

216 - ELABORATION AND REPRODUCIBILITY OF A QUESTIONNAIRE FOR SELF-EFFICACY METACOGNITIVE FOR REFEREES

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INTRODUCTION

In the development of any sport, besides the players and coaches, the referees participating in the competition, inevitably, are based on basic elements of the process, whether beginners or professional categories (Cruz, 1997). Moreover, it is they who are responsible for managing the game and make decisions quickly and efficiently according to the rule of each modality.

It should recognize that the referee, although fundamental and indispensable part in sports in general, activity that develops in Brazil is still characterized by the absolute amateur. As professional players, mostly undergo daily physical preparation, technical and psychological, aiming for continuous improvement, many referees train individually and on their own, without the necessary preparation and the ideal in this respect.

According to Cross (1997), that the actions of the referee in sports to develop criteria absolute impartiality and justice, should be taken into account, necessarily, a series of situational factors that determine the correct decision-making and appropriate development of factors included in an arbitration effective. Going against this assertion, the majority of books and manuals on arbitration considers that to be a good referee, you need only a good understanding of the rules, physical fitness and good tactical positioning.

However, research in the area, indicate that a large number of arbitrators, refers to the great relationship between good psychological condition and correct actions in the field of play. According to these, what differentiates a good referee from the others, are features such as: be aware in their decisions, establishing good relationships with others, act quickly and decisively, display area and emotional control, act with integrity, act with self-confidence, be motivated during the competition (Cruz, 1997). These conditions, not seen by the majority of the arbitrators.

According to Nitsch (apud SAMULSKI, 2000), changes in thinking, perception and motivation are achieved with the help of psychological procedures, such as mental training and concentration. Even with this need for a good psychological condition, the emphasis on training is much more related to their physical than mental. In our view, the combination of mental skills and physical capabilities would be crucial, since the large variability observed mainly in collective sports requires not only a great cardio capacity, but also a good mental preparation for the individual to reach the necessary balance and consequently the optimal performance in the fields and courts (MACHADO, 2006).

Coinciding with this thought, Rech, DaRonco and Paim (2002), indicate that there is a strong relationship between the psychological capacities of the referees and their performance. According to these authors, the success of the arbitrator depends on your mental capabilities, linked to confidence, concentration and emotional control. In these studies, the arbitrators often report the importance of mental ability to perform difficult tasks, take a controversial decision to exercise control of the game or to stay calm, do not bother leaving with external interventions.

Investigations such as developed by Ittenbach and Eller (1988), Weinberg and Richardson (1990) and Gimeno et al (1998) collects the opinion of a lot of sports referees that underlie a set of psychological characteristics that intervenes in their performances, as example: be aware in their decisions, establish a good decision with others, act decisively and quickly, showing a good knowledge and emotional control, act with integrity, have confidence and be motivated for the competition.

In this sense, we can consider that the work of an arbitral influence decisively the outcome of the competition, and its development process takes place under circumstances and characteristics. During the competition, the referee has to make decisions from time to time that might be considered minimum, decisions about which are not allowed to make mistakes, because in all cases, these will depend to some extent, the final outcome of sporting event and that moreover, may cause adverse reactions usually athletes and coaches.

Conjugate to all this, I feel the need of having to bear the pressure of the spectators and the subsequent pressure from the media, causing a combination of factors that determine a stressful profession, and whose experience, appears continuously associated with financial managers of tension, factor directly associated with cognitive strategies of control that permeate the psychology of sport and its contours.

Thus, there is no doubt that the intrinsic characteristics of its own functions to develop a sports referee, have high requirements regarding a large number of skills and psychological characteristics (Cardenas, 2006), leading us to consider the psychology of sport can and should help in the matter of training those skills.

2. THE SPORT PSYCHOLOGY APPLIED TO ARBITRATION

In general, the psychology of sport, uses psychological knowledge to address the problems of work and life of all those involved in sports activities, aimed mainly at the adjustment of these individuals to the routines of their activity. Through a first step of intervention, known as psycho, can be raised as the knowledge of the general characteristics of individuals, their interests, skills and beliefs about themselves, their profession and others.

The psychology of sport in the area of arbitration, is not explored in the scientific intricacies, although it is set in one of the main actions that may develop in direct work with the referee in order to optimize its performance in the field of play. In the few studies available, the psychological variables most used in the field of arbitration are: concentration, decision making, interpersonal communication, emotional control, motivation and self-efficacy (Cardenas, 2006).

The latter, according to Ramirez (1999), may be regarded as a psychological characteristic necessary for the arbitrator in the case of a demanding and stressful profession, where social praise and recognition are rare, by players, coaches, fans and journalists. Self-efficacy is the belief that one can satisfactorily perform a given behavior (Bandura, 1986). This belief must be reasonable in order to avoid problems of excess and lack of confidence.

Also seldom explored, as it pertains to psychological intervention in the area of arbitration, is related to metacognitive

knowledge of the professional who serves as referee sports. John Flavell was one of the first to write about what is known as metacognition (Anselmo, 2003). The author of this work is embodied in the research on the processes related to metamemory or more precisely the "... set of ideas and feelings about the memory "(Flavell, 1979). The results arising from this preamble did touch on new concepts about the functioning of the human mind. In 1979, there is one of the first concepts for the topic of metacognition:

Metacognition refers to knowledge that a person has their own cognitive processes, their products and anything related to them, for example, the relevant properties of the learning information or data. [...] Also refers among other things enables the assessment, regulation and organization of these processes in terms of cognitive objects or data on which they are traveling, often to achieve a goal or objective case (FLAVELL 1979, p.23, apud NOEL, 1996).

In addition, self-efficacy or metacognitive beliefs can be seen with a summary of how each can be seen interacting with others through activities of a reflective and strategic in most of the time (emphasis added).

To start training on the acquisition and improvement of self-efficacy is important to assess metacognitive knowledge of the referees about the situations they have experienced during the games, your beliefs about yourself and the metacognitive strategies most used by them, in certain game situations. As Riera, cited by Cruz (1997), in general, the strategies used to obtain information about the referees are: study of the rules, questionnaires and interviews, and field observations.

Thus, this study alludes to the proposed development and validation of a brief questionnaire and easy to use, aiming at the investigation of psychological constructs of higher order (metacognition and self-efficacy) on referees for further intervention and improved performance in the field game.

3. METHODOLOGY

3.1 Procedures Preliminary

When you start a more detailed discussion on the subject, it should be noted that the study now exposed, I feel just the verification of the psychometric properties of the proposed instrument for its validity, both by excluding the possibility of intervention and analysis of data collected, to draw the profile of self-efficacy of metacognitive referees, participants of the test-retest reliability, a fact that would be linked to a second phase of studies.

Sampieri et al. (1991) the first step towards the construction of research instruments is conducting a review of the literature of the subject being studied and the verification of other instruments that have measured the same variables they intend to measure.

Thus, we used a search of electronic databases LILACS - Latin American and Caribbean Health Sciences, and MEDLINE (1997-2009) - International Literature of Health, as well as in bibliographic staff. To this end, were defined the following descriptors in Portuguese and English: metacognition / metacognition, self-efficacy / self-efficacy; psychometry / psychometrics; umpire / referee; reproducibility of results / reproducibility of results, and their combinations.

After the removal of the questionnaires used to collect information involving studies in the area of metacognition and self-efficacy, we tried to select parts of the instruments that they would compose each dimension of the questionnaire and preparation of the parties to the proposed survey.

Regarding the aspect of measuring, we opted for a questionnaire with questions such as closed and Likert-type scale of three points. In this type of scale is a series of three propositions, of which the respondent must select only one, may be: "never", "sometimes" or "always." At the end of a quotation is made of responses ranging from consecutively: 0 = never, sometimes = +1, +2 = always.

For the preparation of instruments of this study, we used the instrument entitled "Questionnaire of Self-Efficacy for Metacognitive Referees - Qaem, which consisted of a table with 10 closed questions and for each of three areas related to their responses. For each answer the research subject should respond by codes (never, sometimes or always). The scores of the Qaem were obtained by the sum of the results for each item. In each item, stated as a question, the score could range from zero to two points.

So, ten alternatives should be scored. Understanding of the statement was part of the questionnaire, so that an unanswered question or two alternatives was scored marked with zero. The varieties of scores met the following criteria: score of zero for code 1 (never), scores for a code 2 (sometimes) and two scores to code 3 (always). The questions were answered in the form of unique alternative. So we would have a minimum score of 0 (zero) and a maximum of twenty (20).

In this version of Qaem, to assess the level of metacognitive self-efficacy we used the following classifications: absent (score = 0), very low activity (score = 1 to 4), low activity (score = 5 to 8), medium (score = 9 to 12), high activity (score = 13 to 16); high metacognitive activity (score > 16). Thus, the 10 items were presented by construct, ie, grouped by subject block. The theoretical model used for the preparation of the issues sat in studies of Flavell (1979), and its categories of metacognitive knowledge: (a) personal (self-knowledge), (b) inter-individual (interactions), (c) in variable of the task and (d) the level of strategy.

3.2 Validation by the panel of judges

According to the literature, content validation (also known as face or apparent) is based on "common sense", ie, there is the wording of the questions posed and whether they have form and vocabulary appropriate for the target audience be investigated. In this sense, Nachmias and Nachmias (1996, p.165-166) believe that this kind of life "... is based on the assessment of the researcher on the validity of the measuring instrument. It is advisable that such verification is performed by a jury of experts in the field to be searched.

Given this assumption, to verify the validation of content, were sent to three experts on the subject, a letter explaining the research objectives and an evaluative questionnaire in order that they should issue its opinion on the clarity, applicability and efficiency of test measure the metacognitive self-efficacy, and then the responses were tabulated. The content analysis of the test was conducted through the assessment of your items to judge the relevance of these to the construct studied.

A match of at least 80% of the experts was the criterion used for retention of items. Reliability was ensured by the high percentage of registered agreements, all above the limits of 80% (VAN DER MARS, 1989). None of the questions was below this margin of 80%, and the instrument was deemed applicable in the evaluation about the study population. Thus, this initial qualitative validation was completed with the pre-testing of the instrument previously designed.

3.3 Pre-test (pilot study)

According to Litwin (1995), the pilot or pre-test was set up in one of the most important stages in the development of a new instrument. It is here that the structural errors are subject to correction. According to the same author, typographical problems of cultural understanding and can negatively impact the outcome of the research.

The literature also recommends that the pre-tests are conducted so that the researcher, to monitor and review the responses and comments from respondents throughout the process (before, during and after), and are also recorded comments, criticisms and suggestions of the researcher, for example, difficulties, ambiguous points, etc.

Trying to operationalize these concepts, it is necessary to refer to the pilot study conducted in August 2009 during the University Olympics - JUB'S. The University Olympics held once a year, athletes from 18 years in various universities around the country, eight (8) sports: soccer, volleyball, basketball, handball, athletics, judo, chess and swimming. However, for purposes of analysis, we stopped in this study, only the referees tied the sports mode of collective character.

Data collection was performed by the researcher and had the sample (n = 50), referees, with a mean age of 32 years, both sexes, participants in collective arrangements. The type of sampling was chosen as the non-probabilistic. The model questionnaire were distributed in moments of rest or off. After application, asked for feedback on the participants' understanding of items and appropriateness of the content of the questions.

4. CONCLUSIONS

Through the analysis of semantic and conceptual clarity, it was found that the understanding of the items, in line with expectations both in terms of face validity (expert committee), as the pre-test (referees). The only problem reported by respondents, is the lack of examples, in order to facilitate a better understanding of the items. Following the suggestion of several participants, were included examples in the more complex issues.

In a perspective of future studies, the next step in the development of QAEMAr refers to the verification of its psychometric properties across studies of trust. Thus, it is a posteriori, check both the internal consistency by Cronbach's alpha as the consistency or stability of responses over time (test-retest).

With this set of studies we intend not only to develop a psychometrically valid instrument, but also to confirm a theory that today it needs work using the metacognitive process as the center of the experimental analysis. In practice, the identification of the level of metacognitive awareness may assist in the implementation of new approaches related to sports psychology, with respect to the work of the referee sports.

REFERÊNCIAS

ANSELMÉ, Célia. A metacognição aplicada ao desenvolvimento do pensamento lógico-formal e sua implicação pedagógica. Tese de Doutorado. Instituto de Psicologia – UFRJ. Rio de Janeiro, 2003.

BANDURA, A. Self-efficacy mechanism in human agency. *American Psychologist*, 37, p. 122-147, 1982.

CÁRDENAS, Ramón Núñez. A Psicología como Ciência Aplicada à arbitragem no esporte, 2006. Disponível em: <www.psicodeporte.net/upload/Ramon_rte.doc>. Acesso em 20 out. 2009.

CRUZ, Feliu Jaume. Asesoramiento psicológico en el arbitraje. En Cruz Feliu, J. (ed), *Psicología del Deporte*, pp.245-269. Madrid: Síntesis, 1997.

FLAVELL, J. Metacognition and cognitive monitoring. *American Psychologist*, 34,906-911; 1979.

GIMENO, F., BUCETA, J. M., LAHOZ, D. Y SANZ, G. Evaluación del proceso de toma de decisiones en el contexto del arbitraje deportivo: propiedades psicométricas de la adaptación española del cuestionario DMQ II en árbitros de balonmano. *Revista de Psicología del Deporte*, 7 (2), 249-258, 1998.

ITTENBACH, R.F. & ELLER, B.F. A personality profile of southeastern conference football officials. *Journal of Sport Behavior*, 11 (3), 115-125, 1988.

LITWIN, M. S. How to measure survey reliability and validity, Sage Publications, Inc, Survey Kit. 7, 1995.

MACHADO, A. A. *Psicologia do esporte: da educação física escolar ao treinamento esportivo*. São Paulo: Guanabara Koogan, 2006.

NACHMIAS, Chava, NACHMIAS, David. *Research Methods in the Social Sciences*. New York: St.Martin's Press, 1996, 582p.

NOËL, B. *La metacognition*. De Boeck Université: Editions Université, Pedagogies en Développement Problematiques, 1996.

RECH, Cassiano Ricardo; DARONCO, Anderson; PAIM, M. C. C. . Tipo de Temperamento dos Árbitros de Futebol de Campo da Federação Gaúcha de Futebol da cidade de Santa Maria - RS. *Revista Eletrônica Efdesportes*, v. 08, n. 48, 2002.

SAMPIERI, Roberto; COLLADO, Carlos; LUCIO, Pilar. *Metodología de la Investigación*. McGraw-Hill, 1991, 505p.

SAMULSKI, D. *Psicologia do esporte: manual para a educação física, psicologia e fisioterapia*. Barueri: Manole, 2002.

VAN DER MARS, H. Observer Reliability: Issues and Procedures. In: Darts, P.; Zakrajsek, D.; Mancini, V. (Org.) *Analysing Physical Education and Sport Instruction*. 2. ed. Champaign IL: Human Kinetics, 1989.

WEINBERG, R. S.; RICHARDSON, P.A. *Psychology of Officiating*. Champaign, Ill: Leisure Press, 1990.

ELABORATION AND REPRODUCIBILITY OF A QUESTIONNAIRE FOR SELF-EFFICACY METACOGNITIVE FOR REFEREES

ABSTRACT

Data from the literature tend to reveal a great relationship between the development of mental functions and performance in several sports. For referees, there is a constant demand for professionals who make decisions quickly and efficiently. Self-efficacy and metacognition become central to these efforts, already covering the cognitive processes of higher order. Therefore, the development of new methods and tools of analysis appears to facilitate the search and drive new lines of work. In the literature, we observed that the growing interest in the phenomenon of self-efficacy metacognitive contrasts with the difficulty of measuring it, and that the search for an instrument to fill this methodological gap is needed. This initial analysis thus resulted in a version called Questionnaire Self-Efficacy for referees Metacognitive in collective sports (QAEMAr). Looking to the reproducibility of this instrument in relation to content validity, it passed the examination of three experts. Finally, in a pilot study, this version was applied to referees (n = 50) of both sexes, the collective modes, at the University Brasillian - JUB 'S 2009. The difficulties reported by participants led to the development of a second version of the original questionnaire. Reproducibility was ensured by the high percentage of registered agreements, most of the above limits of 80%.

KEYWORDS: referee, metacognition, self-efficacy, reproducibility of the instrument.

RÉSUMÉ

Données de la littérature tendent à révéler une très bonne relation entre le développement des fonctions mentales et les performances dans plusieurs disciplines sportives. Pour les arbitres, il existe une demande constante pour les professionnels

qui prennent des décisions rapidement et efficacement. Auto-efficacité et la métacognition désormais au cœur de ces efforts, qui couvrent déjà les processus cognitifs d'ordre supérieur. Par conséquent, le développement de nouvelles méthodes et outils d'analyse semble faciliter la recherche et lecteur de nouvelles lignes de travail. Dans la littérature, nous avons observé que l'intérêt croissant pour le phénomène d'auto-efficacité métacognitives contraste avec la difficulté de le mesurer, et que la recherche d'un instrument permettant de combler cette lacune méthodologique est nécessaire. Cette première analyse a donc donné lieu à une version appelée questionnaire d'auto-efficacité Metacognitive pour les arbitres (QAEMAr). Recherchez-vous à la reproductibilité de cet instrument par rapport à la validité du contenu, il a réussi l'examen de trois experts. Enfin, dans une étude pilote, cette version a été appliquée à des arbitres (n = 50) des deux sexes, les modes collectifs, à l'Université Brasileiro - S JUB '2009. Les difficultés signalées par les participants a conduit à l'élaboration d'une deuxième version du questionnaire original. Reproductibilité a été assurée par le pourcentage élevé d'accords enregistrés, la plupart des seuils au-delà de 80%.

MOTS-CLÉS: arbitrage, métacognition, l'auto-efficacité, la reproductibilité de l'instrument.

RESUMEN

Datos de la literatura tienden a revelar una gran relación entre el desarrollo de las funciones mentales y el rendimiento en varios deportes. Para los árbitros, hay una demanda constante de los profesionales que toman decisiones de forma rápida y eficiente. La autoeficacia y la metacognición convertido en central de estos esfuerzos, ya que cubre los procesos cognitivos de orden superior. Por lo tanto, el desarrollo de nuevos métodos y herramientas de análisis parece facilitar la búsqueda y la unidad de nuevas líneas de trabajo. En la literatura, se observa que el creciente interés por el fenómeno de la auto-eficacia metacognitiva contrasta con la dificultad de medir, y que la búsqueda de un instrumento para llenar ese vacío metodológico es necesario. Este análisis inicial de lo que resultó en una versión llamada Cuestionario de Auto-eficacia para los árbitros metacognitivo Methods in Collective (QAEMAr). Mirando a la reproducibilidad de este instrumento en relación con la validez de contenido, pasó el examen de tres expertos. Por último, en un estudio piloto, esta versión se aplicó a los árbitros (n = 50) de ambos sexos, los modos colectivos, en los JUB 'S de 2009. Las dificultades señaladas por los participantes llevaron a la elaboración de una segunda versión del cuestionario original. Reproducibilidad está garantizada por el alto porcentaje de acuerdos registrados, la mayoría de los límites anteriores del 80%.

PALABRAS CLAVE: árbitro, la metacognición, la eficacia, la reproducibilidad del instrumento.

RESUMO

Dados da literatura especializada tendem a revelar a grande relação existente entre o desenvolvimento das funções mentais e a performance nas mais variadas modalidades esportivas. No caso dos árbitros, há uma exigência constante por profissionais que tomem decisões de maneira rápida e eficiente. A auto-eficácia e a metacognição tornam-se fundamentais para tal intento, já que abrangem processos cognitivos de ordem superior. Por conseguinte, o desenvolvimento de novos métodos e instrumentos de análise surge para facilitar a pesquisa e orientar novas diretrizes de trabalho. Na revisão bibliográfica, foi possível verificar que o interesse crescente no fenômeno da auto-eficácia metacognitiva contrasta com a dificuldade de mensurá-la e que a busca de um instrumento capaz de preencher tal lacuna metodológica se faz necessária. Esta análise inicial resultou assim, em uma versão, denominada Questionário de Auto-Eficácia Metacognitiva para Árbitros em Modalidades Coletivas (QAEMAr). Perspectivando a reprodutibilidade de tal instrumento, em relação à validade de conteúdo, este passou pela análise de três especialistas no assunto. Por fim, em um estudo piloto, esta versão foi aplicada a árbitros (n=50), de ambos os sexos, de modalidades coletivas, nos Jogos Universitários Brasileiro – JUB' S 2009. As dificuldades relatadas pelos participantes motivaram a elaboração de uma segunda versão do questionário original. A reprodutibilidade foi assegurada pela elevada percentagem de acordos registrados, a maioria acima dos valores limites de 80%.

PALAVRAS-CHAVE: árbitro, metacognição, auto-eficácia, reprodutibilidade de instrumento.

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