

Refereeing errors as the cause of escalation of emotions and increase in possible health and life hazards during football match – the method developing competence of team sports and combat sports referees as the part of improving their qualifications

Authors' Contribution:

- ☑ **A** Study Design
- ☑ **B** Data Collection
- ☑ **C** Statistical Analysis
- ☑ **D** Manuscript Preparation
- ☑ **E** Funds Collection

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Abstract

Background & Study Aim:

Distortion of final score of a match occurs as a result of misjudgement made by referees during football competitions. The aim of this paper is to recommend the SET method (Ger. Schiedsrichter-Entscheidungs-Training) as an appropriate tool to verify the competence of referees.

Material & Methods:

The method (SET) developed by the German Football Association may also be used in other sport disciplines to train referees in decision-making process. Our suggestion relates to modelling aggression risk (interpersonal and/or transferred) among fans, the risk of health or life threats to the referee as well as the likelihood of score distortion caused by refereeing errors.

Results:

Similar training method has been used for several years in other sport disciplines (volleyball, judo). During judo training sessions (at least twice a year) referees analyse approximately sixty video-taped actions from leading sport competitions (European Championships, World Championships, the Olympic Games). During training course referees watch separate actions and enter their decisions into the score sheet. The most important justification for the recommendation to use the SET method in training referees of other sport disciplines is the possibility to modify it and adapt to various situations that occur in team sports and combat sports (especially judo, wrestling, basketball, volleyball).

Conclusions:

The SET method in combination with modelling of aggression risk and the likelihood of score distortion due to refereeing errors may be especially useful in studies concerning extremity of team sports because of the separate criteria for the likelihood of undesirable behaviour in sport.

Key words:

SET method • practical error • specific training • extreme situation

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Practical error – futile or unintentional movements, or cases of unintentional performance of a movement. Conceptually, practical error is not synonymous with 'defective action', which in turn may be deliberate [16, p.27].

Behaviour – events, to which all living creatures are subjected (not only people), which are reactions to external or internal stimuli. Behaviour can be expressed with movement or stillness performed intentionally or unintentionally [16, p.283].

Action - intentional, deliberate and arbitrary behaviour of people. If we assume that the purposefulness of the action is related to conscious and free behaviour, it is sufficient to state that an action is an intentional behaviour. Unintentional, involuntary would not be referred to as an action, even if the subject comes closer to more favourable or desired state [16, p.56-59].

INTRODUCTION

Football referee usually makes 200 decisions during a match, whereas as shown by the research performed during the Euro 2000, 20% are erroneous [1]. Some of them have a great impact on the fact whether the team will still compete in championships or will be eliminated and therefore they arouse major controversies.

During 2013/2013 season of the Polish Ekstraklasa matches were conducted by seven professional referees and ten professional assistant referees [2]. This is a manifestation of the concern for the development of the highest standards of assessing the game during leading domestic championships. Thus, the nature of football referees' work and the latest trends in projects used to improve the quality of decision-making process are one of the most fundamental challenges for specialists in sport science as well as for psychologists, sociologists and praxeologists.

Not all of 20% of incorrect decisions were crucial for the outcome of the match. However, such errors become embedded in the memory for the long time. During the World Championships in the South Africa in 2010 the British played with Germans and correctly scored a goal (the ball hit the crossbar after the shot made by Frank Lampard and bounced behind the goal line) but it was not recognized. The goal was scored at 2:1 for Germany and could change the fate of the match, which finally ended with the victory of Germany 4:1. Another famous refereeing error took place during the last European Championships in 2012. The team representing the co-host of the championships, the Ukraine, also correctly scored a goal in the match against England but again this time the referees did not make correct decision. Therefore, due to criticism related to incorrect refereeing decisions the UEFA added two additional goal-line referees to the traditional team of referees (and fourth official), whose main task is to assist head judge in the assessment of the events in the penalty area, including making a decision whether the ball crossed the goal line with its entire volume. Tests of this solution began in 2008 (Fédération Internationale de Football Association FIFA [3]), however, it was not used during the last European Championships.

As shown by the report summing up the World Championships in the South Africa, only 142 of 145 goals scored correctly have been recognized (2.07% have not been recognized). Two additional goals were correctly scored but referees made a decision that it

was an offside goal, whereas once the ball crossed the goal line, which was not noticed by the referees (the above-mentioned situation during match between Germany and England). Out of 65 events in the penalty area, five times (7.7%) referees did not award a penalty kick, what is confirmed by the observations of FIFA [4]. Each of such errors raises strong wave of criticism of UEFA and FIFA and forces both organizations to take some actions aiming at improvement of refereeing quality. Apart from the actions comprising increase in the number of football referees or implementing modern technologies allowing for quick decision-making process on scoring or not scoring a goal, new projects are emerging, which should improve the quality of the decisions made by referees. Such project is developed in Germany under the direction of Ralf Brand. Decision-making training for referees (Ger. *Schiedsrichter-Entscheidungs-Training*) was originally created for football referees.

Football is a specific sport discipline. In the past, for example, it could raise the national spirit after the war (the victory of Germany with Hungary in the final of the World Championships in 1954 was depicted as 'the miracle in Brno') or even cause a war. Famous 'football war' between Honduras and Salvador was described by Polish reporter Ryszard Kapuściński in the book under the same title [5].

In the context of refereeing errors which may cause escalation of emotion and increase of the likelihood of health threat, the important issue is the knowledge of work environment (activities) of the referees during the match. As revealed by the research conducted by Caballero et al. [6] referees cover approximately 10-12 kilometres during a match. Other study performed by Reilly and Gregso [7], which involved referees from Dutch, English, Italian and Tasmanian league, speak about 9-13 kilometres. As for the distance covered by assistant referees the study conducted by Mallo et al. [8] reveals that it amounts to 5752±554 m.

Physical requirements constitute only one aspect. Requirements dictated by the specific nature of the game and fan or media pressure are more difficult. For example, the final of the World Championships in the South Africa in 2010 was watched by 909.6 million people in their homes throughout the world [9]. Football is an extremely dynamic and contact sport and a referee faces significant cognitive challenge. He has to perform comprehensive assessment of the situation in a fraction of a second including

i.a. the position of the ball, behaviour of the players and taking into account the signals made by assistant referees, a referee must make appropriate decision (foul/ no foul). Moreover, there are many factors that influence cognitive processes of a referee. It turns out that cries of the crowd, height of the player or even the colour of the sportswear have great influence on decision-making process, as revealed by Schweizer, Brand et al. [10]. Among other factors being influential on the decisions made by a referee, Schweizer et al. [11] list also the reputation of the player, the moment during the match and the native language of the player.

Taking into account the specific circumstances of the referee's work during football match and the likelihood of the extreme situations as a result of the error, we aimed at recommendation of the SET method (Ger. *Schiedsrichter-Entscheidungs-Training*) as an appropriate tool to verify the competence of referees.

MATERIAL AND METHODS

The grounds to develop the SET method was the need to improve the effectiveness of correct decisions made by football referees and to provide opportunities for young referees. The SET method was developed in the University of Stuttgart in the Institute of Sport Science in cooperation with the Institute of Psychology in the University in Heidelberg. Since April 2009 it has been further developed in the University in Potsdam and in the University in Leipzig. Project funding was provided by the Federal Institute of Sport Science (Ger. *Bundesinstitut für Sportwissenschaft*) and the German Football Association (Ger. *Deutscher-Fußball-Bund*) [12]. Previously depicted complexity of the situation combined with time pressure allows to make speculation that decisions made by a referee do not result from complex analytical process but rather are based on automatic or intuitive processes [13]. The assumptions of Hogarth [14] on intuitive behaviours were also significant for the development of the method. Their effectiveness may be improved if directly after decision-making process, given person may receive feedback on its correctness.

The SET is based on videos from various matches i.e. the Champions League, German and New Zealand league [15]. Database of recordings is one of the most significant elements of the project being continuously developed. They last approximately 10 seconds and depict scenes that may contain behaviour

(or action!) inconsistent with the rules. Recordings have been evaluated by the specialists from the Referee Committee of German Football Association. The training is available online and a referee after logging in may train anywhere. The legitimacy of the decisions as well as other gathered information e.g. reaction time can be further subjected to analysis. Decision-making process is a two-phase process. During the first phase a referee must make a decision about foul, in the second one (in case of a correct decision about a foul) a referee decides about the type of a punishment (free kick, yellow or red card [15]).

RESULTS

The effectiveness of the method has been tested on referees from various leagues. Training process usually lasts for 3 weeks. Measurements were performed at the beginning and at the end of the cycle. Referees trained also regularly at home. Training sessions lasted from 15 to 30 minutes. Various research plans have been used (different conditions of the training) to find the most effective one. Notable learning effects could be observed if referees received feedback directly after making a decision with no additional information [15], what corresponds with the above-mentioned assumption of Hogarth [14]. Referees from Brandenburg were subjected to the study which revealed that the number of refereeing errors has decreased by 20%, whereas the improvement has not been reported in control group. Improvement has been reported in 85% of the participants [12]. Replaying videos as a part of the training did not influence the quality of decisions. Detailed information on the effectiveness of the method can be found in Schweizer et al. [10].

DISCUSSION

Information on the project (detailed results) can be also found on the website of the project: www.sethome.de. Currently, training is available in three language versions: German, English and Spanish. The authors adapted this method to basketball in 2009 and it is planned to incorporate this method into the training of the referees from the best leagues [15].

Similar training method has been used for several years in other sport disciplines, such as volleyball, judo. During judo training sessions (at least twice a year) referees analyse approximately sixty video-taped actions from leading sport competitions (European Championships, World Championships, the Olympic

Games). During training course referees watch separate actions and enter their decisions into the score sheet. After the entire presentation they compare their own assessments with the pattern established by the referees from the world referee committee. It seems advisable to popularize the SET method used by the German Football Association for training purposes. Specially selected events (highly controversial as for the accuracy of the assessment) available on the digital platform may fulfil educational expectations, i.e. improving referee's competences in various sport disciplines. The expected effect of such training is primarily to increase the competence of referees, which translates directly into reduced risk of errors. Reduction of misjudgements is, however, one of the most significant factors that reduce the risk of fan's aggression and escalation of undesired events during sports events.

CONCLUSIONS

The SET method combined with modelling of aggression risk and the likelihood of score distortion due to refereeing errors may be especially useful in studies concerning extremity of team sports because of the separate criteria for the likelihood of undesirable behaviour in sport.

After proper modification and adjustment to various sport disciplines (especially team games and combat sports) the SET method should be placed on digital platform in order to improve the competence of referees of various sport disciplines.

COMPETING INTERESTS

The authors declare that they have no competing interests.

REFERENCES

- Helsen W, Gillis B, Weston M. Errors in judging "offside" in football: Test of the optical error versus the perceptual flash-lag hypothesis. *J Sport Sci* 2006; 24(5): 521-528
- PZPN. Uchwała PZPN nr V/95 z dnia 15 maja 2012. In: Komunikat Zarządu PZPN 2012 V/2012 z dnia 15 maja 2012 roku; p. 75-76 [in Polish]
- FIFA Media Department. Additional Assistant Referee experiment in 2009-2010 UEFA Europa League 2009; 1(3)
- FIFA World Cup South Africa™ (2010). Technical Report and Statistics. Available from: http://www.fifa.com/mm/document/affederation/technicaldevp/01/29/30/95/reportwm2010_web.pdf [accessed January 29, 2014]
- Kapuściński R. *Wojna futbolowa*. Czytelnik, Warszawa 1978 [in Polish]
- Caballero JAR, Ojeda EB, Garcia-Aranda JM et al. Physiological profile of national-level Spanish soccer referees. *ISMJ* 2011; 12(2): 85-91
- Reilly T, Gregson W. Special populations: The referee and assistant referee. *J Sport Sci* 2006; 24(7): 795-801
- Mallo J, Navarro E, Garcia-Aranda et al. Physical demands of top-class referee assistant refereeing during high-standard matches. *Int J Sport Med* 2009; 30(5): 331-336
- FIFA World Cup South Africa™. Television Audience Report. Available from: <http://www.fifa.com/mm/document/affederation/tv/01/47/32/73/2010fifaworldcupsouthafricatvaudiencereport.pdf> [accessed April 25, 2014]
- Schweizer G, Brand R, Plessner H et al. Foul oder kein Foul, das ist hier die Frage! Das Schiedsrichter-Entscheidungs-Training SET. *In-Mind Magazine* 2010. Available from: <http://de.in-mind.org/content/foul-oder-kein-foul-das-ist-hier-die-frage-das-schiedsrichter-entscheidungs-training-set> [accessed August 16, 2011] [in German]
- Schweizer G, Plessner H, Kahlert I et al. A video-based training method for improving soccer referees' intuitive decision-making skills. *J Appl Sport Psychol* 2011; 23(4): 429-442
- Brand R, Schweizer G, Plessner H. Conceptual considerations about the development of a decision-making training method for expert soccer referees. In: Araujo D, Ripoll H, Raab M, editors. *Perspectives on cognition and action in sport*. Hauppauge, NY: Nova Science. 2009: 181-190
- Brand R, Schweizer G, Plessner H. Evaluation des Schiedsrichter-Entscheidungs-Trainings (SET). *BISp-Jahrbuch – Forschungsförderung* 2009: 285-288 [in German]
- Hogarth R. On the learning of intuition. In: Plessner H, Betsch C, Betsch T, editors. *Intuition in Judgment and Decision Making*. Mahwah, NJ: Lawrence Erlbaum Associates, 2008: 91-105
- Brand R, Schweizer G, Plessner H. Das Schiedsrichter-Entscheidungs-Training SET. *BISp-Jahrbuch – Forschungsförderung* 2008: 227-230 [in German]
- Pszczółowski T. *Mała encyklopedia prakseologii i teorii organizacji*. Zakład Narodowy imienia Ossolińskich. Wrocław-Gdańsk. 1978 [in Polish]

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