

DIFFERENCES BETWEEN PE TEACHERS AND PE EXPERTS PERSPECTIVES ON THE TALENT RECRUIT FACTORS

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ABSTRACT

Talents recruit is one of the key concepts in sport science and physical education. Athletic talent recruit objectively means identification of persons in comparison with others, with ability for a specific sport. Talents recruit and education is an important part of most sports programs. The aim of this study was to investigate differences in the views of experts and teachers of physical education focuses on the characteristics of sports talent. The population of the study consisted of all sports experts and physical education teachers in Tehran (N=1574), and Tehran counties (N=1744); also there are no accurate statistics on physical education experts. The study sample were purposefully selected based on Sharp Cochran (1979) and consisted of 103 PE teachers and 103 PE experts, with the mean age of the first group (PE teacher) 24/32 years and 11/58 years of experience and the mean age of the second group (PE experts) 32 /98 years and 9/27 years of experience, data collection tool was a questionnaire containing 40 questions that its content validity was assessed by physical education experts using test-retest with the reliability coefficient of 0.896. Kolmogorov–Smirnov test was used to investigate the normal distribution of data that determined the data distribution was not normal. Then, non-parametric Mann–Whitney U test was used. The results showed that there was a significant difference between PE teachers and PE experts regarding anthropometric variables especially in Mother sports ($P \leq 0.001$), but there was no significant difference regarding the effect of these variables in Ball and Racket sports. There was a significant difference between PE teachers and PE experts regarding physiological variables especially in Racket sports ($P \leq 0.001$), but there was no significant difference regarding the effect of these variables in Ball and Mother Sports. Moreover, there was no significant difference regarding motor and fitness variables in Ball and Racket Sports. There was a significant difference between PE teachers and PE experts regarding biomechanical variables in Mother and Ball sports ($P \leq 0.01$) and Racket sports ($P \leq 0.05$), There was a significant difference between PE teachers and PE experts regarding psychological variables in Ball and Racket sports ($P \leq 0.05$) but there was no significant in Mother sports.

Keywords: PE Teachers, PE Experts Perspectives, Talent Recruit Factors

INTRODUCTION

Every individual wants to do an exercise based on his interest or talent. Taking into consideration the individual differences and its relativity is important in talent recruit. It is not just to call someone absolutely talented and the other without any. Since talents are somewhat specific, individual may be predisposed to certain activities and less talented in other activities (Lim and Miller, 1989)

The process of discovering talented athletes to participate in a structured training program is one of the main topics that are discussed for years in sports. Everyone can sing, paint or play a musical instrument, but few reach high levels of skill and dominance. So, in the sport as an art, recruiting talented people and their choices, then directing, controlling and evaluating them to the highest level of skill is important (Liu, 2003)

Formulating a purposeful national plan for championship rearing requires proper planning and athletic talent recruiting maybe one of the fundamental steps of the formulation (a program of the National Championship (Hart, 1998).

Quoted by Cabral (2011), people are different in terms of human body size, shape, and body composition; some of them are genetic aspects and may be affected by environmental factors such as physical activity,

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nutrition, etc. Therefore, having some anthropometric, biomechanical, physiological and psychological traits are the major factors of success in the sport (Mikulec *et al.*, 2001).

With full knowledge of the anatomical, physiological and biomechanical information and general fitness of the body not only to the player is chosen ideally, but its strengths and weaknesses can be discovered and accordingly, the appropriate training program would be designed.

Several studies have been conducted in the area of talent recruit, given the importance of it.

Anthropometric Research

Spher (2000) in a comparative study of some anthropometric, physiological and general physical fitness characteristics of female volleyball players of championship status, Milekohan (2006), in a study entitled "Description of some anthropometric characteristics and physical fitness of the elite football players", Duncan *et al.*, (2006) paper in a study of anthropometric and physiological indices in volleyball players", Gabet *et al.*, (2007) in a study entitled "The anthropometric characteristics of national state, and novice elite players of the volleyball on effectiveness of anthropometric indicators of talent recruit (British Lawnmower Museum; Koh *et al.*, 2008; Patterson, 1981; Pfaffl, 2001).

Physiological Research

Perno (2004) in a study of physiological and anthropometric profiles of Iran elite futsal players, Rasoli (2006), in a study entitled anthropometric, psychological, motor and physical fitness characteristics profile of karate kata and kumite invited to the Iran national team, Bakker *et al.*, (1994), in research on physiological and anthropometric aspects of speed skating team of 24 athletes of the German youth, Pearson *et al.*, (2006) in a study of the physiological parameters and maturity in talent recruit for teens team sports paid attention to the role of physiological parameters in talent recruit (Dhandapani *et al.*, 2005; Horner and Palmer, 2003; Lu *et al.*, 2005; Wang *et al.*, 2002).

Motor and Physical Fitness Research

Imami (2011) in a study of describing the evaluation of body composition, physiological and motor physical fitness indices of Imam Ali (AS) officer students and Bagheri (2011) on "developing norm indices of talent recruit in elite male volleyball players aged (17 to 23 years)", Gal *et al.*, (2010) in their study on indicators of talented recruit on football players paid attention to in the role of motor physical fitness in sports talent recruit (Brenner *et al.*, 2001; Broer and Brookes, 2001; Ronaldson *et al.*, 2009).

Biomechanical Research

Hazrati (1996) in a study examining "the relationship between anthropometric and biomechanical characteristics of elite swimmers", Farhadpor (2008) in a study of biomechanical features and kinematics analysis, motor control, anthropometric and muscle strength in Pahlevani and zoorkhaneh elite athletes compared with normal individuals", Carvajal *et al.*, (2009) in a study entitled "Evaluation of body type and performance in elite baseball players of Cuba", Milanese (2010) in a study of the anthropometry and biomechanical factors in 6-12 years old children paid attention to the role of biomechanical factors in sport talent recruit (Hanani, 2005; Koehler *et al.*, 2009; Naoko and Shinichi, 2003; Seth and Koul, 2008).

Psychological Research

Hatami and Mihandoost (2004) in an article entitled "psychological skills of elite and non-elite volleyball players", Reza (2008) studying the elite basketball sport competitive anxiety and its relationship with sports injuries, Korkmaz (2009) in their study about the impact of EQ in sport talent recruit, Vasiliki (2009) in their study of the relationship between EQ and taekwondo and judo players performance paid special attention to the role of psychological factors in athletic talent recruit (Dwivedi, 2009; Krishnan *et al.*, 2003; Ruffy, 2006)

According to various studies and research plan by experts on different aspects of athletic talent recruit and considering the knowledge gained from feature detection effect can be a useful guide for PE teachers and expert's in regular scientific programming, this study aims at investigating the differences in attitudes between the physical education teachers and physical education experts in athletic talent recruit. It is hopeful, getting familiar with the views of teachers and experts, steps is taken to plan regular programs to develop sports talent recruit in the best and most economical way.

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MATERIALS AND METHODS

Research Methodology

This research was a survey conducted as a field study, the researcher visited Shahid Rajaei Teachers Training, Al-Kharazmi, Al- Zahra, PNU, and Azad Universities, in addition studied specialized resources and databases available and the talent recruit process reviews to find the most important parameters and criteria for identifying the difference between the viewpoints of PE teachers and PE experts. Descriptive statistics analysis method was used to describe the findings (tables, graphs, mean, etc.) and inferential statistics (correlation coefficient at 0.05 levels) was used, as well.

In this study, the researcher intends to help PE teachers and PE experts the decision making process for the selection of talented people using further understanding to spend the least money, energy and time.

Population and Study Sample

A population of the study consisted of all physical education teachers in Tehran (N=1574), and Tehran counties (N=1744); and sports experts including university professors, experts and top sports coaches with master's degree or higher (accurate data is not available).

The study sample was selected based on Sharp Cochran (1979) and consisted of 103 PE teachers and 103 PE experts.

Data Collection Tools and Methods

A research made questionnaire was given to samples in order to collect the views of PE teachers and PE experts. First, a questionnaire containing twenty two open questions were designed and were distributed among a trial group of 30 samples, then a closed questionnaire was provided using the open questionnaire responses. Then the questionnaire was given Shahid Rajaei Teachers Training, Al-Kharazmi, Al- Zahra, PNU, and Azad Universities to determine the content validity of the questionnaire. Their comments were used to prepare the final questionnaire and the reliability of 0.896 was obtained by test-retest method.

The researcher carried out a questionnaire to collect data manually between PE experts and PE teachers and the necessary guidance were provided by the researcher. The questionnaire consisted questions about the impact of sports talent recruit indices of talented beginners on mother, rocket and ball sports as well questions related to anthropometric, physiological, biomechanical, motor and physical fitness and psychological factors.

Statistical Analysis Methods

Descriptive statistical methods were used to analyze the information contained in the questionnaire responded by teachers and expert practitioners. Drawing diagrams and indices of central tendency and the priorities defined by the parameters of talent recruit were used for classification of data. Parametric statistics was not responsive. Applying Kolmogorov–Smirnov test found that the data was not distributed normally, so, nonparametric Mann-Whitney test with the significance level of $p \leq 0.05$ was used SPSS version 19 was used for data analysis.

RESULTS AND DISCUSSION

Findings

Kolmogorov-Smirnov Test showed that the data are not normally distributed so non-parametric Mann-Whitney test was used to test the hypothesis at the $P \leq 0.05$ level of significance.

Table 1: The mean scores of the 15 questioning on the effectiveness of the proposed measures in talented beginners

Indices	mother	ball	Rocket
Anthropometry	4.38	40.4	3.73
Physiological	4.17	4.10	3/70
Physical and motor fitness	4.37	4.17	4.13
Biomechanical	4.04	3.98	3.98
Mental	4.01	3.95	3.97

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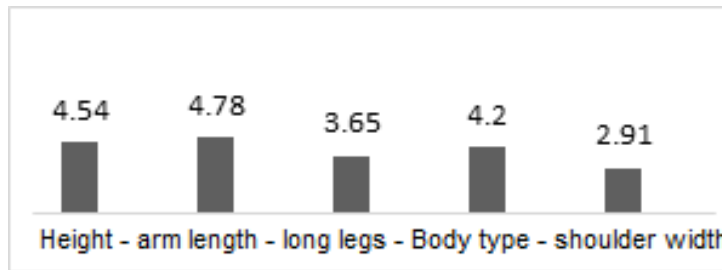


Chart 1: anthropometric indices mean rating

Analyzing the mean of responses showed that hands length index of 4.78% indicated the maximum effective response in the desired field and Shoulder width index of 2.91% indicated the minimum effective response in the desired fields.

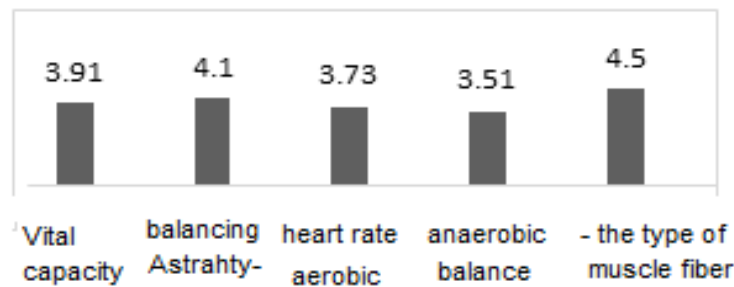


Chart 2: Physiological indices mean rating

Analyzing the mean of responses showed that muscle fiber type index of 4.50 indicated the maximum effective response in the desired field and anaerobic power index of 3.51 indicated the minimum effective response in the desired fields.

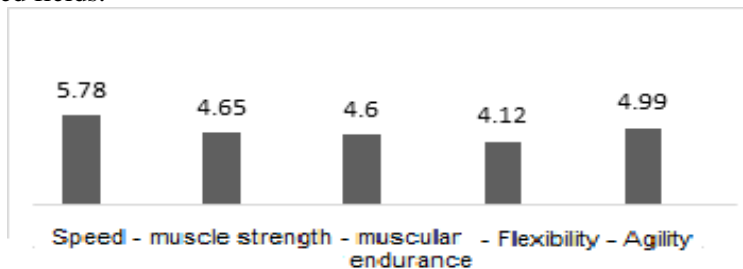


Chart 3: Physical and motor fitness indices mean rating

Analyzing the mean of responses showed that agility index of 5.78 indicated the maximum effective response in the desired field and flexibility index of 4.12 indicated the minimum effective response in the desired fields.

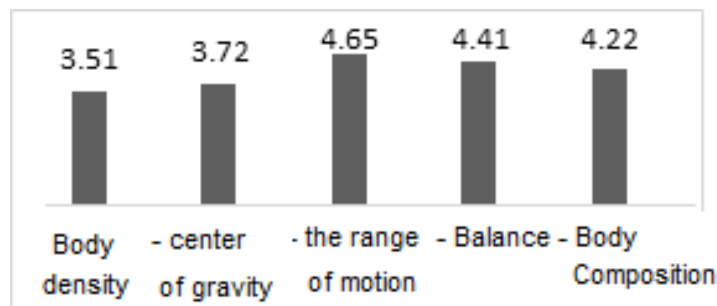


Chart 4: Biochemical indices mean rating

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Analyzing the mean of responses showed that Joint motion range index of 4.65 indicated the maximum effective response in the desired field and body density index of 3.51 indicated the minimum effective response in the desired fields.

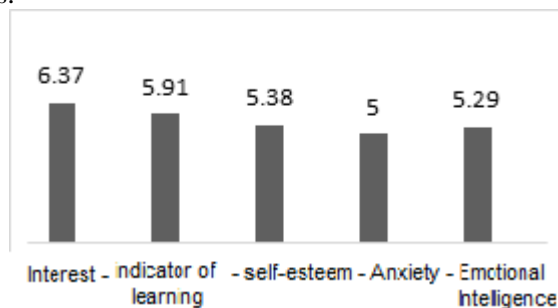


Chart 5: Psychological indices mean rating

Analyzing the mean of responses showed that interest index of 6.37 indicated the maximum effective response in the desired field and competitive anxiety index of 5 indicated the minimum effective response in the desired fields.

Table 2: Mann–Whitney U Table studying the effects of talent recruit indicators on Mother, Ball and Racquet sports

Psychological		Biomechanical		Motor and body fitness		Physiological		Anthropometric		Sport fields
P	U	P	U	P	U	P	U	P	U	
0.066	45.60	0.004	45.60*	0.564	50.83	0.819	52.14	0.001	40/78*	Mother
0.017	43.35*	0.002	40.44*	0.788	51.98	0.229	48.24	0.995	53.02	Ball
0.042	44.78*	0.039	44.63*	0.313	49.01	0.001	39.64*	0.095	46.03	Racquet

P value observed in the Mother, Ball and Racquet sports in anthropometric indices equal to (P=0.001); Racquet sports in physiological index (P=0.001) and in Mother and Ball sports (P≤ 0.01) and Rockets (P≤ 0.05); in biomechanical index in Mother, Racquet and Ball sports (P0.05≤) and in psychological index less than 0.05, respectively; therefore the null hypothesis is rejected. Thus, there is a significant difference between the PE teachers and PE experts. There is no significant difference between the PE teachers and PE experts regarding Racquet and Ball sports in the anthropometric index, and Mother and Ball sports in the physiological index, and motor and physical fitness index in Mother sports in psychological index that P is greater than 0.05 ; therefore the null hypothesis can be confirmed.

Table 3: Mann–Whitney U Table of anthropometric factors

Shoulders width		Body type		leg length		Hand length		Height		Index
P	U	P	U	P	U	P	U	P	U	
0.000	37.50*	0.005	41.25*	0.082	45.72	0.666	51.21	0.095	46.03	anthropometric

P value observed in the height and length of arm and leg length factors is greater than 0.05; therefore, the null hypothesis is verified. So, there is no significant difference between the PE teachers and PE experts. Also, the null hypothesis is rejected regarding body type factor (P≤0.01) less than 0.05, so there is a significant difference between the PE teachers and PE experts.

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Table 4: Mann–Whitney U Table of physiological factors

Muscle fiber type		Anaerobic power		Aerobic power		Heart rate at rest		Vital capacity		Index
P	U	P	U	P	U	P	U	P	U	Physiological
0.002	39.75*	0.001	38.74*	0.026	43.66*	0.189	47.50	0.002	39.91*	

P value observed in the heart rate at rest that is greater than 0.05 confirmed null hypotheses; so there is no significant difference between PE teachers and PE experts. In vital capacity factor and the muscle fiber type ($P \leq 0.01$) and anaerobic power ($P=0.001$) and aerobic power ($P \leq 0.05$) since P value is less than 0.05, the null hypothesis is rejected, thus there is a significant difference between the PE teachers and PE experts.

Table 5: Mann–Whitney U Table of motor and physical fitness factors

Agility		Flexibility		Muscle strength		Muscle power		Speed		Index
P	U	P	U	P	U	P	U	P	U	Motor and physical fitness
0.001	39.41*	0.000	37.51*	0.060	45.07	0.009	41.91*	0.538	49.98	

P value observed in the speed and strength factors is greater than 0.05, so the null hypothesis is confirmed, that is there is no significant difference between PE teachers and PE experts. In muscle power factor ($P \leq 0.01$), flexibility and agility ($P \leq 0.001$) since observe P value is less than 0.05, so the null hypothesis is rejected, thus there is a significant difference between the PE teachers and PE experts.

Table 6: Mann–Whitney U Table of biomechanical factors

Body composition		Balance		Range of joint motion		Center of gravity		of BD		Index
P	U	P	U	P	U	P	U	P	U	Biomechanical
0.000	33.59*	0.000	36.96*	0.000	37.89	0.004	40.90*	0.035	44.12*	

P value observed in the center of gravity factor ($P \leq 0.01$) and range of joint motion, balance and body composition factor ($P \leq 0.001$) and body density ($P \leq 0.05$), the observed P value is less than 0.05, so the null hypothesis is rejected, thus there is a significant difference between the PE teachers and PE experts.

Table 7: Mann–Whitney U Table of psychological factors

EQ		Competitive anxiety		Self-confidence		Learning index		Interest		Index
P	U	P	U	P	U	P	U	P	U	Psychological
0.000	30.59	0.000	35.05*	0.029	43.88*	0.002	40.21*	0.001	40.33*	

P value observed in the indices of learning factor ($P \leq 0.01$) and the factor of interest and competitive anxiety and EQ ($P \leq 0.001$) and confidence ($P \leq 0.05$), the observed P value is less than 0.05, so the null hypothesis is rejected, thus there is a significant difference between the PE teachers and PE experts.

Discussion and Conclusion

The identification of gifted and talented individuals to enter the appropriate sports people can lead to the development of championship athletics. Due to the role of success in international sport events for a nation's reputation, the greater need is felt regarding this issue. So, today determination of

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anthropometric, psychological, physiological, motor and physical fitness, and body biomechanics factors gained special attention in sports performance. No doubt that familiarity with these indices and the relations among them is important to athletic performance as a first step to succeed to capitalize on the national champions and clubs to reach the pinnacles of honor and victory.

Anthropometric Scope

To review the findings of the survey on the anthropometric scope it was found that the results of this study are consistent with that of Spher Johnny (2000) concluded that anthropometric indices such as height, length of the upper and lower extremities are important factors right talent recruit in sports, such as the volleyball. Duncan *et al.*, (2006) and Gabto *et al.*, (2007) results on the anthropometric effects are more or less consistent with the present study .

However, Morro *et al.*, (1997) conducted a study on college female volleyball elite players; the players were not many different regarding anthropometric factors, but show significant differences in the performance. Also, Milekohan (2006) results in similar research was not consistent with that of the current research (British Lawnmower Museum; Koh *et al.*, 2008; Patterson, 1981; Pfaffl, 2001)

Physiological Scope

Perno (2004) stated that one of the important factors affecting the success of futsal players is correct identification of physiological- anthropometric needs and the player's skills so that high level of performance can be achieved with proper planning by coaches to improve these properties. Rasoli (2006) stated that most of his subjects were with high physiological variables. Also Pearson results are consistent with that of the current study. However, Bakker *et al.*, (1994) conducted a study on the physiological and anthropometric aspects of 24 cases of young speed skating athletes in German team and concluded that there is no difference regarding physiological and anthropometric factors among successful and unsuccessful speed skaters that is not consistent with the current study (Dhandapani *et al.*, 2005; Horner and Palmer, 2003; Mikulec *et al.*, 2001; Wang *et al.*, 2002)

Motor and Physical Fitness Scope

Bagheri (2011) found that there is a special norm for volleyball players including height, weight, sitting height, aerobic and anaerobic power, and knuckles strength, speed, and agility, flexibility forward and backward in selecting players. It is better to apply these teams to select the best players. Imami (2013) in a research evaluating and describing the measures of body composition, physiological, physical-motor readiness officer students of Imam Ali (AS) and Gall *et al.*, (2010) in their study on indicators of talent recruit in soccer players stated that anthropometric and motor and physical fitness can predict the success of the players for achieving high levels that are were consistent with the current research findings (Brenner *et al.*, 2001; Broer and Brookes, 2001; Ronaldson *et al.*, 2009).

Biomechanical Scope

Hazrati (1996) and Farhpoor (2008) and Karvajalo *et al.*, (2009) in a study entitled "Evaluation of body type and performance in elite baseball players in Cuba" achieve to the results that, performance and body types are variables associated with the state of play there is a statistically significant difference between the performance, body composition, and somatotype in some situations of some games and Milans (2010) in a study of the anthropometric and biomechanical factors in 6-12 years old children is more or less consistent with the current study (Hanani, 2005; Koehler *et al.*, 2009; Naoko and Shinichi, 2003).

Psychological Scope

Hatami and Mihandoost (2004) in their article entitled “psychological skills of elite and non-elite volleyball players” stated that now a combination of different factors affects athlete’s performance and psychological needs differ in different sport fields. Reza (2008) in the study of competitive anxiety level in elite basketball players and its connection with sports injuries emphasized on the anxiety of athletic competition as an important psychological factor in physical education while concluded that sports injuries is not related to sports competitive anxiety in elite basketball players. The results obtained by Korkmaz (2009) study about the impact of EQ and Vasiliki (2009) study were consistent with the current study findings (Dwivedi, 2009; Krishnan *et al.*, 2003; Ruffy, 2006).

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The final result obtained from this study approved the assumption that there is a difference between the PE teachers and PE experts regarding talent recruit variables. It was found that according to the views of teachers and experts in our community, some of the anthropometric, physiological, motor and physical fitness, biomechanical and psychological factors are different and this difference is due to the nature of the sports that make athletes physical adaptations to training for the specified sport.

It is important to note that none of the factors and specifications required in sports including, physical, physiological, psychological, biomechanical and anthropometric could not assure appropriate selection and their success is but an excellent should exhibit an acceptable mean regarding all above factors.

Practical Recommendations

A Similar study will be conducted in separated male and female populations.

Similar studies will be conducted regarding other sport fields.

Determining the quantity and quality of skilled staff (PE teacher and PE experts), and improvement in the process of sporting talent recruit. A similar study will be conducted on elite athletes. Sport people and coaches different perspectives on the athletes talent recruit will be studied.

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