

Withdrawal from sport training of young talented basketball players and its impact on selection in sport

RYSZARD LITKOWYCZ, DOROTA OLEX-ZARYCHTA, MONIKA GRYGOROWICZ,
IZABELA DZIENISIEWICZ

Introduction. The effectiveness of a sport training program is determined by its adjustment to the expectations and abilities of each player. However, only 20 to 25% of players maintain their sport level after advancing from the junior to the senior category, and many of them simply give up sport training. **Aim of Study.** The aim of the study was to evaluate the scope of the phenomenon of withdrawal in young basketball players and to determine the reasons why gifted teens discontinue training basketball. **Material and Methods.** The research focused on basketball players born between 1984 and 1989, who participated in the Silesian Macroregion Team training programs in the years 1999-2003. 54 players were examined in the study (40 males, 14 females) by way of questionnaires filled in by their basketball coaches. **Results.** The obtained data obtained shows that currently only 7 subjects continue to play basketball (3rd, 2nd or 1st division), and the remaining 47 subjects discontinued basketball training completely. The reasons for giving up training basketball indicated by the coaches included lack of motivation, lack of possibilities to continue training in a senior category, and injuries. At the same time the coaches evaluated the physical and mental potential of these players including diligence, on-court intelligence, physical fitness, motor skills, and sufficient mastery of technique to continue training. **Conclusions.** Coaches should pay more attention not only to players' skills and fitness, but also to their passion, motivation for training and physical efforts crucial each player's decisions to continue the training.

KEYWORDS: basketball, predispositions, selection, young talents, withdrawal.

Received: 16 April 2014

Accepted: 19 May 2014

Corresponding author: r.litkowycz@awf.katowice.pl

Academy of Physical Education in Katowice, Department of Sport Team Games

Academy of Physical Education in Katowice, Department of Theory and Methodology of Physical Education

Higher Vocational State School in Pila, Institute of Health Protection Salesian Complex of Public Schools of St. Dominique Savio, Zabrze

What is already known on this topic?

Qualitative studies have shown that sport-specific training at a young age may, in some circumstances, lead to negative consequences such as dropout [1]. Training program characteristics such as level of intensity, type of practiced sport, developmental differences, and social aspects sport experience are all factors that must be addressed by sport scientists and practitioners alike to maintain motivation for sport training in children and adolescents.

Introduction

The literature on teenage sports includes numerous publications about player recruitment and selection, career progress, efficacy and training-related issues. However, there have been few research studies on the reasons why athletes stop training professionally [2, 3, 4, 5]. Moreover, the authors of the present study found no scientific publications discussing or explaining the reasons why talented teenagers stop training basketball. The main factors influencing basketball performance include the musculoskeletal structure, mental predispositions, anaerobic power as well as individual training and teamwork abilities [6]. The training process

requires that coaches fulfill a number of tasks which concern the:

- a) recruitment and selection of adolescents for sports, as the first step of professional sport training;
- b) training process of children and adolescents as a set of complex and organized educational and body-shaping activities;
- c) organization of sports training in children and teenagers as a group of organized factors allowing for high sports performance.

If success in sport is the goal, the candidate for an athlete must meet certain criteria at all stages of training. The adequacy of methods used for candidate evaluation and recruitment to sport-oriented school classes as well as to regional and national teams depends on the coach's knowledge and experience.

The problem of motivation for sport has been extensively studied over the last years. However, a complete understanding of the underlying processes affecting discontinuing involvement in sport training by children and youth has not been clear. Studies on team sport games reveal that a task-involving motivational climate facilitates, while an ego-involving climate undermines players' perceptions of competence autonomy and relatedness. It was observed that feeling incompetent, non-autonomous, and unrelated to others undermines self-determined motivation toward sport, which leads to the intention of dropping out, and implementation of such intentions more globally [7]. According to Boiche and Sarrazin [2] the level of involvement in training may be positively predicted by perceived competence, the value of activity for teammates, and coach's investment; and negatively by conflicts of interest and goal conflict with teammates. This suggests the great role of social factors in building a strong motivation for training in sport games. However, in the same research other factors influencing involvement in sport training included coach's mastery climate and attitude of young players' parents. Authors discriminate between proximal and more distal psychological antecedents of the dropout behavior. Also several possible targets of interventions aiming at preventing dropout from organized sport because of its rather complex character were considered [2].

Studies on basketball players proposed considering the relative age effect (RAE) as a factor that may significantly influence basketball dropout, indicating the age of 9-15 years as overrepresentation of dropouts from sport training [8]. Rottensteiner et al. [3] emphasized the role of important "others" in the life of young athletes and

indicated that coaches and teammates appeared to be the two main groups of significant "others" who influenced young players' decisions about their sport withdrawal. They also suggested that having other things to do and a decline in excitement may be the most important reasons for withdrawal from team sports. However, there are few studies related to personal reasons for withdrawal from training by young, gifted players with a high potential for becoming future master players.

The effectiveness of the training process, particularly in its early stages, will be greatly determined by the ability to adjust the process to the athlete's expectations and skills. It often happens that the efforts aimed at young athletes to achieve very good sport results may cause adverse consequences, making many talented individuals stop training prematurely [1, 8, 9]. On the other hand, it is clear that regardless of other factors, any development (including athletic one) will be directly shaped by the individual's commitment and activeness [2, 4].

There have been reports on physical activity and issues related to starting and withdrawing from training. Factors affecting motivation and effectiveness of such activities include mental and emotional issues related to the subjective perception of physical effort, the atmosphere of trainings [4, 10], motivational factors [11, 12, 13, 14], social aspects [15, 16] and others [3, 4, 5]. However, there has been no similar research regarding professional basketball players. It is therefore necessary to identify factors enabling teenage basketball players to achieve their master performance, and the reasons why gifted teenage players stop training basketball.

Aim of Study

The aim of the study was to identify some factors, psychosocial ones, affecting basketball players' decisions to discontinue sport training. An in-depth analysis of these factors will contribute to the improvement of the quality of sport training of young people in both content and motivation.

Material and Methods

In order to identify the reasons why gifted adolescents drop out from basketball training, the authors used an indirect diagnostic opinion questionnaire. An original survey was used, which comprised four close-ended and two open-ended questions as well as participants' basic personal data. The survey was carried out on June 13, 2009, during the 3rd Silesian Teen Basketball Gala

in Ruda Śląska, Poland – a sport event concluding the youth 2008-2009 basketball season. The questionnaire survey included 54 basketball players (40 males, 14 females) born between 1984 and 1989, who had participated in the Silesian Macroregion Team training programs in 1999-2004.

The questionnaire was completed by 23 coaches (20 men and 3 women) who had coordinated the training of players in the Silesian Macroregion Team between 1999 and 2003. The coaches were aged 33 to 65 years and had a university education; 80% of them were 2nd class coaches and 20% were basketball instructors. Personal data did not influence the survey responses in any significant manner.

Results related to the reasons for withdrawal of young players from basketball training were analyzed and discussed, taking into consideration the sport selection process and its possible links between with these reasons.

Results

The Silesian Macroregion Team training camps were organized between 1999 and 2003 for talented teenagers from the region. These young players recruited from a broad Regional Senior Youth Team were the subjects of the study.

The research was to show the career progress of gifted players 10 years after their first training in the Silesian Team. In total, 54 subjects were taken into consideration: 40 boys and 14 girls.

The obtained data shows that currently only 7 subjects continue to play basketball (in the 3rd, 2nd or 1st league), and the remaining 47 subjects discontinued basketball training completely (Table 1).

The teenagers who participated in the study were talent-identified by their coaches and thus qualified as members of the Silesian Macroregion Team. The level of their athletic performance was evaluated as good and average in the majority of subjects, and very good in 6 subjects; none of the players was assessed as poor or very poor (Table 2).

When answering the first question of the survey, the coaches classified the players into different sport levels, which allowed for assigning a final mark. The answers to other questions allowed for defining the detailed percentage of ontogenetic traits in the personality descriptions of the players participating in the study. The coaches were asked to indicate the ontogenetic traits and their intensity in individual players (Table 3).

The coaches assessed the levels of six ontogenetic traits (uncorrelated), i.e. volitional traits, diligence, on-court intelligence, physical conditions, motor skills, and displayed technique (very low, low, average, high, very high) in the players they trained in the Silesian Macroregion Team. Apart from evaluating players’ potential, they also attempted at describing their effectiveness of using the potential during sport events. There is very often a disparaging gap between the potential a player has and his/her ability to use it in a game. However, the most important research issue was to reveal the reasons why gifted teenage players stop playing basketball [1, 2, 3, 4, 5, 8, 13, 15, 16, 17]. The study results revealed (Table 3) that coaches estimated that of all six ontogenetic traits of basketball players the subjects displayed a very high level of physical conditions, and high levels of motor skills, physical conditions and on-court intelligence. They displayed average levels of technique and volitional traits, and the highest number of poor marks were given for diligence.

The questions which evaluated the effectiveness of using one’s potential during sport events brought different results.

It is common knowledge that there is a difference between “having a trait” and “effectively putting it to use”. Volitional traits, which include, among others, persistence, determination, strong will, etc., allow for individual and team progress and development as well as optimal use of one’s potential on the court. Coaches believed that 58 percent of the players displayed an

Table 1. Training vs non-training basketball players

Answer	Does the player still train?	
	Number of players	%
YES	7	13
NO	47	87

Table 2. Evaluation levels of basketball players

Answer	How do you evaluate the player?	
	Quantity	%
Very poor	0	0
Poor	0	0
Average	14	30
Good	27	57
Very good	6	13

average level and 28 percent a high level of volitional traits. Very few subjects displayed very high or very low levels of the traits (3 and 11 percent, respectively) (Table 3).

The effectiveness of using the potential by the players is presented in Table 5. As many as 57 percent of players used their volitional traits in the game at an average level, and 9 percent used their traits in 100 percent. There was not a single player who did not use his/her potential at all.

Diligence is very important in the training process. It is the trait that guarantees progress in various aspects of individual training. The research proved that most of the players (42 percent) displayed an average level of diligence, and fewer (30 percent) – a high level of diligence. Moreover, the coaches' opinions revealed that the macro-regional training program also included players displaying low levels of diligence (15 percent). The low interest in training and laziness were typical among those players. The study showed there were very few players (13 percent) who were very much involved in the training. Diligence is a decisive factor

in a player's development during sport training. The analysis of results proves that 70 percent of players used the trait. Only 7 players fully used their potential in training (Table 4).

On-court intelligence is also of key importance for basketball players [6]. It determines the effective use of individual potential (game skills and general fitness), allowing advancement to senior-level basketball. The majority of players displayed high and average on-court intelligence levels (47 and 38 percent, respectively). Only some subjects were characterised by high and low on-court intelligence (9 and 6 percent, respectively). The effectiveness of using one's on-court intelligence, i.e. "reading the game", is the best tool used to select players in the league and for the national teams (MU-18, MU-20, seniors). Coaches select those players for the MU-20 National Team who make good decisions during the game. Other traits such as physical conditions, volitional traits, motor abilities, and technique are usually on a similar level. The ability of effective thinking was evenly distributed as "used extensively", "used to some extent" and "used a little". Only 3 players used it in 100 percent.

Table 3. Coaches' evaluation of basketball players

Trait	How do you evaluate the players you coached (from 1 to 5)?									
	1		2		3		4		5	
	very low		low		average		high		very high	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Volitional traits	0	0	5	11	27	58	13	28	2	3
Diligence	0	0	7	15	20	42	14	30	6	13
On-court intelligence	0	0	3	6	18	38	22	47	4	9
Physical conditions	0	0	5	11	10	21	25	53	7	15
Motor skills	0	0	3	6	19	40	21	45	4	9
Technique	0	0	3	6	22	47	18	38	4	9

Table 4. Use of traits by basketball players

Traits	To what degree, in your opinion, did the player use the following traits in basketball?									
	did not use at all		used a little		used to some extent		used extensively		used in full	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Volitional traits	0	0	9	19	27	57	7	15	4	9
Diligence	0	0	13	28	19	40	8	17	7	15
On-court intelligence	5	11	8	17	15	32	16	34	3	6
Physical conditions	2	4	4	9	12	25	18	39	11	23
Motor skills	0	0	4	9	12	25	25	53	6	13
Technique	3	6	12	26	17	36	9	19	6	13

Physical conditions are a crucial trait in basketball and they determine the level of the game. They are also a factor used for the recruitment and selection of children and adolescents to play basketball. Coaches, while evaluating the physical conditions of their players, confirmed that the greatest number of Silesian Macroregion basketball players were characterised by a high (53 percent) and a very high (15 percent) level of physical conditions; average physical conditions were noted in 21 percent of players. Apparently, the coaches of the Silesian Macroregion Team had recruited mainly tall, strong teenagers in early puberty. Among the examined players only 11 percent displayed poor physical conditions.

Another important trait used in the basketball recruitment and selection procedure, beside physical conditions, is general fitness. A large part of coaches estimated that 45 percent of players were highly fit, 40 percent – average fit, and only 9 percent – very highly fit. It shows that this trait was highly significant in the selection of teenagers for the Macroregion Team, as proven by very few basketball players with low motor abilities (6 percent). Motor abilities turned out to be a dominating trait in basketball players, when analyzing the effectiveness of their use for the game. 91 percent of subjects were able to effectively use their general fitness to a moderate, high or maximum degree.

The final trait that completed the description of the players was the level of their technical skills. In the whole sample a high level of technical skills was shown by 38 percent of players, average – by 47 percent; while only 6 percent displayed a low level and 9 percent a very high level of technical skills.

The analysis of coaches' opinions related to players' game skills shows there is no clear domination of effective usage of the trait in the game. It should be emphasized that 62 percent of players displayed a low or average level of effectiveness of using the trait in the game.

Among 54 basketball players who participated in the macroregional training when they were 14, only 7 “survived” the years of training and advanced to senior teams (Table 2); others stopped training basketball (Table 2). The surveyed coaches when asked about the reasons why the gifted teenagers discontinued training basketball most often gave the following ones: lack of motivation, lack of possibilities to continue training in a senior category, injuries, no senior team available, difficulties with commuting to trainings and moving abroad (Table 5).

Discussion

Sport success is a cumulated effect of years of wise training, which begins most often in the early stages of one's development. The first task in the perennial process of basketball player training is the recruitment of individuals with a potential to achieve an advanced level of sport performance in the future. The task of finding a future champion at an early age is not an easy one; many questions need to be answered and doubts resolved, and all actions must be careful and deliberate [3, 6, 18, 19]. It often happens that gifted teenagers who are successfully recruited to become players stop training.

It should be noted that the effectiveness of the training program, particularly at its early stages, is highly conditioned by the adjustment of the training process to players' expectations and abilities. The expectations are related to the immaturity of the recruited individuals, who are teenagers or even children [8, 20].

People responsible for player recruitment from among children and teenagers should pay particular attention to candidates' volitional traits, diligence, on-court intelligence, physical conditions and technique (coordination, “feeling the ball”, ball-handling abilities, etc.) [6]. It is not possible to find a candidate or a player who would display model levels of all traits important in a given sport. According to

Table 5. Reasons for discontinuing training and not achieving the master level by basketball players

In your opinion, what was the reason for discontinuing training and not achieving the master level by the player?		
Reason	Quantity	%
Injury	8	17
No motivation	25	53
No senior group	8	17
Problems with commuting to training sessions	5	11
Moving abroad	1	2

Kovar [21], Zaciorski and Bułgakowa [22] the incidence of highly gifted individuals in society is lower than 0.2 percent. Rygula [19] shows that a candidate for a top class player must display a high level of at least three traits, and the chances of finding such an individual (on condition that the features are not correlated) are lower than one per million.

The research results (Tables 1, 2, 3, 4, 5) show that 73% of basketball players who trained between 1999 and 2004 in the Silesian Macroregion Team stopped training, even though most of them were evaluated by their coaches as “players with a potential”, and displayed a high level of somatic and motor traits and mental predispositions (on-court intelligence). The most common reasons for discontinuing sports and failing to achieve the master level were lack of motivation, lack of possibilities to continue training in a senior category, injuries, and moving abroad. High levels of intellectual predispositions, motor abilities, and somatic traits do not guarantee achieving a master level in basketball. Furthermore, the coaches participating in the survey estimated that over one half of the players were average and poor in regular training, and lazy, claiming that “they did not feel like training”. The description of subjects in the analysis of their volitional traits is the most negative one: 70 percent of players were assessed as average (Table 3).

The results allow for a certain generalization. The recruitment and selection of individuals for sport training should assume a combination of two factors: interest (Does he/she want it?) and abilities (Is he/she able to?). On the one hand, it is clear that regardless of any other conditions, one’s sport development will be a direct result of one’s dedication and initiative. Training sessions that are interesting, well-organized, carried out in a positive atmosphere, are favored by young players. The satisfaction that appears results most of all from the improvement of skills, fitness and contact with other people: further positive feedback loops can be noted as well [4, 10, 20]. On the other hand, we witness successes achieved at a young age by early-developed children; later on, however, their late developed peers prevail (longer careers). One may wonder, whether a coach’s goal is to lead dozens of players to become “champions” in junior categories, or to bring up one Olympic champion? [1, 8, 18].

The research revealed that out of six ontogenetic traits (makings) of Silesian Macroregion basketball players,

the coaches most often described the players as having very good physical conditions, good motor skills and physical conditions and on-court intelligence. The players were described as average in terms of their technique and volitional traits, and the majority of them received low notes in diligence. It is not surprising that their game skills were evaluated as average, as a short training career never results in a high level of technical skills. It is also logical that physical conditions were a dominating trait in these basketball players. Many coaches see that as a main prerequisite, and some, unfortunately, as the only requirement for recruitment. A high level of general fitness might also be illusive; it often describes the biological age of young players, and when we compare it with the calendar age, the difference might be up to 5 years.

According to Sankowski [20], a teenager with extraordinary makings of skills does not have to develop into an extraordinary player. Often, the level of skill development does not have to match the level of makings. Żebrowska [23] also shares this view and notes that the same skill may develop on the basis of various makings, and the same makings may lead to the development of various skills. However, the most important claim is that between the makings and the dynamics of skill development is players’ diligence, involvement and hard work.

The importance of diligence in the basketball player model is confirmed by the world’s best basketball player in history, Michael Jordan, who said there had been many players who had been stronger and faster, but nobody had put their heart into training as he had [24].

There is no question that motor skills affect the athlete’s sport performance, but achieving even a master performance level in any discipline does not have to be preceded by equally perfect makings. Many outstanding “craftsmen” did not have perfect makings, but achieved perfection and master level unattainable to others thanks to their heroic work, involvement, and well-organized training process [20, 25].

Also, it is not easy to recognize the makings of an athlete in early stages of his/her ontogenesis. Thus, stating that someone has them or not might be incorrect.

Thus the research question might be viewed in terms of correctness of recruitment (to the Silesian Macroregion Team) and in terms of the effectiveness of the coach’s work in the club.

The first aspect, i.e. recruitment for basketball, particularly on the regional and national team level, should account more for the candidates' mental predispositions (volitional traits, diligence and on-court intelligence). With so many different traits affecting the sport result in basketball, problems that exist in some parameters might be compensated for by extremely strong other traits or features that are important for sport results in the given discipline. Therefore, there is a variety of basketball players – “atypical” players – who achieve good sport results. There is only one condition, however: nothing will compensate for the lack of diligence and volitional traits.

Modern sport proves that mental features play a key role in reaching the top. According to Graczyk [26], the basketball player Marcin Gortat is a prime example of an athlete with the so-called inner-directed personality. The player feels that the whole strength is deep inside, and his whole motivation comes from the inside. Money and fame are only additions to his objective. There were other Poles before Marcin Gortat who attempted to conquer the NBA courts, but they returned to Europe only after several minutes of play in the USA. What they lacked was not skill but character. To be drafted for the NBA, one must not only have the talent and determination. A true passion is a must; it takes a player to a different level. Experts emphasize that Gortat displays perfect agility, diligence and physical conditions. But what makes him stand out among Polish athletes is his mindset. During interviews he is self-confident, but never arrogant.

Considering the other aspect, training errors made by coaches can be of great importance. According to Szyzko-Bohusz [27] the first and most basic goal of every coach's work is undoubtedly to inspire and develop the passion for physical activity, and establish it as a true value necessary for human life, regardless of the need to develop healthy habits and general fitness. Young people most often explain the reasons for discontinuing training as changing interests, getting bored with sports, and having no more fun in doing sports. They also indicate objective reasons: health issues, other duties, conflicts with the coach, lack of sport achievements and limited free time [3, 11, 12, 13, 15, 28].

The study results show that there were fewer cases of objective reasons (injury, moving abroad, no proper age category) for discontinuing basketball (47

percent); 53 percent of players claimed that lack of motivation was the main reason for discontinuing basketball trainings. Earlier studies confirm this view and stress that motivation in professional sport is a complex mental-bio-social phenomenon related to both the perception of the expected result, and to the emotionally secure situation during training created by the coaches and team members alike [2, 3, 9, 15]. The lack of motivation for further training can also be affected by the burnout syndrome, related to low self-esteem, and frustration, e.g. due to a failure [1, 12, 16]. Our research clearly shows that mental, emotional and social factors connected with the influence of the training process on the athlete's motivation and self-esteem, are crucial in junior sport. Therefore, it is the coach and his/her abilities to create an emotionally secure atmosphere during training sessions, his behavior in the face of victory, defeat and injury, or a period of poorer performance of the team, that can have the greatest influence on the players' decisions to discontinue practicing sports. Interpersonal relations in the team are also important.

Our results indicate that to maintain a high level of motivation the role of “important others” with a special role of the coaches is undeniable in youth sport, which corresponds with the findings of Rottensteiner et al. [3]. The results of this study pose a question whether the quality of coaches' work in players' home clubs can be evaluated. The issue of both diagnosis and evaluation of teaching methods as well as overall educational approach in basketball training involving young players require special attention in future research regarding reasons for withdrawal from basketball among young players.

Conclusions

There are many factors that influence sport success. These range from proper recruitment of individuals with the potential to achieve good sport results thanks to traits crucial in a given discipline, appropriate involvement, activities displayed by the player, and the ability to adjust the training process to the trainee's expectations. The following conclusions can be drawn from the present study:

1. The most common reason for discontinuing training and failing to achieve the master level in sport are lack of motivation, lack of possibilities to continue training in a senior category, and injuries.

2. During selection and training of basketball players, particular attention must be paid to such players' mental predispositions as diligence and aspirations to maintain the high level of motivation to continue basketball training.

What this study adds?

The novelty of our approach is the selection of research materials. We concentrated on seeking personal reasons for discontinuing basketball training in a selected group of young players with a special potential to become master players in the future. The study discusses the problem of dropout from sport training in relation to sport selection and future planning of young basketball players' development.

References

1. Wall M, Côté J. Developmental activities that lead to dropout and investment in sport. *Phys Educ Sport Ped.* 2007; 12(1): 77-87.
2. Boiché J, Sarrazin P. Proximal and distal factors associated with dropout versus maintained participation in organized sport. *J Sports Sci Med.* 2009; 8: 9-16.
3. Rottensteiner Ch, Laakso L, Pihlaja T, et al. Personal Reasons for Withdrawal from Team Sports and the Influence of Significant Others among Youth Athletes. *Int J Sports Sci Coach.* 2013; 8(1): 19-32.
4. Butcher J, Lindner KJ, Johns DP. Withdrawal from Competitive Youth Sport: A Retrospective Ten-Year Study. *J Sport Behav.* 2002; 2 (25): 145-163.
5. Ryska TA, Hohensee D, Cooley D, et al. Participation Motives in Predicting Sport Dropout among Australian Youth Gymnasts. *N Am J Psychol.* 2002; 4(2): 199-210.
6. Litkowycz R, Andryszczak M. Proces naboru i selekcji w koszykówce (The process of recruitment and selection in basketball). In: Zając A, Waśkiewicz Z, eds., *Nauka w służbie sportu wyczynowego.* AWF, Katowice. 2007; 173-205.
7. Sarrazin P, Vallerand R, Guillet E, et al. Motivation and dropout in female handballers: a 21-month prospective study. *Eur J Soc Psychol.* 2002; 32: 395-418.
8. Delorme N, Chalabaev A, Raspaud M. Relative age is associated with sport dropout: evidence from youth categories of French basketball. *Scand J Med Sci Sports.* 2011; 21: 120-128.
9. Bortoli L, Bertollo M, Comani S, et al. Competence, achievement goals, motivational climate, and pleasant psychobiosocial states in youth sport. *J Sport Sci.* 2011; 29(2): 171-180.
10. Kwan BM, Bryan AD. Affective response to exercise as a component of exercise motivation: attitudes, norms, self-efficacy, and temporal stability of intentions. *Psychol Sport Exerc.* 2010; 11: 71-79.
11. Weiss MR, Petlichicoff LM. Children's Motivation for Participation in and Withdrawal From Sport: Identifying the Missing Links. *Pediatr Exerc Sci.* 1989; 1: 195-211.
12. Gustafsson H, Hassmen P, Podlog L. Exploring the relationship between hope and burnout in competitive sport. *J Sport Sci.* 2010; 28(14): 1495-1504.
13. Petlichkoff LM. Youth Sport Participation and Withdrawal: Is It Simply a Matter of FUN? *Pediatr Exerc Sci.* 1992; 4: 105-110.
14. Rose EA, Parfitt GA. Quantitative analysis and qualitative explanation of the individual differences in affective responses to prescribed and self selected exercise intensities. *J Sport Exerc Psychol.* 2007; 29(3): 281-309.
15. Keathley K, Himelein MJ, Srigley G. Youth Soccer Participation and Withdrawal: Gender Similarities and Differences. *J Sport Behav.* 2013; 2(36): 171-188.
16. Cervelló M, Escartí A, Guzmán J. Youth sport dropout from the achievement goal theory. *Psicothema.* 2007; 19(1): 65-71.
17. Fraser-Thomas J, Côté J, Deakin J. Examining Adolescent Sport Dropout and Prolonged Engagement from a Developmental Perspective. *J Appl Sport Psychol.* 2008; 20: 318-333.
18. Kosendiak J. Wielostopniowy system naboru i selekcji do wyczynowego uprawiania sportu (Multilevel system of recruitment and selection for competitive sport). In: Kurzakowski K, ed., *Strzelectwo Sportowe.* Wrocław. 2007; 4.
19. Ryguła I. Elementy optymalizacji procesu doboru do szkolenia na przykładzie skoku wzwyż (Elements of optimization in process of recruitment for training on example of high jump). UŚ, Katowice; 1988.
20. Sankowski T. Psychologiczne uwarunkowania aktywności sportowej podejmowanej w młodym wieku (Psychological determinants of sport activity in young people). In: Wlazło E, ed., *Sport młodzieżowy w badaniach psychologicznych.* AWF, Wrocław. 2005; 80: 15-30.
21. Kovar R. Human variation in motor abilities and its genetic analysis. Carlowa Univ. Press, Praga; 1980.
22. Zaciorski M, Bułgakowa Z. Teoretyczne podstawy selekcji sportowej (Theoretical background of sport selection process). *Sport Wyczyn.* 1975; 7.
23. Żebrowska M. Psychologia rozwojowa dzieci i młodzieży (Developmental psychology of children and youth) (ed.). PWN, Warszawa; 1986.

24. Lowe J. Mówi Michael Jordan. Refleksje największego koszykarza XX wieku (Michael Jordan speaks. Reflections of the best basketball player of the 20th century). Wyd. A. Liber; 2000.
25. Sankowski T. O potrzebie rozwijania u dzieci zamiłowań do aktywności ruchowej (On the need to develop an interest for physical activity in children). *Kultura Fiz.* 1994; 3-4.
26. Janiszewski B. Polak z kosmosu (A Pole from Space), *Newsweek.* 2009; 38.
27. Szyszko-Bohusz A. Pedagogika holistyczna, czyli przezwyciężenie kryzysu wychowania (Holistic pedagogy or overcoming the crisis in education). *Nowa Szkoła.* 1981; 5.
28. Winiarski R. Aktywność sportowa młodzieży (Sport activity in youth). AWF, Kraków. 1995; 86.