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**Connection of athlete-coach relationship, sport
motivation, and perceived motivational climate
among elite male handball players**

Doctoral (PhD) dissertation thesis booklet

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1. Introduction

Nowadays sport is becoming more and more important in many areas of our life. In Hungary, there are several reasons why it became a national strategic sector. Sport is connected to health, economy and education sectors through several interfaces, thus, directly and indirectly, affects the indicators of these sectors. Unfortunately, for today's younger generations (Z and alpha generation), inactive lifestyle is more and more common, which directly affects the number of physically active youngsters and adults. These causes also result in a narrowing of the bases of youth sport, so it is important that those who stay in the sport and competitive sports are permanently committed to physical activity and remain active for years. Therefore, the area of motivation and especially sport motivation is particularly important. The persons who can adequately influence these factors are the coach and the parents. That is the reason why the relationship between the athlete and the coach is so important. Sport professionals with the right knowledge are also important components in regard of people's sport persistence, talent management, etc. It is crucial for them to possess - beyond the necessary knowledge - a pedagogical toolkit and personality traits that ensures the sport participation of children and adults.

It is also important to understand the motives that can influence the attitudes towards physical activity. Individual motivation for sport activities can be influenced by personal, demographic, psychological, social and environmental factors as well (Biddle & Mutrie, 2008).

Because of this, nowadays there should be cross-sectoral talent management programs implemented through the sporting system, primarily in the fields of education, training and qualifications which relies on very deep pedagogical, social, didactic and psychological bases.

The multidimensional approach is also present in our work, as research that has examined the athlete-coach relationship and the personal (motivation) and situational (perceived motivational environment) factors of athletes has not yet been published in the field of handball.

2. Antecedents of the research

In order to achieve outstanding sport performance, it is essential to consider and develop factors beyond physical skills (Aidman & Schofield, 2004).

According to Iso-Ahola (1995), athlete performance is in correlation with interpersonal and intrapersonal factors. In order to achieve good performance, it is also necessary to develop the athletes' inter- and intrapersonal psychological factors.

Social skills as well as environment, and psychical factors play an important role in the performance of handball players, while motivation, self-confidence, courage, determination, and stress tolerance are also crucial (Kolodziej, 2013).

In sport, pedagogy is extremely important. A trainer with a pedagogical sense and pedagogical proficiency can make a serious development with his or her pupil. With appropriate pedagogical methods, all children and all athletes can be treated good and taught. Much depends on the attitude or patience of the teacher or coach. Choosing the right method can be the key to success, either in school, in sport, or in life (Falus, 1993).

In a research involving 335 female handball players, it was found that competence, autonomy, and relatedness predicted self-determined motivation. The sense of autonomy was particularly important in this respect. As a result, self-determined motivation has a negative relationship with the intention to end a handball career (Sarrazin et al, 2002).

Another study measured the affective experience of female handball players and their persistence in sports. The level of enjoyment of handball was related to competence, autonomy, affiliation, perceived development, and coaching support factors. In addition, players who gave up playing the sport felt less competent, did not associate with their teammates, and felt less supportive of the coach (Guillet et al, 2002).

In the research of Gómez-López et al. (2014), the effect of goal orientation was evaluated by motivation and the motivational environment perceived by elite female handball players. Based on the 63-player pattern, he found that high self-motivated players reported lower task orientation. The players who reported low ego-orientation could be specified with high identified external regulation. In addition, it was found that high task-oriented players were characterized by intrinsic motivation for performance, identified and introjected external regulation.

According to our previous studies, in which we examined the attitude differences of Serbian and Hungarian youth handball players towards their coach we found that the coach has a great role in the development and maintenance of emotional stability among the players. The test sample involved the youth athletes of two clubs' (14-18 years). The questionnaire was divided into two groups. One of them included questions about the coach (15 questions) and the other about the training (18 questions). Based on the results obtained by examining the athletes' attitude towards their trainer, we concluded that young Serbian players have different and more positive opinions about their coach than Hungarian players. The most notable difference was in coaching appreciation in terms of reliability, acceptance, emotion management and emotion sharing (Paic, Kajos, Korovljević, Djukić & Prisztóka, 2012; Paic, Kajos & Prisztóka, 2013).

Furthermore, we found that attitudes towards coaches have a significant impact on the athletes' sense of task orientation. Regardless of whether the team is successful or unsuccessful, the male coaches created a higher task-oriented climate. As in regard the number of years spent as a coach, we have found that coaches working for a long time keep their athletes' ego orientation at a lower level. In addition, they managed to create higher task-oriented atmosphere. Finally, we examined the role of pedagogical education, more specifically, how perceived motivational climate changes depending on coaches' educational level. There is no significant difference in task-orientation. However, the perception of the ego-oriented climate is significantly lower for coaches with higher pedagogical qualifications, which means that they can maintain a high task-oriented climate and keep low the ego-oriented motivational climate. This is of paramount importance, especially in youth sport.

In our research conducting the adaptation of the sport motivation questionnaire into Hungarian, we found that handball players' intrinsic motivation was the highest, while the water polo players were the least intrinsically motivated. 500 athletes were included in the research. In each case, the cognitive dimension of the intrinsic motivation showed higher values than the effective one. In addition, self-determined external motivation factors (integrated and identified) have a similar tendency. Interesting results can be observed in the factor of the projected external regulation, where high values are consistent with previous researches. The

handball players have the lowest external motivation values after the water polo players (Paic, Kajos, Meszler & Prisztóka, 2018).

3. Objectives

The aim of the dissertation is to give a brief review of the most known motivational theories and to reveal the biography which is related to handball in the given topic. We introduce the most frequently used questionnaires of the field as well. Our further aim is to determine the sport motivational structure of adult male handball players who plays in the first Hungarian league. Furthermore, we want to determine the coach created a motivational environment. We want to understand athletes feeling towards their coaches and vice versa by revealing the athlete-coach relationship characteristics. Also, we would like to compare the motivational factors of Hungarian and foreign players playing Hungarian first division. Our last goal is to reveal whether the pedagogical qualifications of coaches affect any of the examined parameters. Based on the results, we would like to make practical suggestions for coaches and athletes to improve their performance.

4. Sample and methods

In our thesis we measured the elite adult male handball players sport motivation, perceived motivational climate, and athlete-coach relationship. The sample included Hungarian and foreign players who played in the Hungarian first division in the 2016/2017 season (n = 113). 78 of players filled the questionnaires in Hungarian, 27 of them in Southern Slavic languages (Serbian and Croatian), and 9 players in English. In addition, we asked 6 coaches by the same method (n=6). We used the following questionnaires for measuring: sport motivation: H-SMS and SMS 2, perceived motivational climate: PMCSQ2 and H-PMCSQ2, and athlete-coach relationship: CART-Q (table 1).

Table 1. Summary of research information

Aim	Method	Sampling	Sample	Analysis
Sport motivation	survey by SMS2+HSMS	probability	Athlete (n = 113)	descriptive statistical methods
Perceived motivational environment	survey by PMCSQ2+H-PMCSQ2)	probability	Athlete (n = 113)	descriptive statistical methods
Athlete-coach relationship	survey by (CART-Q)	probability	Coach (n = 6) Athlete (n = 113)	descriptive statistical methods

4.1 Hypotheses and research questions

We designed the following hypotheses in our research:

H1: Based on practical experiences, we assume that the currently more successful team's players (final position 1-4 in the championship) have better relation to their coach in the field of closeness, commitment and complementarity than the less successful.

H2: Based on practical experiences, we assume that the currently more successful team's players (final position 1-4 in the championship) have a higher intrinsic motivation than those which finish in the middle (5-7. place) or in the end (8-10. place) in the championship.

H3: Based on previous researches, we assume that athletes with higher task orientation have higher intrinsic motivation as well.

H4: Based on previous researches, we assume that athletes with higher ego-orientation have higher external motivation and amotivation.

H5: We assume that there is a correlation between the factors of athlete-coach relationship and the perceived motivational environment.

H6: We assume that players whose coaches have pedagogical qualification have significantly higher intrinsic motivation and self-determined external motivation.

H7: We assume that coaches with pedagogical qualification can sustain a high level of task-orientation and low level of ego-orientation, then coaches without pedagogical qualification.

H8: We assume that coaches with pedagogical qualification have a significantly better relationship with athletes in every factor of the athlete-coach relationship (closeness, commitment, and complementarity).

Also, we had additional questions during our research:

- Does the team's current performance (based on its ranking in the championship) affect the perceived motivational environment?
- Does effectiveness affect the quality of coaching communication experienced by the athletes?
- What kind of motivational dimensions are specific for the pedagogically qualified coaches' athletes?

5. Results

The results show that there are significant difference of intrinsic, integrated, identified and external regulations factors of athletes of Hungarian and South Slavic origin. There is a very strong significant difference in the design pattern between the two samples. Analyzing the perceived motivational climate and sport motivation we can conclude that there is a significant difference in case of effective development and intra team rivalry. There is also a very strong significant difference in the unequal recognition factor of Southern Slavic and Hungarian athletes. Furthermore, we found significant difference between the two main factors, task-orientation and ego-orientation when we analyze the Hungarian and Southern Slavic athletes' results. We did not find any significant difference of the athlete-coach questionnaires' factors. The correlation between the sample's motivational factors and the end-of-season position did not show any significant correlation as well. In

the case of Southern Slavic players, with the increase in rank on the table, players' intrinsic motivation is significantly reduced. A typical feature of the sample is that the end-of-season placement shows a very strong, significant negative correlation with players' ego-orientation. There was a significant correlation between the results of the three factors examining the relationship of the athlete-coach and the end-of-season placement, but this only occurs in case of Hungarian athletes. There was no significant correlation between the end-of-season position and the quality of the athlete-coach relationship in the case of Southern Slavic athletes. Examining the motivational factors of the examined sample we can conclude that there is a significant positive correlation between all the factors of intrinsic motivation and task-orientation as well. We have found a similar result in case of the integrated, identified and projected regulation of external motivation. The introjected regulation correlates with the ego-oriented factor of intra team rivalry. However, the external regulation correlates significantly with the ego-oriented motivational environment. There is a very strong correlation between the intrinsic motivation of handball players and all the factors of the athlete-coach relationship. There is also a significant, but weak correlation between introjected regulation and the complementarity and closeness factor of the athlete-coach relationship. All factors of the athlete-coach relationship very strongly correlated with all the factors of the task-oriented motivational environment. Negative correlation can be found between the athlete-coach relationship and the punishment for mistakes and the unequal recognition factors. Players whose coaches have pedagogical qualification also have significantly higher levels of intrinsic motivation and integrated regulation factor of self-determined external motivation. It is a remarkable result that the players (whose coach has pedagogical qualifications) have significantly higher task-orientation, and lower ego-orientation except in the factor of intra team rivalry. Analyzing the results of athlete-coach relationship we can conclude that the players whose coach has pedagogical qualifications s have higher values of commitment, closeness and complementarity as well.

6. Discussion

H1: We completely reject our original assumption that the championship position has a positive correlation with athlete-coach relationship, because although there was a significant relationship between the coach-athlete relationship and the end-of-season position, its direction was opposite. This means that the higher the team's position was at the end of the year the worse

the relationship between coach and players were. The main reason for rejecting the hypothesis is its inaccurate assumption. Before starting the research, we assumed that the final position on the championship table is equivalent with success. We must conclude that success is relative, it could be a success for one team to stay in the league and on the other hand for a team with higher ambition the 4th place can be a failure.

H2: We reject our second hypothesis that the players in the clubs with higher ranking have higher internal motivation based on our analysis of the entire sample. But if we look at the results of the Southern Slavic players, we can conclude that their intrinsic motivation is higher as we assumed, so we must accept the hypothesis in their case. Taking all these into consideration, we must partially accept our second assumption.

H3: We accept H3 because correlation of the intrinsic motivation and task-oriented motivational climate proved to be significant in the whole sample showed that higher internal motivation results in higher task-orientation among the players. However, not only the internal motivation, but the self-determined profile of external motivation (identified and integrated regulation) correlates in a similar way with task orientation. So, the higher the motivational factors, the higher the task orientation of the athletes.

H4: Based on our preliminary assumption that ego-oriented athletes have higher external regulation and amotivation, we must conclude that our assumption could only be partially accepted. The ego-oriented perceived motivational climate is correlated with the external regulation, but a direct linkage cannot be detected with amotivation.

H5: There is a positive correlation between each factor of the athlete-coach relationship and the task-oriented perceived motivational environment, and negative correlation between each factor of the athlete-coach relationship and the ego-oriented motivational environment, so we accept our assumption.

H6: We accept both parts of our assumption because the players whose coaches have a pedagogical qualification, have significantly higher intrinsic motivation, and identified regulation as well. No significant correlation was found with other factors.

H7: We also accept this assumption, as there was a significant difference between the task-orientation factors of the perceived motivational environment of the athletes whose coaches have pedagogical qualification.

H8: We also accept our last hypothesis, as we found a significant difference in the athlete-coach relationship (closeness, commitment, complementarity) between the players whose coach has pedagogical qualification and the players whose coaches haven't got this type of qualification.

Based on the results our answer to the first research question is that the end-of-year ranking has a negative correlation with the ego-oriented motivational environment. Meaning, that the results of final placement in the championship have a big impact on ego-orientation.

Our answer to the second question is that the value of 3.09 for communication is slightly lower than the average score. This is especially true for players of Southern Slavic origin who felt that the coach's communication was worse with them than the other players. Although we found no significant difference between the groups.

We have found that the athletes whose coaches have pedagogical qualifications have significantly higher intrinsic motivation and external motivation in the field of integrated regulation. We can also make other important findings in this regard. In all cases, work with coach with a pedagogical qualification meant that athletes' external motivation was lower. The amotivational values and the values of introjected regulation are almost identical, but the identified regulation - which is a self-determined form of external motivation - is higher for handball players trained by a coach with pedagogical qualifications.

7. Practical implications of the research

The results of the research gave us an accurate picture of the motivational structure of the players of the first Hungarian male handball championship. These results can be used by coaches to review and strengthen their motivational methods. The Hungarian athletes' motivational structure is specific with high values of introjected regulation, so coaches should use motivational strategies to shift their motivation towards intrinsic motivation and self-determined external motivation. This must be started in the youth sport, because by the time the athlete becomes an adult, the motivational

structure would be rather self-determined. Therefore, it has a vital importance to provide the future coaches with the knowledge how to change the motivational structure of the players, and how to keep the introjected regulation at low level.

It is important that young people shouldn't do sports driven by pride, or to reduce anxiety, or just because they were forced to do it. They should enjoy playing handball. Using the results of the motivational environment, the coaches can influence the perception of athletes' task or ego-orientation in the training and in the games too. It is important for coaches to maintain a task-oriented motivational climate in order to increase the psychological well-being of players, and to apply the self-determined types of the motivational structure. If coaches want to do this, they must accept that mistakes are part of the development / learning process. They should encourage and recognize their players' efforts, personal development, improvement of their abilities, and the appearance of cooperative behaviour among them (Gómez-Lopez et al, 2014; Balaguer et al, 2002).

We need to think about why the Hungarian athletes have become so subtle to the unequal treatment of the ego-oriented factor. This is a very important piece of information that coaches should focus on if they want to avoid intra team conflicts and creation of factions. It is very important to learn more pedagogical methods and contents, because it was clearly revealed that the players whose coach has pedagogical qualifications - although we did not examine the methods and procedures - had a much higher intrinsic motivation, a sense of task-orientation and their relationship with the coach was better as well. Good athlete-coach relationship, although its quality has decreased with the increasing rankings, is a positive, necessary and indispensable factor for achieving success.

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