classification system, international classifiers' skill level, knowledge about the classification system, objectiveness of national classifiers, objectiveness of international classifiers, women on men's teams, and benefits for beginners.

Multiple comparison procedures for the variable "individual knowledge about the classification system" indicated that athletes and classifiers were significantly different. Almost all classifiers indicated good or very good knowledge about classification, whereas only one out of four athletes indicated satisfactory knowledge about the classification. No other multiple comparisons differences were found; as expected, given the exploratory nature of this study, many relationships remained statistically unclear due to small sample sizes within groups of coaches and classifiers.

Distributions of opinions are described below. Descriptions are limited to the total sample in cases where no statistical differences were found among the three groups; otherwise, the descriptions highlight notable substantive differences between the group samples.

Most of the individuals (over 90%) evaluated the status of the current classification system from satisfactory to very good; only 3% of the respondents indicated that, in their opinion, the current system is very poor. Classifiers gave the classification system higher ratings than athletes and coaches. Almost none of the athletes or coaches (4% and 0%, respectively) rated the system as good or very good, whereas almost half (46%) of the classifiers rated the classification system as being very good.

Most of athletes and coaches in the study (total 65%; 54% of athletes and 57% of coaches) chose the functional and observational systems as their preferences. Only a small number of individuals (total 9%; 11% of athletes, and 8% of coaches) indicated a preference for the older, medical classification system. All classifiers chose the functional and observational systems as their preference.

Sixty-one percent of all participants indicated that the current number of classes in the IWBF functional classification system is optimal. Sixty-three percent of athletes and 79% of classifiers represented the bulk of this majority. However, less than half of the coaches (33%) felt that the current number of classes is optimal, and an equal percentage in this group indicated that there are too many classes.

Table 2. Opinions of athletes (A), coaches (C), and classifiers (Cl) about the current classification system in wheelchair basketball

Item	Response	Group (%)				p-value
		Total	A	C	Cl	A-C-Cl
Status of the current classification system	Very poor	3	4	0	0	.008*
	Poor	6	7	8	0	
	Satisfactory	37	39	42	23	
	Good	45	47	50	31	
	Very good	9	4	0	46	
Classification system preference	Medical	9	11	8	0	.088
	Functional	26	21	33	43	
	Observation	21	23	17	14	
	All systems	15	19	8	0	
	Medical – functional	1	1	0	0	
	Medical – observation	2	1	8	0	
	Functional – observation	15	10	17	43	
	No opinion	10	13	8	0	
Current number of classes	Too many	14	9	33	21	.036*
	Optimal	61	63	33	79	
	Too few	9	9	17	0	
	No opinion	16	19	17	0	
Classification procedures	Very poor	1	1	0	0	.024*
	Poor	11	12	18	0	
	Satisfactory	49	51	55	31	
	Good	34	31	27	54	
	Very good	5	4	0	15	

* Significant at the .05 level.

Table 3. Opinions of athletes (A), coaches (C), and classifiers (Cl) about the skill levels and objectiveness of national and international classifiers in wheelchair basketball

Item	Response	Group (%)				p-value
		Total	A	C	Cl	A-C-Cl
Perceived skill level of national classifiers	Very poor	7	7	17	0	.058
	Poor	17	22	0	0	
	Satisfactory	39	40	33	39	
	Good	28	23	33	54	
	Very good	4	4	8	0	
	No opinion [a]	5	4	8	8	
Perceived skill level of international classifiers	Very poor	2	3	0	0	.017*
	Poor	11	14	0	0	
	Satisfactory	33	35	42	15	
	Good	42	38	50	62	
	Very good	10	8	8	23	
	No opinion [a]	2	3	0	0	
Individuals' knowledge about classification	Very poor	2	3	0	0	.001*[b]
	Poor	14	16	8	7	
	Satisfactory	44	54	25	0	
	Good	29	20	50	64	
	Very good	9	4	17	29	
	No opinion [a]	2	3	0	0	
Objectiveness of national classifiers	Not objective	40	45	42	7	.026*
	No opinion	17	16	25	21	
	Objective	43	39	33	71	
Objectiveness of international classifiers	Not objective	28	35	8	7	.004*
	No opinion	26	27	42	7	
	Objective	46	38	50	86	

* Significant at the .05 level.
[a] Respondents with no opinion excluded from hypothesis test.
[b] Comparison A versus Cl was significant.

Table 4. Opinions of athletes (A), coaches (C), and classifiers (Cl) about cheating, influence of training and benefits during classification process in wheelchair basketball

Item	Response	Group (%)				p-value
		Total	A	C	Cl	A-C-Cl
Cheating of competitors during classification process	No	30	24	33	57	.194
	No opinion	17	19	25	0	
	Yes	53	57	42	43	
Influence of training on athlete classification	No	34	31	25	57	.061
	No opinion	11	12	0	14	
	Yes	55	57	75	29	
Benefit to women if allowed to play on men's teams	No	20	16	58	7	.008*
	No opinion	10	14	0	0	
	Yes	69	70	42	93	
Benefit to the novice if allowed to play on senior teams	No	44	49	25	29	.046*
	No opinion	7	9	0	0	
	Yes	49	42	75	71	
Benefit to the junior if allowed to play on senior teams	No	47	50	33	43	.393
	No opinion	5	6	0	0	
	Yes	49	44	67	57	
Able-body allowed to play wheelchair basketball	No	37	34	50	43	.405
	No opinion	6	5	8	7	
	Yes	57	61	42	50	

* Significant at the .05 level.

The majority of the respondents were of the opinion that the skill level of national and international classifiers was satisfactory to very good (71% and 85%, respectively). In actuality there are three levels of classifiers: national, zonal, and international. For the purposes of this survey only the national and international levels were used, due to the fact that zonal events are infrequent and that the majority of classifiers at zonal events are certified at the international level. Only a small number rated the skill level of the national level classifiers to be very poor (7%), whereas only 2% felt the same way regarding the skill level of the international classifiers. The skill levels of international classifiers were higher rated by the classifiers than the athletes and the coaches. Forty-six percent of the athletes, 58% of the coaches, and 85% of the classifiers rated the skill levels of international classifiers as being good to very good.

Most of the individuals (over 80%) reported that their personal knowledge about the current classification system ranged from satisfactory to very good; only 2% of the respondents indicated that, in their opinion, their knowledge was very poor. Athletes were found to have a significantly lower level of knowledge as compared to classifiers. Less than 25% of athletes evaluated their knowledge as good or very good, whereas most of classifiers (93%) evaluated their knowledge as good or very good.

Almost equal numbers of respondents rated the objectiveness of national classifiers as "not objective" versus "objective" (40% and 43%), whereas only 28% felt that international classifiers were "not objective". Most classifiers (71%) rated the decisions of national level classifiers as "objective" in comparison with only about half as many athletes (39%) and coaches (33%). Athletes' opinions about objectiveness of international classifiers were almost uniform across the responses (35% "not objective"; 27% "no opinion"; 38% "objective"), whereas most coaches (92%) had either "no opinion" or evaluated the objectiveness as "objective". Most classifiers (86%) evaluated the objectiveness as "objective".

The questionnaire included several questions specific to the opinions of athletes and/or coaches. This group was asked if they expected a clear explanation of the classifiers' decision. Most athletes (83%) and all coaches indicated that they expected an explanation by the classifiers as to how they made their decision.

Ninety-eight percent of athletes indicated that they have never cheated during the classification process. However, in the question asked about whether or not cheating occurs during the classification process, 57% of athletes believed that other players cheated during the classification process in order to be classified as a lower class.

Twenty-eight percent of athletes reported having had their classification changed during their sport career. Seventy-three percent of these changes occurred while competing at an international competition. The scope of this study did not allow us to explore the reasons why and when these changes occurred, but the fact that so many athletes reported having their classification altered warrants further study.

Athletes were asked if they felt they were classified correctly. While there were no meaningful trends when looking at the five main classes of the IWBF classification system, athletes can also be placed in two basic categories. Category A includes those without pelvic control (class 1 and 2) and Category B represents those with pelvic control (class 3 through 4.5). There were significant differences in opinions between these two categories of athletes ($p=.010$). The majority of Category A athletes (84%) agreed with the opinion that their classification was correct, whereas higher functional level athletes, Category B, had significantly more doubts – only 49% agreed to their classification, with 36% who felt it was too high.

Discussion and conclusions

In general, it appears that all three evaluated groups believe that the current functional wheelchair basketball classification system is satisfactory. All groups indicated they prefer the functional (observational) system. Athletes and classifiers reported the current number of classes was optimal, while coaches were divided on this matter. These results do not support the results of previous research based on physical ability tests, game efficiency, physiological performance and expert experience (Brasile 1986, 1990; Thiboutot 1986; Vanlandewijck, et al., 1995; Molik & Kosmol, 2001).

Although the current system was generally reported as satisfactory, problems were identified. Almost one third of athletes reported their classification was changed during their sports career. Changes in a player's classification demonstrate a serious flaw in the classification system. When an athlete's class has been altered, and it has not been due to a change in a wheelchair setup or a change in their functional status, this change points to a flaw in the system that purports to only deal with an athlete's functional abilities versus innate talent, training, and skill level.

All groups perceived that the level of knowledge and the skills of both international and national level classifiers were satisfactory. Any doubts about the objectiveness of classifiers should be taken as a warning that better education of the classifiers, as well as the athletes and coaches, may be warranted and enforced. However, development of classifiers' skills is important. In order to have a system that is viewed as objective and fair, this perception needs to be addressed. Classification decisions have a significant effect on an athlete's

career. In these the authors' opinion is that decisions on the national level should be made within a group of classifiers. Working within the classification panel should increase the knowledge of national classifiers and eliminate any mistakes in the classification of new players. Courbariaux (1996), formerly the President of the IWBF Classification Committee, established a classification officer's Code of Ethics. To help bolster the confidence of athletes and coaches regarding the objectiveness of classification officers the IWBF should ensure that this Code of Ethics is well publicized and enforced.

Our results clearly demonstrate that athletes and coaches expect an explanation from classifiers as to how they have reached their decisions. This supports the IWBF classification philosophy as proposed by Courbariaux (1996) that the classification process is for the players. Classifiers have the responsibility to communicate clearly with athletes and coaches regarding all aspects relating to their decisions.

Apparently some athletes who think there is cheating occurring during classification still have high 'faith' in the classification system. These views are not necessarily inconsistent. People who say the system is good and indicate the existence of cheating may feel that cheating is not widespread to the extent it affects the quality of the system. It will be important in future studies to enquire about the extent and nature of cheating.

The perception that cheating occurs during the classification process was confirmed by a large number of athletes. However, the athletes reported they themselves have never cheated. This problem also existed in the medical classification system (Owen, 1982). The general consensus amongst IWBF classifiers is that the observational method employed in functional classification is more objective than the medical examination method and less susceptible to cheating. During game situations athletes present their maximum functional abilities. In this environment athletes are less likely to perform below their maximal ability and risk a poor individual or team performance. In addition, the "classification by observation" process focuses on all aspects of a player's performance including function both on and off the court. The medical classification system consists of a medical diagnosis and simple test items such as manual muscle testing, assessment of balance, and measurement of range of motion, all of which are susceptible to athlete's cheating or manipulation. However, all of this is speculation and has not been confirmed in literature. Evaluation of athletes' classification by the system based on scientific evidences seems to be the newest solution for further classification development. That system is currently promoted by the International Paralympic Committee. In fact, the strong scientific evidences help to avoid misunderstandings and manipulations during the classification process (Tweedy & Vanlandewijck, 2011; Tweedy, et al., 2014).

To be accepted, an athlete's classification should only be dependent on his/her functional abilities. To be fair, the classification evaluation must exclude any influence that innate talent, sport level, and training method might have on the classification process (Strohkendl, 2001). However, it is currently the perception of athletes and coaches that an athlete's skill level has significant influence on the athlete's classification. This may be untrue from the classifiers' point of view, but it is a misunderstanding that must be addressed. Any lack of understanding or confusion related to the justifications made in assigning an athlete's classification could be the reason that an athlete or coach would doubt the decision reached by a classifier. Better explanation of the classification philosophy of wheelchair basketball athletes is needed.

About two-thirds (69%) of the individuals participating in this study felt that women should be allowed to compete on the same team with men. Athletes and classifiers also overwhelmingly agreed that women should be allowed to play on men's teams. Coaches, on the other hand, were split in their opinion on this matter. In order to enhance the development of female basketball athletes, where often access to women's teams may be limited or the level of play is low, allowing them to play with men would only facilitate their development.

Although the argument to allow junior athlete's access to senior teams is similar as it was for women, this was not what we found in the questionnaire. Most coaches and classifiers (67% and 57%, respectively) agreed with the opinion that junior players should be allowed to play on senior teams; however, in this case, the athletes were not of the same opinion with 50% of them disagreeing. The athletes demonstrated a similar opinion regarding novice athletes. One reason for the athletes being uncomfortable with this proposal is that the junior athlete may be competing for their spot on the team or for playing time.

In most settings the participation of individuals without a physical disability in an official wheelchair basketball game is currently not legal. There are several examples where those without a disability are allowed to play at the national level such as in Canada, France and Germany. There appeared to be differing opinions within groups regarding this issue. However, the athletes' opinion seemed to be more accepting of inclusion and allowing those without a disability to participate. Allowing the inclusion of athletes without a disability could certainly be a vehicle for the sport to grow and gain a wider acceptance. However, it is a game designed for individuals with disabilities and the participation of other individuals may result in dimin-

ished participation opportunities for those athletes currently classed as 4.5 (usually minimal disability).

Our results indicated that most of athletes did not understand the classification system. It was stated that their knowledge of the system was very low. In our opinion IWBF should improve knowledge about the system. Additional functional classification trainings and educational programs for athletes, referees, and coaches could have beneficial outcomes.

While this study had a reasonable sample size for athletes (n_A=79), the sample sizes for coaches (n_C=12) and classifiers (n_{Cl}=14) were quite small. While we were able to detect differences among the three groups on nine out of 15 primary questions, when we looked more closely at the data to determine which pairs of groups contributed to these nine differences, we were only able to detect one pair-wise difference. This finding supports the need for further investigation with a significantly larger sample size.

Due to sizes of the samples, the relationships among the three groups remain statistically unclear. While the athletes clearly perceive some significant shortcomings, this study demonstrated a generalized support for the IWBF classification system. Given the integral nature of classification and its importance to the sport of wheelchair basketball, any modifications must be supported by a combination of strong qualitative physiological evidence as well as taking into account the opinion and perceptions of athletes, coaches, and classifiers. To truly understand the opinions and perspectives of these three primary constituent groups**,** additional studies are needed with larger sample sizes.

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