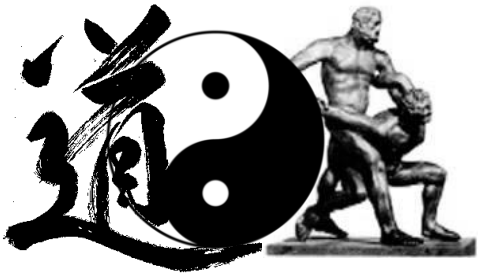
2011 SCIENTIFIC CONGRESS ON MARTIAL ARTS AND COMBAT SPORTS
Viseu – Portugal

13th - 15th May 2011

PROCEEDINGS

Scientific Editors

Abel A. Figueiredo
Carlos Gutiérrez-García



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Viseu 2011

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Objectives
1. To gather researchers to promote debate around the study object of the contexts of 'martial arts', 'combat sports' or 'self-defence': combat human motricity;
2. To reflect on on-going national and foreign research work;
3. To promote the dissemination of projects in the fields concerned;
4. To call the attention to the need of developing different scientific approaches.

Main Target Groups
Researchers in the field of martial arts/combat sports (MA&CS);
Teaching and training participants in the area of MA&CS;
Higher education students and advanced level practitioners;
Heads of Organisations promoting MA&CS.

Organization
Sport Sciences and Motricity Dep. - School of Education – Polytec. Inst of Viseu
ADIV – Development and Research Association of Viseu

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Journal of Asian Martial Arts (USA) (http://journalofasianmartialarts.com)
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Research Units Patronage – Portugal:
CI&DETS – Centre for the Study of Education, Technology and Health.
CIDESD – Research Centre on Sport, Health and Human Development.

CONGRESS PROGRAM INTRODUCTION

The Congress will be divided into two main blocks: (1) global approach (2) multidimensional.

The global approach on the first day will mainly focus on three areas:

a) MA&CS object of study, systematic, institutions and research;
b) Instructors and Coach Education processes in MA&CS;
c) Pedagogy and Didactical knowledge.

The multidimensional block will be based on the analysis of martial arts and combat sports according to five dimensions:

i) Physical dimension – physiological conditioning factors in physical training;
ii) Technical dimension - biomechanical conditioning factors in technical training;
iii) Tactical dimension –bioinformational conditioning factors in tactical training;
iv) Psychological dimension – affective and emotional conditioning factors in psychological training;
v) Socio-cultural and philosophical dimension – conditioning factors of norms, values and symbols.

CONTENTS

EDITORIAL

The 2011 edition of the **Scientific Congress on Martial Arts and Combat Sports (SCMACS)** will provide again, for the third time in Viseu, a valuable opportunity to promote, enlarge and strengthen the scientific community gathered around martial arts and combat sports (MA&CS). On this occasion, we are happy to have researchers from every continent signing any of the presentations accepted for the Congress.

The central issue of this Congress is the **global and multidimensional aaproach to MA&CS**. From this perspective, the congress is organized in different areas and dimensions so the different looks to MA&CS are covered. Senior researchers, undergraduate and post-graduate students (covering the levels of bachelor's, master's and Ph.D.), trainers, martial artists, etc., are invited to participate both during the formal and informal times of the Congress. We hope that not only high quality scientific knowledge is shared, but also ideas and proposal for the better development of MA&CS and their contribution to society.

In these *Proccedings* (abstracts book) all works are published in alphabetical order, according to the first author. Due to the quality of many of these abstracts, probably they will soon be published as articles in generic or specific MA&CS journals. Humbly, we ask authors to cite their presentation in this Congress as an early source for such articles, as this will help to extend the visibility and utility perception of this or any other MA&CS congress or meeting.

Finally, we want to send our best wishes to Japanese people and particularly to our Japanese colleagues, who cannot attend to the Congress due to earthquake tragedy in Japan. They have all the MA&CS community support and we all expect that they will be soon among us sharing their knowledge.

Viseu, 10th May 2011

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EFFECTS OF ENERGY INTAKE RESTRICTIONS AND WEIGHT LOSS METHODS IN A HIGHER RISK OF MUSCULOSKELETAL INJURIES AND CHANGES IN PHYSIOLOGICAL STATUS IN ELITE JUDOISTS

Promoted work by Plan Propio de Investigación de la Universidad de Granada 2010

Key-words: Body weight reduction, judo, physiological and psychological responses.

Objectives

The aim of this study was to analyze if there is a relationship between energy restrictions and rapid weight-loss methods, and the appearance of injuries and physiological changes based on bone density, blood pressure, menstrual regularity, etc., in high level judokas.

Material and Methods

We have done a review of the current literature, since 2000 to nowadays, in Scopus and SportDiscus databases, looking for statistical evidences of a relationship between energy intake restriction and these kind of injuries and diseases in weight-class sports, especially in judo.

Results

Previous studies confirm that energy intake restrictions and dehydration methods, followed by judoists in the last 7-10 days before a competition, could be the origin of some injuries like stress fractures and ligament sprains, or even cause some diseases like anemia and osteoporosis, also affecting bone density and menstrual function.

Conclusions

Results shown that there are significant evidences of a relationship between rapid weight-loss methods, including energy dietary restrictions, and a higher risk of suffering musculoskeletal injuries and/or physiological status alterations. Given these results, our recommendation is to consider the nutritionist as an essential part of any judo team, in order to evaluate the dietary intake of our judoists, and to make an effective control of their weight changes, coordinating efforts with the coaches.

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Andreto, Leonardo Vidal[a,b]; Esteves, João Victor Del Conti[a]; Branco, Braulio Henrique Magnani[a]; Romero, Paulo Vitor da Silva[a]; Gomes, Tricy Lopes de Moraes[a]; Pastório, Juliana Jacques[a]; Pastório, Eloa Jacques[a]; Silva, Danilo Fernandes da[a]; Babata, Lucas Kazunori Rubira[a]; Moraes, Solange Marta Franzoi de[a]; Machado, Fabiana Andrade[a]; Franchini, Emerson[a,b]

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PHYSIOLOGICAL AND TECHNICAL-TACTICAL ANALYSIS IN BRAZILIAN JIU-JITSU COMPETITION

The Brazilian Jiu-Jitsu is a sport that has gained great popularity in recent decades. However, little is known about the physiological characteristics involved in the combat (Franchini et al., 2003). Thus, this study aimed to investigate the physiological response to a regional combat performed by 31 male adult Brazilian Jiu-Jitsu athletes graded from white to brown belt (14 white belt, 12 blue belt, 2 purple belt, and 3 brown belt). Twenty-two combats were analyzed concerning techniques and time structure. Blood glucose and lactate were determined in Optium Xceed® and Accutrend® portable analyzers, respectively. Maximal isometric grip strength was performed using a Takei Kiki Kogyo® dynamometer, adjusted according to hand size, before and after the combat. Two attempts were performed for each hand in each moment, and the highest value was considered. Rate of perceived exertion (RPE) was also accessed after the combat using the 6-20 Borg Scale. The combats were recorded using a Sonny® digital camera, and the following variables were determined: a) effort/pause ratio; b) subjective intensity of actions, categorized in low and high intensity. A high-intensity action was considered when the fighter tried to advance/progress/evolve with clear vigor, muscle strength or power, while low intensity actions were those when movements were slow and low strength seemed to be applied. Data were processed using the Excel® and SPSS® 15.0. Normality was accessed using Shapiro-Wilk test. *Student* t test and Wilcoxon test were used to compare moments of measurement. Significance level was set in 5%.

Table 1 presents the results for each variable measured.

These results indicate that during Brazilian Jiu-Jitsu combat the glycolytic pathway is moderately activated. The activity performed during the match resulted in significant reductions in handgrip strength. Effort/pause ratio was 6:1, while high-intensity actions lasted approximately 4 s, resulting in low/high intensity ratio of 6:1. This time structure can be used to prescribe both physical as technical-tactical training.

Table 1. Glucose (n=30), lactate (n=27), hand grip isometric strength (n=31), rate of perceived exertion and technical analysis (n=22 matches) before and after Brazilian Jiu-Jitsu combats.

Variable	Before Combat	After Combat
Glucose (mg/dL)	106.8 ± 18.4	129.2 ± 22.7*
Lactate (mmol/L)	3.8 ± 0.7	11.2 ± 4.0*
RHG (kgf)	46.9 ± 10.4	41.2 ± 9.2*
LHG (kgf)	45.7 ± 11.6	37.4 ± 9.8*
RPE	-	14 ± 2
Technical-tactical analysis		
Effort time (s)	126 ± 79	
Effort blocks	2 ± 1	
Pause time (s)	20 ± 14	
Pause blocks	2 ± 1	
High-intensity actions (s)	4 ± 4	
Segments of high-intensity actions	8 ± 3	
Low-intensity actions (s)	25 ± 9	
Segments of low-intensity actions	10 ± 3	

Values are expressed as mean ± standard deviation; RHG: right hand grip, LHG: left hand grip, RPE: rate of perceived exertion, * $p < 0.05$ compared to before combat.

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WHAT IS BODY FIGHT AND WHAT IS MARTIAL ART: A PHENOMENOLOGICAL ANSWER

The objective of the present research is to make a philosophical investigation to define the essence of two phenomena: real fighting and martial art, thus contributing to a wide field of research and to approach clarifying normalization of the practices referring to both phenomena. If it is possible to find definitions to these cultural objects in literature, none has yet been based on a simple registry of phenomenological analysis and there are also no sufficiently comprehensive and precise definitions to embrace the wide variety of practices without affording vague and little clarifying positioning. The methodological perspective adopted is the classical phenomenology, in which the intention is to reduce the object of study to its essence. In such operation, the object to be studied is approached in a reorientation of natural attitude, in which the accepted assumptions concerning the object are lifted up in order to be extracted only what is demonstrated in the phenomenon itself. The reduction is dealt as a subtraction procedure of those characteristic of the phenomenon shown to be only accessories, conducting to the phenomenological orientation and to the essence of the phenomenon. In order to the essential stability of the phenomenon to be verified, i.e. that without which the phenomenon is not what it used to be, the criteria used is the *eidetic variation,* in which different possibilities to the phenomenon are raised to guarantee the persistence of its structure. As a conceptual data, body fight is a general case when compared to martial arts, therefore it embraces the martial arts, having also in them some ways for the body fight to be specified. In natural orientation, fight can be defined as a physical confrontation institutionalized and regulated by norms that control the behavior of the players and the victory and defeat criteria. It defines better a combative sport than body fight. Every combative sport is a body fight, but the opposite is not true. Setting aside the natural definition, the intention here is to apprehend what is shown to be immediate in body fight. For a first aesthetic evidence, body fight is a physical confrontation, however other phenomena share the same characteristic towards fight. By this definition, struggle, duel and some types of plays are aesthetically similar to fight. Similarity is not identity and, regarding other phenomena, the aesthetic distinction of fight opens its correlated ethic dimension. The first fundamental ethical aspect found in fight is the mutual availability among the players: both are willing to fight and both are open to the willingness of others. Another ethical aspect is that body fight finds its motivation in itself, in the challenge of physically overtaking the other and to avoid being overtaken. In struggle, hardly ever the confrontation is motivated by hostility and such motivation reifies the

other while disaffected. Such closing to others apprehends only negative and threatening motivation from the opponent. In struggle, the hostile player tends to experience the other hastily, and the hostility characterizes the unilaterality opposed to the mutuality of the fight. However, in duel it is noticed that the motivation for the confrontation is to have it as an honor solution. There are no unilaterality for duel, but a mutual agreement among the fighters, once both are willing to accept the others opportunity to also fight for honor. If playing is similar to fighting, on the other hand, it centralizes the motivational experience in playful grace, not in the determining challenge of combat. Therefore, the essence of body fight is in marking out the intention regarding a body that is also a subject: the goal is to restrict the mobility of a body-subject and the frustration of the others intention, determining thus the fight aesthetical pole and its beats. This intentional goal is ethically determined by the condition of being able to fully live it and to know that the opponent is also living it, both accepting the challenge. Martial arts are trainings in body fight, uniting both the aesthetical and ethical poles, as well as the possibility of facing variations to the fringe phenomena. If martial arts are defined by its training, they are compromised to the essence of body fight above described, once struggles, duels and playing cannot be properly trained. Nevertheless, training can enable fight situations, just like those combative sports are, as well as those not properly characterized as fight, but as struggle, duel, personal defense and some types of playing. The sistematization of body fight aesthetic pole defines one aspect of martial arts; the other aspect is defined by the enhanced typification of fight ethical pole, in other words, by a typical conduct that is referred to combative attitudes. This enhanced reference implies a moral dimension, culturally articulated, concerning behaviors that avoid some types of confrontation and affirms ways of facing them. In an exclusive commitment either to the enhanced ethical pole or the systematized aesthetic pole, there is no longer martial art, but morality and systematized fight, combative technique. It is concluded thus that martial arts, resulting from the intentional structure of fight, holds an ethical essence in all against the promotion of violence.

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CAPOEIRA – FIGHTING SPORT: ITS APPLICATIONS TO EDUCATIONAL ENVIRONMENTS

Keywords: Capoeira; Educational environments; Body expression; Brazil; Fight

Whilst it is acknowledged that Capoeira was originally a sort of fight, nowadays there are no questions regarding the evidence that Capoeira has assumed different forms according to the social contexts of different cities in many countries. All those dimensions of the game/fight of Capoeira, though, can be explored together in the educational context by presenting the game as the art of body dialogue, gymnastics as a way to develop and enhance physical and motor abilities, and choreography as an instrument of artistic expression that involves body, music, and poetry. Furthermore, Capoeira can provide students with competitive and symbolic experiences, since it involves competition and can be a form of workout, the latter being rather common in environments such as health clubs. All those possibilities are based on the observation of the teaching of this fighting sport in different environments, including the educational environment at all its levels, in which we could notice no difference regarding the teaching method of Capoeira basic techniques, and no concerns about carrying out a coherent approach in order to systematise the motor development of Capoeira practitioners, specially of children and teenagers. Based on that, we point out the historical path of this sporting fight within the Brazilian social context in the 19th and 20th centuries, when it was first applied to different military levels and then was introduced into primary education and higher education environments in some Brazilian states. Either the observation of the development of Capoeira in the aforementioned environments or the detailed description provided by several documentary sources, or even its oral tradition, reveals no special methodology regarding its teaching according to different contexts. Taking into account that and the understanding that fighting sports teaching in schools, particularly Capoeira, should be based on the principles and objectives of the teaching system, and not on the processes exclusively required for the development of fighting skills, we have been working on a methodological proposal specifically designed for teaching environments and the objectives, principles and strategies related to them. These different applications of Capoeira are currently taught at the FCDEF-UC in a class called *Practical Studies – Capoeira*, which intends to provide students with instruments to explore the different dimensions implicit in the body expression of the Brazilian fight, either as a fighting or a gymnastic and artistic discipline.

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TEACHING-LEARNING PROCESS OF MOTOR SKILLS TYPICAL OF FIGHTS, MARTIAL ARTS AND COMBAT SPORTS

Fight techniques are considered a cultural heritage for several populations as they were created for specific purposes according to the historical period (Back & Kim, 1984). Recently, fight techniques became a parcel of the educational and sporting process, which demanded a slight modification in combat modes to milder ones, aiming to a more secure practice and specific rules (Franchini, 2007). Meanwhile, it's important to notice that the martial arts education is still based on traditional class methods, in which teachers opt to valorize the quantity of repetitions of techniques instead of supporting the addition of scientific knowledge, which would benefit tactics in several levels of learning. The instructions given to these activities have been focused on the right form, instead of focus on why these skills are so important. Besides that, in every training session, the same behavior between teacher/master in relation to the structure of the class has been observed. It has been noted that the lack of structure and systematization of these knowledge makes the martial arts teaching a few exploited potential. The present abstract has as an objective to describe methods of teaching-learning for motor practices typical of fights, taking in consideration (a) references about the theme, (b) the processing of information and the acquisition of motor skills, (c) the fight techniques and teaching styles for different levels of training.

When the process of teaching-learning of fights is considered, the first thing to be deliberated is its nature, specially its open and individual characteristic (Figueiredo, 1998). Understanding the fight as an open skill that involves components of decision-making, it's natural that the transfer of practical skills to performance will be reduced when these are practiced in a closed context. The segregated practice improves accuracy; however, it doesn't help to understand the practice on its own. Literature articles (Kozub & Kozub, 2004; Na, 2009) show that understanding the reason for the technique is better than simply learn the right sequence of movements. The focus on tactic provides sense to the skill.

Under this assumption, an interesting methodology that might be used in martial arts teaching is the "Teaching games for understanding" (TGU), where the teacher offers experiences that provide the students to act with tactical solutions. However, within fights, if the mentioned method is applied with people who do not present consistency in their motor skills, it might not be the best choice. For that reason, when choosing a teaching methodology it's important to pay attention to the learning phase (cognitive, associative and autonomous)

where the learning person is inserted. For beginners (i.e., cognitive phase), methods more closed and focused on technique would be a better option (Winkle & Ozmun, 2003), once they show themselves more effective on accuracy's improvement. In the course of time, it's possible to implement components of decision-making and some TGU. The amount of tactical problems must be proportional to the learning phase of the student, in other words, the more automated the movements are the more decision-making components and environment instability can be added (Kozub & Kozub, 2004). Other aspects that deserve the teacher attention are: to reinforce "fair play" between players; to follow a complexity level in the task; to initiate with few games and increase then progressively; to mix weight categories; to reinforce the necessity of a certain skill level to fight with security. Finally, we can note that there are a series of possibilities of teaching methods where the adoption must consider the level of learning of the student.

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THE NON-SELECTION OF FENCING WITHIN THE CONTENTS OF PHYSICAL EDUCATION IN SCHOOLS IN THE VALENCIA COMMUNITY.

Introduction

The least selected contents of E.P.by teachers in secondary schools, are combat sports (Robles, 2008) because they don´t know them (Carratalá: 1998, Mendoza, 1990; ECERS: 1990). Fencing is one of the disciplines most affected in this regard. It has not been included in the curriculum in schools for various reasons: lack of know ledge, great complexity, material cost and the lack of teaching materials and literature specific to fencing in the education system (Saucedo et al. 2009). Moreover, combat sports have a number of social prejudices and beliefs that affect their selection e.g.: methods that are aggressive and dangerous (Villamón, Gutierrez, Espartero, Molina, 2005). This makes the number of practitioners is fall, affecting the future design and training of the national fencing team. This has been reported by several authors: Olivera 1988; Torres, 1989; Carratalá, 1990, Perez, 1993; Simon, 1997; Brousse 1999; Molina and Castarlenas, 2002.

In this article we present the results of a survey of PE teachers in the Valencian Community for the assessment of issues relating to the causes that affect the non-selection of fencing as a sport in school.

Method

Information was gathered from sample of all secondary school teachers currently specialing in physical education professional practice in Valencia Community. A questionnaire was sent to 722 centres of wich 106 teachers (62 males and 44 females) with anaverage of 14 years of teaching experience, participated.

The questionnaire was designed for this research validated by technical the judges with 15 closed response items grouped into: 1) Teaching profile 2) Capacity and difficulty, 3) aggression and danger 4) Knowledge and motivation 5) Instruction and curriculum materials. To obtain the results descriptive statistics have been made based on the frequency responses.

Result

Content rating of fencing: We found that 72.7% of teachers are aware of the sport of fencing. 33% considered themselves capable of implementing a didactic unit in the fencing, while 37.7% did not. On the other hand, 72.6% think that fencing is an easy sport to learn and teach their students but need specific instruction. 57.5% of teachers value fencing as a motivating sport for them and 62.3% say it would motivate their students, too.

Belief that fencing is dangerous and aggressive: only 13.2% think that the content would be dangerous for a PE class and 67% considered that it would not encourage aggression, 73.6% confirmed that it would not to be risky for their students.

Review of training and curriculum materials: 76.4% is willing to spend their free time in learning, only 12.3% of teachers think negatively. 86.8% of respondents agree that there should have more educational materials on the mode and 34.9% agreed that the fencing material is expensive to carry out a UD fencing at its center.

Conclusion

• Teachers are aware of the sport, but do not feel prepared and able to undertake a teaching unit of fencing, they do not considerate it difficult to learn and teach if they previously receive the adecuate instruction. They show a high motivation towards its implementation in the classroom.

• Perceived lack knowledge of control, but there is great interest of teachers in learning the basics of fencing to invest in their free time. Also confirm the lack of suitable curriculum materials and a very expensive cost for the school.

• Teacher beliefs about the danger, risk and aggressiveness of fencing as school sports are not a determining factor when choosing the sport.

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ELECTROMECHANICAL DELAY IN KARATE ATHLETES

Key-words: Electromechanical delay, ballistic movement, motor control.

Introduction

The aim of the present study was to analyse the electromechanical delay (EMD) between male and female karate athletes when they performed a ballistic movement of superior limb on a *makiwara*.

Methods

Ten male and eight female karate athletes performed 10 repetitions of a motor skill which consist in upper arm flexion and elbow extension (*tsuki-zuki punch*) to the *makiwara*. Surface EMG activity of the *anterior* (AD) and *posterior deltoid* (PD), *pectoralis major* (PM), *latissimus dorsi* (LD), *triceps brachii* (TB) and *biceps brachii* (BB) of these subjects were recorded, using bipolar electrodes connected to a Biovision System.

The time of movement, beginning and stopping instant, were recorded using electromagnetic tracking device, Flock of Birds System. It was used a set-up of two sensors located on arm and forearm. A third sensor was mounted on the *makiwara*.

The EMD was defined as the difference between the onset of the EMG and the initiation of movement. Motor skill movement time offset was defined when the subjects reach the target.

The motor skill means from each group were used for analysis. Aiming to verify if there were significant differences we used analysis of variance with One-Way Anova ($p \leq 0.05$), using the statistical programme SPSS version 16.0.

Results

Results revealed that male athletes had smaller EMD (0.003 s ± 0.001) between the onset of AD muscle activation and the beginning of upper arm flexion than female athletes (0.061 s ± 0.046). The difference between groups is significant ($p=0.011$).

Significant differences were found to in agonists/antagonists relation of upper arm flexion, specifically in PM/PD ($p=0.005$) and in AD/LD ($p=0.047$), showing that male athletes had higher EMD in this relation.

No significant differences were found in upper arm flexion antagonists, in elbow extension agonist and antagonist muscles neither in elbow extension agonist/antagonist relation in the EMD.

Conclusion

We concluded that only in upper arm flexion movement was verified a gender influence reflected in EMD, namely in agonist muscular activity and in agonists/antagonists relation. Smaller EMD presented by male athletes in AD muscle reveals a larger effectiveness in the transfer of the contractile force to

the beginning of movement and in its duration, but it leads to an antagonist activation instant adjustment, retarding the beginning of agonist/antagonist cocontraction. The differences in EMD between male and female athletes could represent a different strategy of control the neuromuscular coordination in those groups.

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ATHLETIC IDENTITY IN COMBAT SPORTS

Key-words: Athletic Identity, Combat Sports, Gender, Age.

Introduction

The athlete's ability to perform at the highest level, reaching its superior performance seems to be related to how an athlete sees him or herself in his or her role. We call athletic identity to the degree of identification of an individual with the role of athlete. Cieslack (2004) suggested a model of five dimensions to explain the multidimensionality of sport identity: 1) social identity (representing the extent to which an individual is identified as an athlete from a social point of view), 2) exclusivity (reflecting the degree to which an individual's self-worth is determined solely by his performance with the athletic role), 3) negative affectivity (the extent to which an individual interpretation of sport experiences result in a negative emotional response), 4) self-identity (describes the extent to which an individual perceives himself as an athlete); and 5) positive affectivity (representing the degree of satisfaction and encouragement that a person feels as a result of positive outcomes of sport participation).

Research that examines the relationship between athletic identity and sport participation has produced important findings when trying to understand it and studies show that males achieve higher athletic identity, older students achieve higher athletic identity and athletes of middle and advanced technical level had higher levels of athletic identity in contrast to the high level and experienced (Anshtel, 1995, cit for Cieslak, 2004).

We aim to investigate the relation between athletic identity and the variables gender, age and competitive level in combat sports.

Methods

Our hypotheses were as follows: athletic identity will stronger in male athletes than females, as well as athletic identity will be stronger in younger athletes and will become consolidated along the competitive level. We hypothesized, also, that athletic identity will not be different between types of combat sport.

One hundred fifty nine (159) athletes participated in this study: Judo (N = 34), Olympic Wrestling (N = 19), Jiu-Jitsu (N = 11), Kick-Boxing (N = 9), Muay Thai (N = 16) and Fencing (N = 70). We applied the Portuguese version of the Athletic Identity Measurement Scale Plus –EIA-Plus (Cabrita & Rosado, 2007).

The AIMS questionnaire included demographic questions pertaining to the participants' age, gender, sport combat discipline, age and competitive level of participation in sport. To validate the questionnaire a confirmatory factorial analysis was made. Other statistical analyses were carried out using SPSS for Windows (Version 17.0) including descriptive statistics (frequencies,

percentages, means and standard deviation), the Shapiro-Wilks for normality of data, and the Levene Test for the homogeneity variances. In order to explore group differences, One-way ANOVA and Manova were applied. Post-hoc analyses for scale differences were carried out with Tukey's post hoc multiple comparisons.

Results and Conclusions

Using the Cronbach alphas the AIMS was found to have acceptable reliability and validity. The factorial structure of Portuguese version of the AIMS was deemed satisfactory. The statistical analyses made to the questionnaire through a confirmatory factorial analysis revealed a good fit of the athletic identity model. Results showed that GFI = 0.8948, CFI = 0.9863, GFI = 0.9299, RMSEA = 0.307 and PCLOSE = 0,951. All estimated parameters were statistically significant and within an acceptable range. The questionnaire consisted of 18 questions being answered in a rating scale ranging from 0 (fully disagree) to 100 (agree totally) distributed into four scales: social identity, exclusivity, positive affect and negative affect with higher scores indicative of a stronger identification with the athletic role. Considering age and gender, we concluded that age influence athletic identity; however, they are not influenced by gender and type of combat sport.

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OXYGEN CONSUMPTION AND HEART RATE RESPONSES DURING TAEKWONDO COMBAT SIMULATION

Taekwondo is characterized as an intermittent combat sport. In accordance with the current rules (World Taekwondo Federation; WTF) the combat is composed by three 2-min rounds with 1-min interval between them. Due to its short duration, some studies suggested that the determinant actions in this sport are maintained by the anaerobic metabolism (Reilly et al., 2005; Butios and Tasika, 2007; Bouhlel et al., 2006), although the recovery period, maintained by the aerobic metabolism, is also relevant (Matsushigue et al., 2009) and its quantification would allow an estimate of energy expenditure. Thus, the purpose of this study was to quantify the oxygen consumption in simulated taekwondo combat and compare this data with the values of estimated $VO_{2max.}$ Ten experienced national/international level male taekwondo athletes (mean ± SD; age = 21.9±5.8 years; body mass = 67.2±8.9 kg; height = 176.2±5.3 cm) were submitted to 2 testing sessions: (a) a shuttle run test to estimate maximal oxygen uptake validated for taekwondo athletes (Cetin et al., 2005); b) a simulated combat (three 2-min rounds, with 1-min intervals), as per the current WTF rules. During this activity, carried out within official area, the following measurements were taken: heart rate and oxygen consumption (VO_2). The data were analyzed using the SPSS software. The descriptive analysis involved mean and standard deviation calculations. The variables were compared using a one-way analysis of variance (ANOVA) with repeated measurements. When necessary, the Bonferroni multiple comparison test was used in order to identify possible differences between rounds. The statistical significance level used was $p < 0.05$. The estimated VO_{2max} was 57.3±5.4 $ml.kg^{-1}.min^{-1}$. During the match VO_2 values were: 1st round = 44.4±6.2 $ml.kg^{-1}.min^{-1}$ (79.1±14.5% VO_{2max}); 2nd round = 52.1± 5.9 $ml.kg^{-1}.min^{-1}$ (92.3±14.8% do VO_{2max}) and 3rd round = 53.4±5.9 $ml.kg^{-1}.min^{-1}$ (93.9±15.4% do VO_{2peak}) Heart rate (HR) values during rounds were: 1st round 156±9 bpm; 2nd round 169±9 bpm and; 3rd round = 175±10 bpm. The peak heart rate (HR_{peak}) achieved during the match was: 1st round 172±7 bpm; 2nd round 183±7 bpm and; 3rd round = 189±4 bpm. The VO_2 during the match differed among rounds, with lower values in the first round compared to the second and third rounds ($p < 0.001$ for both comparisons). No difference ($p > 0.05$) was identified between the second round and third rounds. The HR_{peak} presented differences between rounds, with lower values in the first round compared to those in the last two ($p < 0.001$ for both comparisons), and lower values in the second ($p < 0.05$) compared to those in the third round. The HR_{mean} presented differences between rounds, with lower values in the first

round compared to those in the second and third rounds ($p < 0.001$ for the two comparisons), and lower values in the second ($p < 0.05$) compared to those in the third round. The results of the present study indicate the increase of aerobic metabolism and cardiovascular demand (as an essential aspect to give support to the former) throughout the rounds, indicating the need to consider the improvement of these systems via specific training for a successful outcome in the final periods of taekwondo combat.

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TRAVEL FOR THE STUDY OF MARTIAL ARTS

The author applied the method to long-term participant observation in the environment of martial arts. He characterizes “the martial arts tourism” from the perspective of the axiology of this kind of travel, within the framework of system theory and the sociology of tourism, the humanist theory of martial arts and theoretical reflection on the two cultural phenomena. He analyzes the question of individual, cultural experience and the problem of motivation (the value-target category) tour participants. In addition, he takes trips to explore the relationship of martial arts with learning about the culture of their country of origin.

A participant of a foreign training seminar in the martial art is like a tourist who goes to a special art performance in a dual role - as a spectator and as an actor. This gives the possibility of artistic self-realization, self-expressive. For a person that is working with a genuine master there is another direct experience - both physical (movement, exercise), internal (spiritual) and intellectual (realization of cognitive needs). Contacting master of martial arts is the encounter with the work of this art (Sieber, Cynarski, Litwiniuk, 2007; Cynarski, 2009).

Especially valuable for learning about the cultural context of martial arts is to study "at source". Tourism includes dimensions - self-creative (for the development of personality), educational and self-realizational, creates his own body and personality through the psychophysical practice. In addition, the traveler is attending a cultural dialogue between the ages, cultural circles, and between - the martial arts teachers and their students.

A special case of travel for the study of martial arts is a departure for a scientific congress or conference which is devoted to the field of "martial arts sciences". The traveler is then usually both a researcher and theorist, and a participant in scientific debates. Departures of this kind are a variety of congress tourism and usually contain elements of cultural tourism. But it is hard to overestimate the dimensions of cognitive and self-realizational in such trips.

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TECHNICAL AND TACTICAL PROFILE OF EGYPTIAN ELITE BOXERS

Key-words: Amateur boxing, Technical performance effectiveness, Combat

The aim of this study was to assess technical and tactical profile of Egyptian elite boxers who were included in the national boxing competition, Cairo, 2010. Profile was produced derived from video recording of boxing matches of 3 x 3 min duration. The analysis of this recording would create a strategic profile containing the usage of technical and tactical elements over the progression boxing contest, in addition to determine differentiation among winners and losers. A Sample of 66 first-ranked male elite boxers (aged 22.1 ± 2.3) in 33 fights (11finals; 22 semi-finals) were comprised. The entire amount of variables for this study was 19 variables in order to describe technical and tactical elements through boxing match. Descriptive statistics were got for all variables. For all statistics, the level of significance was set at $P<0.05$. Differences among consequent rounds were examined by a combined 3 x 2 within and between factors ANOVA to identify main effects through rounds as within winners or losers, with Bonferroni post-hoc analysis. Results showed that winners were highly developed than losers in performing offensive skills (straights, hooks and uppercuts) directed to head or body; total, lead and rear hand punches; boxing combinations (2 punches combinations and 3 or more punch combinations); defensive skills with (arm, foot and trunk); and technical performance effectiveness statistics (offensive, defensive and technical performance effectiveness). Data emphasized the significance of shouting much punches in both strategies singles and in combinations in order to score more points than opponent. Defensive skills should be utilized by arm, foot and trunk connected with attack. Prospective studies need to be considered to investigate the association between performance and physiological and biomechanical variables.

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HISTORY OF *GOUREN (*19TH-21RST CENTURIES): INVENTION OF BRETON WRESTLING

Key-words: Invention of traditions, collective identity, game, sport, heritage.

The object of this thesis is to shed light on the history of Breton wrestling, known as *Gouren.* It will also question its role in Breton culture.

It will start with a few apparently simple questions: What is *Gouren?* How does such a tradition survive the passing of time? What, significance, if any, does change have?

We will show how any history of Breton wrestling should be undertaken from ananthro-historical perspective. First of all the history of this practice must be explained with the different steps and alterations that have affected this activity and its adepts. The origins and status of the various participants and institutions at the heart of Breton society during the 19th and 21rst centuries will also be shown: this at a time when France promoted different concurrent physical activities.

The roles, speeches and demands of those who have invested their time in Breton wrestling as a means of affirming Breton identity will also be studied; as will the continuously reactivated and re-invented reconstruction of an idealised past in the name of *bretonnité* (as defined by Hobsbawm and Ranger, 1983).

In conclusion Gouren, having, particularly during the 1930s, been recreated as a traditional sport, has become a cultural sphere containing a complex alchemy between, on the one hand the desire to perpetuate a wrestling tradition whilst adapting it to modern sports usages and yet on the other hand maintaining the perceived purity of traditional Breton customs which reinforce local identity. This creates an ambiguous relationship between tradition and modernity, past and present which to this day inspires debate concerning the cultural definition and/or institutional legitimacy of Breton wrestling.

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OXIDATIVE STRESS IN FEMALE ELITE JUDOISTS

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Key-words: Judo, Sterkowicz test, catalase, hidroperoxides.

Introduction

Judo is a sport that requires explosive and important aerobic conditioning. In addition to specific training program, judoists are subject to the restrictions on the weight of each category, which sometimes involves the use of unhealthy weight loss methods to reduce body weight. They converge, in addition to the physiological stress of sports, the stress of caloric restriction and/or use of other methods that lead to weight loss quickly. The state of the antioxidant system of these athletes might be more engaged with respect to other specialties. Given that this aspect is not well studied, our aim was to evaluate, during a specific test, markers of oxidative stress and to correct them if necessary by a specific dietary intervention.

Material and methods

In this study participated 10 elite female judoists, 26.06 ± 1.15 years old and several weight categories. The participation of the subjects was voluntary and implemented at all times the fundamental principles of the Declaration of Helsinki and the Council of Europe Convention. Participants performed Sterkowicz test and were recorded heart rate and took two blood samples of 5 ml (one at the beginning and again at 15 minutes after finishing the test). Among other parameters were measured those related to oxidative stress: plasma hydroperoxides, TBAR's and catalase activity. The results are expressed as mean ± standard deviation. The comparison of means was performed using a one-way ANOVA (SPSS 15 for Windows, SPSS Inc. Chicago,IL,USA).

Results and conclusions

Through data test (see table 1) we can conclude that the Sterkowicz test is a maximum and cause oxidative stress judoists. In addition, individual results, in some cases allowed us to make specific recommendations to athletes about the

adjustment of diet and micronutrients leading to partially alleviate the oxidative stress.

Table 1. Physiological parameters measured in elite judoists.

Parameters	Situations	Mean ±SD
Heart rate (bpm)	Final test	177,0±4,4
	1 minute later	153,5±4,5
TBARS (nmol/ml)	Rest	3,73±0,56
	Effort	6,73±0,85*
Hidroperoxides (nmol/ml)	Rest	2,52±0,7
	Effort	3,14±0,33
Catalase (s-7mg-1)	Rest	0,168±0,018
	Effort	0,178±0,021

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PREDISPOSING FACTORS TO INJURY AND ITS SEVERITY IN ELITE JUDOITS

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Key-words: Weight Loss, elite judoists, dehydration.

Objective

To determine the influence of age, sex, BMI, time spent on the high competition and methods of weight control used by elite judoists in the development of injures and the severity of them.

Method

The study included 144 elite judoists, 78 men and 66 women, aged between 15 and 29. All patients were administered an extensive battery of psychological assessment instruments, including the Food Restraint Scale (Herman, Polivy and Warsh, 1978), which was adapted to eating habits and weight changes observed in judoits days and/or moments before the weigh-ing of a competition.

Results

Injured judoists were older (F [1.140] = 5,001, p <0.027), had more years in top level competition (F [1.138] = 4.59, p <0.034), and most frequently used methods of weight control (food and fluid restriction, takes sauna bath, use plastic clothes while doing exercise) compared with uninjured judo. Regarding the severity of injuries, women judoists with more serious injuries which showed a higher BMI (F [2.21] = 3,740, p <0.041) compared to judoists with mild and moderate injuries respectively. On the other hand, women judoists with more serious injuries most frequently used methods of weight control than judoists with moderate and mild injuries.

Conclusions

The results suggest that the methods used by elite judoists to reduce body weight are based mainly on food restriction and dehydration, increasing both the

number and severity of injuries and having a negative impact not only on performance but on health.

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THE ROUNDHOUSE KICK IN FUNCTION OF THE TWO TARGET LEVEL

Introduction

The aim of taekwondo athletes is to knock out or score more points than the opponent. In 2010, competition rules changed and a kick to the head is now worth three points while a kick to the chest is worth one point (WTF 2010). Strategically it therefore seems reasonable to kick towards the head to score most possible points. Within the number of techniques that can be used to score points, the most frequently used kick is the roundhouse kick to the chest (or bandal chagui), followed by the roundhouse kicks to the head (or dolio chagui) (Khon et al. 2004). Both can be easily adjusted to the execution distance (Falco et al. 2009) while the main difference between them is the height of the target (O'Sullivan et al. 2009). The lower height of the chest makes this an easier target to reach and thereby score points, and may explain why this is more frequently used than the roundhouse kick to the head which has a higher level of difficulty. Therefore, the aim of the study is to compare the roundhouse to the head and to the chest with regard to the mechanical variables impact force, reaction time, execution time and total response time from three execution distances (short, medium and long).

Methods

Forty-nine taekwondo players (21 expert and 28 novices) weighing from 46 to 101 kg (M = 70.97; SD = 12.91) and with a height ranging from 1.53 to 1.93 m (M = 1.73; SD = 0.15) were selected to participate in the study. The data collection was made using a force platform, a contact platform, a led or red light, a microcontroller and a Pc. Each taekwondo player performed two trials from each of the three execution distances. When analyzing the data, the average of the two trial kicks for each distance was calculated. The Bonferroni correction was applied to reduce the accumulated error in the 12 t tests performed (p < .01).

Results

As can be seen in table 1, t-test for related samples showed no differences, neither experts nor novices between these two kicks in any variable of the study (p > .01).

Discusion

The results of the present study showed no differences in impact force, reaction time, execution time or total response time between roundhouse to the chest and roundhouse to the head. This is in contrast with Estevan et al. (2009)

and O'Sullivan et al. (2009) who found significant differences in impact force when comparing the mid and the high section although they did not study the kick with reaction time. One possible reason for this could be the ability of the body to generate a greater effective mass and leg acceleration for the head level kicks with regard to the kinetic link principle. Therefore, more studies are needed regarding a more similar performance to a competition situation.

Table 1. Descriptive (mean and standard deviation) and p value of the t-test for related samples of the mechanical variables

		Expert (*n* = 21)					**Novice (*n* = 28)**				
		Bandal		**Dolio**			**Bandal**		**Dolio**		
	ED	M	SD	M	SD	*p*	M	SD	M	SD	*p*
IF	1	1363,17	612,93	1153,67	452,48	.10	1243,17	747,08	1090,88	437,56	.32
(N)	2	1050,55	531,31	1131,14	476,88	.61	1047,38	705,65	1012,15	473,3	.78
	3	1141,79	557,66	930,93	455,07	.12	854,02	457,36	910,19	415,39	.56
RT	1	0,489	0,073	0,514	0,117	.44	0,506	0,096	0,522	0,081	.44
(s)	2	0,507	0,08	0,529	0,117	.48	0,538	0,133	0,573	0,068	.18
	3	0,6	0,121	0,62	0,114	.56	0,62	0,121	0,644	0,108	.32
ET	1	0,264	0,066	0,295	0,048	.12	0,271	0,063	0,299	0,08	.13
(s)	2	0,324	0,119	0,327	0,064	.92	0,292	0,063	0,303	0,048	.43
	3	0,344	0,095	0,369	0,078	.35	0,361	0,108	0,38	0,112	.52
TT	1	0,753	0,078	0,81	0,123	.11	0,766	0,086	0,817	0,075	.02
(s)	2	0,832	0,11	0,854	0,1	.54	0,825	0,133	0,875	0,08	.12
	3	0,946	0,082	0,999	0,112	.06	0,97	0,096	1,023	0,097	.06

Note: IF = maximum impact force (N); RT = reaction time (s); ET = execution time (s); TT = total response time (s). * $p < .01$

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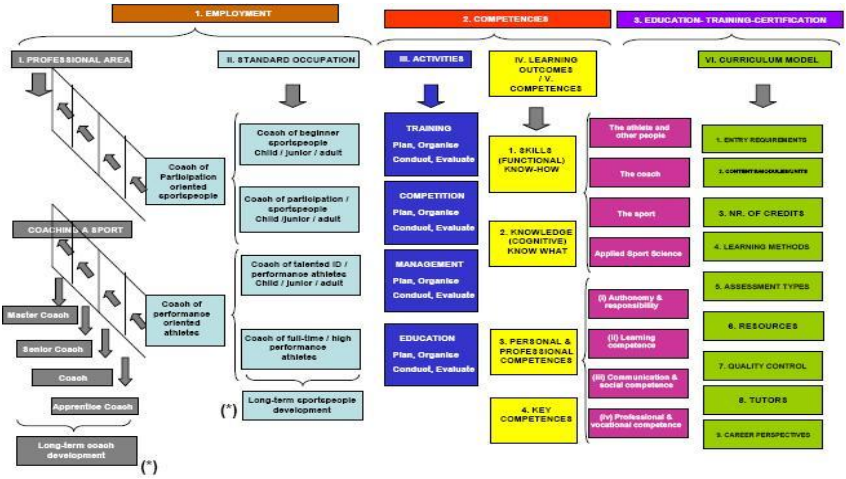
LEARNING OUTCOMES FRAMEWORK ON MARTIAL ARTS AND COMBAT SPORTS COACH EDUCATION

Objectives

The aim of this study is to present a framework for learning outcomes of Coach Education curriculum development on various possibilities.

Problematic

Today, there is a tendency for three primary strands for coach education: (1) federation based, (2) higher education based and (3) other recognized agencies (Duffy, 2008: 99). If federations and other agencies has been the first to promote these programs, we observe a tendency for major university approach linked with governmental recognition of systems. Mutual recognition of qualifications are being promoted in Europe and on the basis of AEHESIS project (Aligning a European Higher Educational Structure In Sport Science) developed since 2002, there are a working group constituted by ENSSEE (European Network of Sport Science, Education & Employment), European Coaching Council (ECC – a sub-committee of ENSSEE), ICCE (The International Council for Coach Education), European Olympic Committee and International Federations.

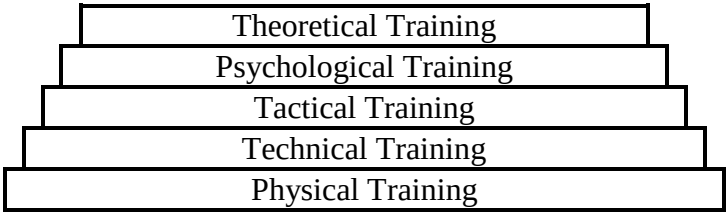


The Six-Step Model is the basis of a sample curriculum and is applied on an outline framework for developing coaching qualifications (Duffy, 2008: 94).

Methodology

From this framework, the skills (know-how) and the knowledge (know-what) of the learning outcomes are one of the developing parts of the process on a multidimensional approach (Figueiredo, 2009), that include integrative models even if more linked with bio-psycho dimensions without social integration such as Vey (2010). The modern biopsychosocial model was established by George Engel: "A biopsychosocial model is proposed that provides a blueprint for research, a framework for teaching, and a design for action in the real world of health care" (Engel, 1977). This model established the *biopsychosocial paradigm* validated and elaborated by the scientific discoveries of the past decade (Garland & Howard, 2009: 191) and even if it is more linked with wealth, the traditional and modern education targets are always connected with.

Based on the combat motricity actions as object of study and evolved on the micro intervention during exercising practice throw intentional process (training); based on an interfactorial, multifactorial or transfactorial analysis; linking human dimensions (bio-psycho-social) with training factors (Bompa, 1990; 1999) and task realization conditionings (Famose, 1990); a proposal of curriculum framework for learning outcomes of Coach Education will be presented on a exploratory perspective for discussion with specialists on the 2011 Scientific Congress on Martial Arts and Combat Sports.

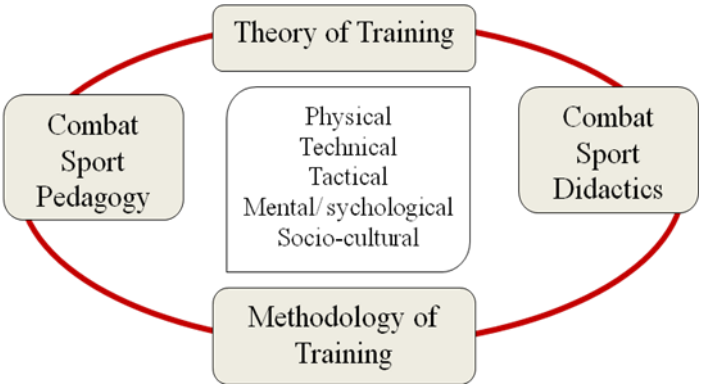


Training Factors – Figueiredo, 1996 – Based on Bompa, 1990

Conclusions

Based on tree basic referential domains (Pedagogy for coach-student communication, Didactics for teaching matter domain, and Training Methodology for multifactorial application on planning, organizing, conducting and evaluating) a five scientific areas (bio-physiological more linked with physical, bio-mechanical more linked with technical, bio-informational more linked with tactical, psycho-emotional more linked with mental and psychological, and socio-cultural more linked with social as better reference of theoretical training) are concluded as a multifactorial framework for learning outcomes of Coach Education curriculum development on Martial Arts and Combat Sports programs.

Curricular balance could be analyzed based on this domains and areas.



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JUDO OLYMPIC ATHLETES AND THEIR TRAINING ROUTINES

Introduction

Olympic Games (OG) are considered the most important competitive event in judo (Villamón et al., 2004). As consequence it is common that athletes spend a considerable amount of time preparing to this event (Franchini et al., 2011). However, it was not found any research reporting the training routine of these athletes. Thus, our objective was to identify the training routines performed by Olympic judo players during their preparation to the OG.

Methods

For this purpose, 57 (38 males, including 9 male medal winners, and 19 females) Brazilian Olympic judo athletes who participated in the OG from 1964 to 2008 answered a questionnaire concerning the main training tasks performed and aspects of relevance, concentration, pleasure and effort in each of them. For each item athletes attributed 1 (nothing at all) to 10 (extremely high) for each aspect during different training activities (e.g., *nage-komi*, *uchi-komi*, *randori*, *kumi-kata*, strength training, aerobic training, etc.), and daily routine (e.g., reading, recovering, sleeping, eating, etc.). This questionnaire was adapted from a research conducted with wrestlers (Hodges and Starkes, 1993). Proportions comparisons were done through Chi-Square and Fisher tests. Student t test was used to compare continuous data. Male and female comparison considered data from 1988 and medal winners (MW) and non medal winners'comparison (NMW) considered only males.

Results

These athletes dedicated 23±8 h.week^{-1} to training sessions, with no difference among groups. The main differences found were: a higher proportion (78%) of MW were studying during their preparation compared to NMW (41%); MW reported more relevance (9.7±0.5) and concentration (9.7±0.4) during *nage-komi* compared to NMW (8.8±1.2 and 8.7±1.3, respectively); they also dedicated more time to *kumi-kata* (16±8 min.session^{-1}) than NMW (10±6min.session^{-1}); females started to practice (9.5±3.9 years-old), and started to compete (11.1±3.9 years-old) later than males (6.5±2.5 and 8.5±2.5 years-old, respectively); in general females reported more relevance and concentration during *uchi-komi* and *nage-komi* than males.

Discussion

For males a perception of higher relevance and concentration during *nage-komi* and a longer time dedicated to *kumi-kata* seem to be important factors

concerning Olympic preparation. This aspect seems to be related to the fact that *nage-komi* simulates the action performed to score during standing combat, and most of the time during standing combat is spent in *kumi-kata* (Marcon et al., 2010). Additionally, female athletes seem to perceive differently the training tasks compared to male athletes as they attributed higher values during many activities, although no female athlete in this sample was medal winner.

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TECHNICAL AND TACTICAL RELATIONS IN COMBAT SPORTS TEACHING: IMPLICATIONS IN SPORTIVE INITIATION

Key-words: Combat sports, teaching methods, tactic, technique

For many years the technician model has supported teaching methods in different sports modalities (Scaglia, 2003). In combat sports, the eastern and western teaching methods expressed millenary traditions of combat. Many coaches, teachers and senseis have utilized learning through exhaustive repetition with the goal of technical perfection. However, these pedagogical procedures emphasize only the improvement of motor skills disregarding the tactic and its complexes interactions with technique (Bayer, 1994; Garganta, 2000, Graça, Mesquita, 2002; Gomes, 2008; Molina, Villamón, 2010). This article seeks to discuss the importance of technique and tactic in the initiation of combat sports and its implications in a teaching method. This is a qualitative study that has used the enunciation analysis, one of the contend´s analysis techniques (Bardin, 1977) for the treatment and interpretation of the collected data. We conducted semi-structured interviews with four physical education teachers and masters of Judo, Jiu Jitsu, Taekwondo, Karate, kendo and fencing. We noted that the sportive initiation in these combat sports, according to the subjects, is different from children to adults. For the first, the approach is based in a playful process that does not emphasize the perfect execution of the techniques, even though they are taught. Some subjects relate that for children, the learning can be based on the "reasons and whys" of doing (Graça, 1995) considering necessary to combat to learn how to combat (Terrisse, 1991). However, when discussing the initiation of adults/adolescents, the majority of the subjects keep the traditionalism of the combat sports teaching methods (warming, reproduction of specific techniques, combat in the end). The data analysis demonstrates that although there is a concern of some subjects in dividing the students according to their age, there is a technical predominance, regardless of personages, activity and teachers. Those who report playful progressions, believe this activities are not part of the serious contend of the class, underestimating the fun and learning that the game (opposition relationship) provides (Terrisse, 1991; Scaglia, 2006). Although their using of the tactical orientation, the importance conferred to the technique out of combat situations is predominant in their classes. We noticed contradictory speeches in relation to technique and tactic, because when questioned about their teaching approaches, these subjects emphasize the tactical issues, however, when describing their didactical procedures, they seem to focus on the gesture

reproduction according to traditional role models. In order to clarify these contradictions is necessary to record and analyze these teachers' practice.

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INFLUENCE OF ENVIRONMENTAL FACTORS IN TOP-LEVEL COMPETITION IN TAEKWONDO COMBAT

This paper is part of the research project Technological and methodological advances in the automation of observational studies in sport, funded by the Directorate-General for Research, Ministry of Science and Innovation (PSI2008-01179), 2008-2011.

Key-words: Combat, taekwondo, competition, observation, tactics.

Environmental pressure is the phenomenon produced during combat by the influence of the 'space', 'time' and 'score' factors which affect the effectiveness of the moves made. Its influence on their effectiveness has been demonstrated in fencing (Iglesias X et al. 2011), but not in other combat sports. The aim of this paper is to evaluate the influence of environmental pressure during competitive situations in top-level male taekwondo combat.

We studied 4796 tactical actions performed during 48 fights, one for each of the eight weight categories, in six World Championships or World Cups from 2000 to 2007. A total of 96 top-level participants from 29 countries underwent systematic, non-participant observation which applied an idiographic, and multidimensional approach. The observation tool was based on the analysis of action effectiveness, the area where they were made, the time remaining until the end of the fight, and the difference in the current score. We created an *ad hoc* record tool (Drewtina 23) based on *Microsoft Access 2003* using the NET programming language. Construct validity was determined by the conceptual consistency and solidity extracted from the theoretical framework and from consultation with taekwondo specialists. Reliability was determined using inter- and intra-observer analysis in seven fights (Kappa = 0.99 and 0.98). As for the analysis of the 'area available' factor, there were no significant differences in the effectiveness of tactical actions with regard to the section of the competition area involved (Table 1).

Table 1: Effectiveness with regard to competition area (non-statistically significant values).

Competition area	No		Yes		Total	
	n	%	n	%	n	%
Competition	2415	84,47	444	15,53	2859	100
Safety	210	85,37	36	14,63	246	100
Total	2625	84,54	480	15,46	3105	100

The 'time remaining' factor involved two different evaluations. The distribution of tactical moves and their effectiveness in the rounds had no statistical significance, as values were similar for all three rounds, with an effectiveness ranging between 15% and 15.6%. The number of moves tended to increase in the final rounds: 30.8 actions per fight in the first round (19 attacks), 32.3 in the second round (20 attacks) and 40.1 in the third round (25 attacks). Finally, the difference in the current score variable was significant because of its influence on the effectiveness of the moves: when a competitor was losing by more than one point (n=785), 10.7% of the moves were effective; if he was winning by more than one point (n=582), 15.9% were effective; finally, when there was a tie or a difference of one point (n=1738), their effectiveness rose to 17.43%. We conclude that in taekwondo environmental pressure does not have as direct an influence as in other combat sports such as fencing.

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TACTICAL MOVES IN TOP-LEVEL COMPETITION TAEKWONDO COMBAT: A DESCRIPTIVE STUDY

This paper is part of the research project *Technological and methodological advances in the automation of observational studies in sport*, funded by the Directorate-General for Research, Ministry of Science and Innovation (PSI2008-01179), 2008-2011.

Key-words: Combat, taekwondo, competition, observation, tactics.

Observational analysis is one of the main support tools for trainers in contact sports today. The aim of this paper is to characterize moves in top-level taekwondo combat. To do so, we selected six Championships and World Cups held between the year 2000, when taekwondo acquired Olympic status, and 2007.

We studied 48 fights between male competitors (a total of 96 appearances) from 29 countries. All fights were finals in all the eight weight categories of the sport. The competitors performed a total of 4796 tactical moves. We used systematic, non-participant observational methodology, applying a follow-up, idiographic and multidimensional approach. The observation tool was based on the structure of tactical moves in top-level taekwondo competition presented by González et al. (2011). We created an *ad hoc* recording tool (Drewtina 23) based on *Microsoft Access 2003* using .NET programming language. The construct validity was determined by conceptual consistency and solidity extracted from the theoretical framework and from consultation with taekwondo specialists. Reliability was determined using inter- and intra-observer analysis in seven fights (Kappa = 0.99 and 0.98).

Below we present descriptive results on the moves performed:

The density of tactical moves per minute of combat ranged between 11.1 (Tokyo, 2002) and 16.7 (Beijing, 2007). The weight category in which most moves were performed was lightweight (67-72 kg: 14.05%) of the total while flyweight (54-58 kg) had the fewest (11.41%). As for the distribution of tactical moves in the three rounds of the bout, most were performed in the third round (37.75% rounds 180 seconds and 41.13% rounds 120 seconds), followed by the second round (31.91% rounds 180 seconds and 29.74% rounds 120 seconds), and the first round (30.33% rounds 180 seconds and 28.66% rounds 120

seconds), and 0.14% of the actions were performed in sudden death round. Of the total of combat moves, 3.35% were penalties and 96.65% tactical moves. Offensives accounted for 78.81%, of which 14.06% were independent feints, whereas there were far fewer defensive moves (21.19%). Falling to the ground and crossing the safety boundary line were the most common penalties (21.08% in both cases), followed by not fighting (19.28%) and grabbing the opponent (15.66%). Kyong-go was the most common penalty (n=165: 99.4%); there was only a single occurrence of gam-jeom. Among the 166 penalty moves, points were deducted in 59 (1kyongo=0.5 points, 59x2=118kyongos) cases and not in the other 48. Of the 1,016 defensive moves, 41.58% were dodges, while 58.42% were confrontations, of which 42.83% were blocks and 57.17% cuts. The most frequent initial technical move performed was bandal (n=2382: 76.71%) followed by miro (n=297: 9.57%), tuit (n=157: 5.06%), dollio (n=98: 3.16%) and neryo (n=84: 2.71%). The remaining technical moves all scored below 1%.

We conclude that systematic observational analysis is a useful tool in taekwondo training. Taekwondo trainers can optimize their techniques on the basis of their observation of top-level competition.

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VERNACULAR MARTIAL ARTS

Martial arts, according to most definitions, are systems blending physical components of combat with strategy, philosophy, tradition, or other features beyond pure physical reaction. While a technique, or a random accumulation of them, employed idiosyncratically might be deemed one's style or "bag of tricks," these would not be considered a martial art under the criteria listed above.

Modern attempts to restrict the term "martial arts" often draw on the model of the Japanese arts, particularly as the arts developed in the later years of the Meiji era. The model gained widespread acceptance with the modernization of Japan and the subsequent exportation of Japanese martial culture.

In the 20th century, centralized, bureaucratic governing structures were created for these arts and others followed suit. Ranks and consistent testing policies became standard. Throughout the 20th century and into the 21st century many martial arts developed into combat sports and sought to enter the international arena. However, in cases in which martial practices evolve in restricted environments or in which the "arts" are coupled to a local cultural tradition, efforts at globalization and standardization are problematic.

Similar lack of fit exists between standard forms and localized forms in the fields of language and art criticism. The term "vernacular" as used in linguistics denotes a local language, dialect, or non-standard version of a language and in art criticism as creations of people who are detached from the movements and trends of fine art. Applied to the martial, "vernacular" denotes local traditions that meet the needs of those groups in which they are preserved rather than being subject to an outside sanctioning body.

Vernacular martial arts (VMAs) share the following characteristics. There is no structured curriculum. Knowledge is passed along in a casual fashion rather than as a progression from basic to more complex techniques. When knowledge is shown, this will most often take the form of an interaction during which a more experienced fighter demonstrates specific tactics to a favored novice. At least as frequently, knowledge is acquired through observation as distinct from formal instruction. The informal methods of instruction and training coupled with an absence of centralized authority result in there being no curriculum, by strict definition of the term, for VMAs. This makes for considerable latitude in both the individual practitioner's repertoire and across the inventory of techniques. Thus, bricolage is expected in VMAs. In these ways, vernacular arts differ from traditional arts. Observed techniques and related kinesic skills are honed in culturally appropriate contexts, which commonly include games, dances, and festivals. These related movement forms tend to be restrained enough to prevent fatalities, but the skills that are developed may be used to lethal effect outside the play world.

VMAs commonly use “weapons of opportunity,” most often tools connected to the livelihood of the group. Thus, pastoralists such as the Mursi of Ethiopia and the Nguni of Southern Africa fight with sticks, the primary tools used for herding, while Michigan loggers use their “caulked” (spiked) boots, and their Finnish American counterparts use their indigenous pukko knives held in a horizontal “icepick grip” in vernacular fashion. Finally, although VMAs may have implicit rules, these are negotiated among participants at the local level rather than being legislated by governing bodies operating within a bureaucratic structure

These principles govern historical forms of “street-fighting” such as the earliest documented forms of Brazilian capoeira, the unarmed dueling practices called “rough and tumble” that developed in the Southeastern U.S. during the 18^{th}-19^{th} centuries, contemporary African-American “jailhouse rock,” and related VMAs.

As a result, the survival of any given VMA relies to a far greater extent on oral transmission, cultural tradition, and individual initiative than do more formalized martial arts.

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THE MASTER AND APPRENTICE APPROACH EDUCATION IN CHINESE VERNACULAR MARTIAL ARTS

Master and Apprentice apporach education is an important form of human education, and it is common phonomenon of eastern and western civilization. The famous German philosopher of existentialism, Karl Theodor Jaspers, thought Master and Apprentice apporach education was the activities that in which human spirits was to fit and culture to transmit. This kind of education mode continues until today form its formation area “The Axial Period”.

Chinese Vernacular Martial Arts is transmitted by master and apprentice apporach education for thousands of years. In the process of this kind education mode, individual can gain skills progress, character formatiom, group identity and moral ascension, and martial arts groups can achieve purpose that is group cohesion, expand the impact and social recognition.

Since mordern school education entered into China, Master and Apprentice apporach education began to flatten out. But its democratic ideals, practice mental and moral character should cause the attention of all of the world. Today, the world martial arts and combat sports are coming to multiplex interchange and integration, and ultimate grapple matches are more and more reflecting its elimimate culture sides. But, no matter what kind of martial arts, it should not breaking away from the orbit of education. So, I wish the Master and Apprentice apporach education of Chinese vernacular martial arts has some inspirations to the development of the world martial arts.

Firstly, Master and Apprentice apporach education reflects democratic ideals. Chinese vernacular martial arts group is a kind of simulation home, master and apprentice just like father and son, but the role between master and apprentice is exchangeable. In this group, people give other a respect and will get a respect, the respect to my master will make me respected by my apprentices in certain time. So, the group of vernacular martial arts is an interactive action community. In this group, individual through the value of their for others to form and reveal. In interactive action, individual inherited and internalized colony of traditional culture and through improving the habit and the individuality to serve themselves and groups.

Secondly, Master and Apprentice apporach education contains practice spirit. Chinese vernacular martial arts based on the background of agricultrual socitey, and it is intergrated into people’s daily life. In countrysides of north China, boxing spots are villagers’ public spaces. In here, through martial arts trainning and displaying (just like “Liangquang” of Plum Blossom Boxing), they obtain physical and mental entertainment, identity, condensed feeling, security and the sense of worth.

Thirdly, Master and Apprentice apporach education has moral character. Chinese vernacular martial arts emphasis on moral is always more than skill. It

pays attention to the cultivation of moral and personality of martial arts player. This kind of education hightlights that martial arts trainning is connected with mental and physical ajustment, moral perfect, and social harmony.

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BIBLIOMETRIC ANALYSIS OF THE SCIENTIFIC PRODUCTION ON MARTIAL ARTS AND COMBAT SPORT ARTICLES IN THE WEB OF SCIENCE DATABASES (SCI-EXPANDED, SSCI, A&HCI) (2000-2009)

Objectives

The aim of this study is to present the state of the art of the scientific research on martial arts and combat sports (MA&CS), published in the form of articles in three of the Web of Science databases for the period 2000-2009.

Methodology

The sample was composed of MA&CS articles indexed in Science Citation Index Expanded (SCI-EXPANDED), Social Science Citation Index (SSCI) and Arts & Humanities Citation Index (A&HCI) databases. Inclusion criteria were: a) indexed as *article* or *review* in *document type* field; b) published in the period 2000-2009; c) referring to MA&CS in general or any sport, style or materialization of MA&CS without considering if their aim was competitive, utilitarian, hygienic, artistic, etc. (sports such as modern archery, and firearms-based MA were not included); and d) specifically focused on MA&CS though those which did not focus specifically on MA&CS but contained MA&CS in sampling procedures, results or interventions were also included.

A 278 MA&CS related term list was created for data collection. *Topic* field was used for the searches. Due to polysemy or the metaphoric use of some terms (e.g. wrestling, boxing, sumo) it was necessary to refine search results individually. These results were exported to a reference management software (EndNote X3). Bibliometric analysis included: a) MA&CS studied; b) evolution throughout time; c) journals and journals' academic subjects; d) languages; e) authors, institutions and countries; and f) grants and funding agencies. Specific categories were created in the reference management software for a). For b) to f) analyses we used databases' *Analyze results* tool. A descriptive statistical analysis of these aspects was performed, based on absolute and relative frequencies.

Results and discussion

The total number of MA&CS articles was 1527. Out of the 38 MA&CS categories, tai chi, judo and boxing included over 200 references whereas wrestling, qigong and "generic" (MA&CS in general) over 100. Twenty categories contained less than 10 references. Between 2000 and 2009 there have been a steady growth of MA&CS indexed articles, ranging from 80 in 2000 to 283 in 2009.

The total number of subject areas publishing MA&CS articles is 148. As expected, Sport Sciences accumulate the vast amount of these articles (42.11%), followed by Orthopedics (6.75%), Medicine, General & Internal

(5.83%) and Integrative & Complementary Medicine (5,50%). 106 subject areas don't reach 10 references. 583 journals published articles on MA&CS, led *Archives of Budo*, *British Journal of Sport Medicine* and *Journal Of Sports Science And Medicine* with 67, 56 and 49 references respectively. 557 journals (95.5%) published fewer than 10 articles.

Regarding languages, English prevails absolutely (91.6%), followed by 12 other languages, all of them with less than 3%. 4046 authors, 1577 institutions and 62 countries/territories were recorded. The USA accumulates more than one third of the production, followed by Japan (7.20%), England (6.81%) and France (5.63%). Authors from 30 countries/territories published fewer than 10 articles. Finally, 96.2% and 92.2 of the articles don't specify any grant number or funding agency for their research.

The discussion centers on the different factors affecting these results, taking into consideration the development of the MA&CS and the MA&CS research field as well as the development of the Web of Science databases. Some methodological difficulties regarding data collection and categorization are also discussed.

Conclusions

In the perspective of the analyzed Web of Science databases, MA&CS research field is growing strongly at an international level, as shown by the evolution of articles per year and researchers and institutions involved in this field. There are big differences in the research of certain MA&CS or others, countries/territories and languages, revealing the dominance of the scientific production by the USA.

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PRAXEOLOGICAL ANALYSIS OF THE FIRST SPORTING REGULATIONS OF CAPOEIRA (1973)

Key-words: Capoeira; Praxeological analysis; Sporting regulations; Brazil.

The first sporting regulations of Capoeira, which were called *Technical Regulations of Capoeira*, were the result of a series of changes in Brazil related to the political, penal, and sports contexts, as well as to Capoeira in particular: authorisation and registration (1937) of the *Physical Education Course* given by Master Bimba in his *school* or *gym*; creation of the *Sports Centre of Angola Capoeira*, owned by Master Pastinha; decriminalisation of Capoeira, as a result of it not being included or mentioned in the new text of the Brazilian Penal Code (1941); and creation of the National Council of Sports (1941), all these events being landmarks in the sportisation process of Capoeira. In 1962, *Capoeiragem* and Jujutsu were included in the Brazilian Confederation of Pugilism (CBP) as pre-sport activities, i.e., activities on the verge of regulation. Intending to provide Capoeira with clear rules, the Carioca Federation of Capoeira (Rio de Janeiro) organised two symposiums (in 1968 and 1969), but they only resulted in the *Draft of the Regulations of Capoeira*. The first sporting regulations of this discipline were only created in the end of 1972, and in the following year they were made official and released. The present work sought to analyse, interpret and characterise the first rules of Capoeira competitions, and its importance is justified by the absence of any other work related to this subject. The research process was based on the ethnographic methodology and consisted of the search and indexing of primary written sources (including the regulations) from the 19th and 20th centuries, and content analysis of the indexed sources by means of categories established both *a priori* and *a posteriori*. Motor Praxeology is the theoretical basis upon which the content analysis of the first regulations of Capoeira is carried out. The idea of the existence of an internal logic (relationship of the participants with themselves and with the place, time and material, if there is any) and an external one (characteristics related to history, culture, gender, age, among others) to any motor practice allows us to clearly distinguish in the aforementioned document the aspects associated with Capoeira as a sporting fight (e.g., legal and illegal strikes) from the non-fight-related aspects (e.g., protocols for competition organisation and ritual characteristics of the discipline). Our conclusion is that the lack of knowledge on the concept of sports and the idiosyncrasy of Capoeira practitioners from the main Capoeira schools (Bahia and Rio de Janeiro), which were already clear in the symposiums intended to establish the regulations of the Brazilian fight, has had an indelible impact on the regulation process of Capoeira. The fact that the document under analysis contains ten chapters dedicated to the internal logic of Capoeira and thirty-two to its external logic reveals it was not really committed to

systematising Capoeira as a fighting sport, but instead was concerned about supporting the then-prevailing views on Capoeira and consequently guarantee the power of the ruling body at that time, the Special Department for Capoeira (CBP).

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IMPORTANCE OF SUBMISSION SPORTS (BJJ AND GRAPPLING) IN MARTIAL ARTS

Introduction

On the 12th of November of 1993, at the Mc Nichols Sports Arena (Denver, Colorado-USA), the first MMA (Mixed Martial Arts) event was celebrated, heir to Valetudo competitions held in Brazil. It was called: The Ultimate Fighting Championship (UFC 1) and included eight fighters representing different martial arts such as Thai Boxing, Wrestling, Karate, among others. No weight limits were imposed. The fights rounds were 5 minutes long and there was no overall time limit. Competitors could only win by submission, knockout, or throwing in the towel, with a $ 50,000 prize for the winner. This tournament was won by a Brazilian Jiu-Jitsu (BJJ) competitor, who defeated all his opponents without giving or receiving any punch. Therefore, any fighter was injured. The wide dissemination of this tournament, in addition to the spectacular fighting style performed by Royce Gracie (Tournament Champion), made BJJ spread quickly causing an exponential increase in the number of people practising this martial art.

What are submission sports? BJJ and Grappling

BJJ is a martial art that can be included within the category of "combat sports of submission". These are fighting sports that do not include striking, having as a clear purpose to submit the contrary, making the opponent to surrender by applying grappling techniques as strangulation or dislocation. The BJJ is practiced wearing a kimono similar to that used in judo, but tighter to the body. The other submission sport, grappling, pursues the same objectives as BBJ but it is practised without kimono.

The expansion of the sports of submission

In this report we want to demonstrate the relevance that BJJ and Grappling have obtained into the field of martial arts and combat sports in general. Our study will rely on two important facts:

Grappling advance in the Spanish Olympic Wrestling Federation and Associated Disciplines (FELODA; in Spanish, Federación de Luchas Olímpicas y Disciplinas Asociadas). Nowadays, Grappling is the combat sport that grows faster. This can be clearly seen comparing the number of participants in the four competition disciplines within the FELODA (Grappling, Sambo, Freestyle and Greco-Roman Wrestling), in the Senior Men's Championships in Spain during 2009 and 2010. Analysing these data, while Freestyle, Greco-Roman wrestling and Sambo roughly showed a constant number of competitors, Grappling experimented a dramatic increase from 49 to 86. This made Grappling, together

with Freestyle Wrestling, the fighting sport with more competitors in the Senior Men category.

The BJJ revolution in the Arab world. Abu Dhabi is a tremendously rich Arab country which invests its oil money in projects to become a world reference in the 21th century. Abu Dhabi sport counts with a F1 Grand Prix, an International Golf Championship and the Mubadala Tennis World Championship, which attracts the best players in the world. The United Arab Emirates Sheikh, Mohammad Bin Zayed Al Nahyan, in his commitment for long-term investments, after learning of BJJ virtues he decided to adopt this martial art as compulsory subject in all Abu Dhabi schools. This program began in 2008 with 12 teachers and 3600 students who received classes of 50 minutes, 2 days a week. Currently, during the academic year 2010/2011, the program has 81 teachers and 13000 Jiu-jitsu students between 9 and 13 year old. The implementation of BJJ, covering a total of 500 schools, is expected for 2015. Furthermore, women were included into this program, which represented a cultural turnover of the known repression that women suffer in the Arab world, helping their integration into society.

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IDENTIFICATION OF THE SOCIAL CHARACTERISTICS OF CAPOEIRA FIGHT PRACTITIONERS IN THE CITIES OF COIMBRA AND AVEIRO

Key-words: Capoeira; Social characteristics; Portugal.

After the consolidation of all its variants in Brazilian society, Capoeira started to spread to all continents in the 1970's. Nevertheless, whilst that unrestrained and unsystematic diffusion took place, based mostly on the economic and financial interests of Capoeira masters and instructors, respectively, there were few concerns about addressing the needs and interests of Capoeira practitioners. Furthermore, there was a clear lack of information regarding the characteristics of Capoeira groups, whether suggested by teachers/practitioners or even by specialists in the field. Considering that gap at both national and international levels, we carried out an exploratory study to identify the social characteristics related to Capoeira practitioners from Mainland Portugal. Taking into account the exploratory nature of this study and the fact that Capoeira is spread across all regions in Portugal and in a considerable number of Portuguese urban centres, we limited our analysis to three groups of Capoeira practitioners from the cities of Aveiro and Coimbra, the total sample consisting of 37 individuals of both sexes. Based on elements implicit in the ethnographic methodology and found in the literature, we prepared a questionnaire with 38 questions, 19 of them being open questions, and 19, closed ones. Having administered the questionnaire to the groups, we carried out a categorical analysis of their content using descriptive statistics techniques along with the "Statistical Package for Social Sciences" software, version 16.0 for Windows 2007. The most noticeable results were: the balance between practitioners of both sexes from the two cities under consideration, the evidence of a high education level, and the low number of children practising Capoeira.

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THE EFFECTS OF DETRAINING AND TRAINING ON AN ELITE JUDOKA AFTER PREGNANCY

Introduction

Maternity is generally the most important stage in a woman's life, however some women decide to delay having children. There are multiple reasons for that and high-competition is one of them. For many female elite athletes, maternity could mean the end of their sports career, not because athlete's and mother's roles cannot be compatible, but especially because they have to stop competing for a while. Meanwhile, some elite female athletes have returned to competition after pregnancy and they have reached excellent results.In this case study we analyze an elite judoka that interrupted her sports career after she found out she was pregnant and she has returned to competition 10 month after giving birth. This investigation tries to verify the effects of detraining and training on this female judoka, comparing the results of body composition, maximum and power strength and cardiorespiratory evaluations observe in three different moments.According to Earle et al. (2004) extended detraining (more than 32 weeks) did result in significant decreases in muscle strength and cardiorespiratory power. Physical fitness and anthropometrical characteristics consist fundamental parameters for high performance in judo elite competition (Thomas et al., 1989, as cited in Karagounis et al. 2009). It's important to point out that this athlete didn't practice Judo or any physical activity during pregnancy. She started her training routines gradually without compromising her health and the breastfeeding period; however, her aim was to reach her previous performance and to compete in high-level competitions.

Objectives

The purpose of this investigation is to find out the effects of detraining on an elite judoka after pregnancy and the effects of training verified after the first period of sports preparation. In this first phase the aim of the subject is to qualify for the European Senior Championships 2011, trying to reach her previous performance and to compete in high-level competitions. This study analyzes and compares morphological and physiological adaptations: body composition changes, aerobic power (VO_{2max}) and upper and lower body strength (power and maximum) in three different periods: training before pregnancy (1st moment); detraining caused by pregnancy (2nd moment) and resumption of training and competition (3rd moment).

Methods

The subject was a 29 year-old female judo athlete (20 years of judo practice) and an elite judoka that represents the Portuguese national team in light weight category (-48 kg). The subject interrupted her sports activity in 2009 after European Championships due to pregnancy, and she returned training and

competing in 2010. The subject was evaluated in three different moments: before pregnancy, 2 months and 12 months after giving birth. Body composition, aerobic power, upper and lower body strength were evaluated in these different moments. To measure body composition we used Dual Energy X-ray Absorptiometry (DEXA scan) to analyze fat, lean and bone mineral content. All scans and analyses were carried out by trained technician. An incremental treadmill test to exhaustion was used to evaluate aerobic power (VO2max). Before pregnancy a protocol Pro 1min/1Km was used on a HP Cosmos Coscom 1.3 treadmill for testing the subject. After pregnancy the test was performed on a COSMED treadmill following a similar protocol (Judo F). The test started with 6 km.h-1 and increased 1 km.h-1 every 1minutes until failure. The test was monitored by professionals. Upper-body strength was tested on a freeweight bench press exercise, increasing the load until the subject reaches the maximum dynamic force (MDF). Isocontrol – Dynamic 5.1 Software was used to collect data. The athlete performed Counter Movement Jumps (CMJ) on a force platform to test lower-body strength. Isonet 500 software was used to collect data.

Results

The effects of detraining (2nd moment) were verified in all tests performed. The athlete decreased her maximum and power strength on bench press after detraining, however we verify a substantial increasing after training (3rd moment).

Table I – Experimental Approach

Moment		Date	Classification	Observations
1st	Before pregnancy	2008	3rd place European Senior Championship 2008	High performance – Training Period
2nd	2months postpartum	18-02-2010	**-**	Detraining Period
3rd	12 months postpartum	13-12-2010	1st place World Cup Prague (February 2011)	Training Period First period of sports preparation The subjects is qualified for the European and World Championships 2011

The last cardiorespiratory evaluation (3rd moment) indicates that VO2max has increased substantially compared with all tests done before. However that test indicates a decreasing in the respiratory quotient parameter. Maximum strength has been improved in the last evaluation (3rd moment), however power strength still remained lower as 2nd moment. According to acceleration and execution speed, we verified that she improved with low loads, but she has still remained slow with high loads. The athlete also improved in CMJ test.

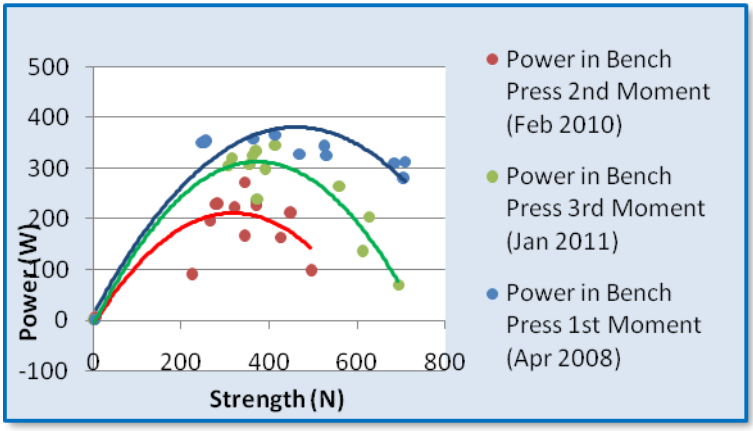

Figure 1. Power - Strength Curve

Table II – Changes on Body Composition

	April 4, 2008	February 18, 2010	Difference %	December 14, 2010	Difference %
Body Weight (gr)	48908.6	59048.3	+ 20,7 %	52708.6	- 10,7 %
Fat (%)	19.7	31.5	+ 11,8 %	18.4	- 13,1 %
BMC (gr)	1955.36	2033.26	+ 4 %	1975.12	- 2,9 %
Fat Mass (gr)	9613.6	18616.9	+ 93,7 %	9677.7	- 52 %
Lean Mass (gr)	37339.7	38398.1	+ 2, 8%	41055.8	+ 7 %

The body composition measurements show us a great reduction of fat mass and an increasing of lean mass.

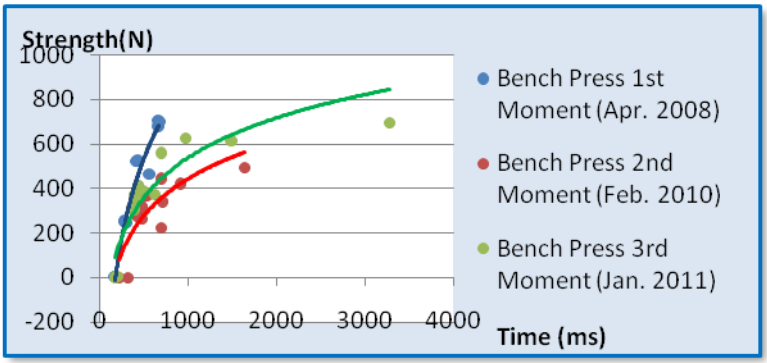

Figure 2. Strength - Time Curve

Table III – Physiological measurements

	March10, 2006		February 22, 2010		December 13, 2010	
Metabolic Response	Max		Max		Max	
VO_2 (ml/Kg/min)	2381		2220		2793	
VO_2/kg (ml/kg/min)	44.93		37.9		51.83	
Respiratory Quotient RQ	1.2		1.18		1.15	
Cardiovascular Response	Max		Max		Max	
Heart Rate – HR (bpm)	193		189		193	
Ventilatory Threshold	**Value**	**% VO2max**	**Value**	**% VO2max**	**Value**	**% VO2max**
VO_2/kg (ml/kg/min)	33.3	74.10	21.9	57.7	27.62	53.3

Conclusions

These results indicate that well-trained athletes can reach high-performance after pregnancy, despite morphological and physiological adaptations caused by detraining. In all tests performed (Body composition, VO2max, upper body strength and lower body strength) this elite judoka has reached similar or better physical condition, comparing results obtained before and after pregnancy. This judoka has decreased substantially her body fat (18.4%). According to Callister et al. (1990) as cited in Garcia & Luque (2007) elite judokas has approximately 15% fat mass. After returning to judo practice the subject increased her VO2max (51.83) and as cited in Garcia & Luque (2007) elite judokas have a VO2max between 50-52 ml/kg/min. However, it is important to understand basic physiological and morphological changes associated with pregnancy and postpartum period to not compromise women's health. According to Artal & O'Toole (2003) competitive athletes are likely to encounter the same limitations as faced by recreational athletes during pregnancy. Fifteen months after giving birth, this elite athlete has already won a gold medal in a world cup 2011 (first in her career) and the qualification for European and World Championships 2011.

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TEACHING SELF-REGULATION THROUGH MARTIAL ARTS

Key-words: Martial arts ; self-regulation ; teaching ; self control

The aim of this paper is to demonstrate the positive influence that teaching martial arts in schools can have on pupils' self-regulation and social integration. If the traditional way of teaching martial arts appears to be particularly efficient for large numbers of children of school-going age, it is because this physical activity fosters self-possession and the conviction that success comes from dedicated efforts. The philosophy of martial arts is about determination and application rather than "innate" skills, which makes them particularly appealing and approachable for children who are not normally keen on competitive sport practices, and for those who do not think of themselves as "athletic". Martial arts practitioners receive constant feed-back on their progression, telling them both on what skills they need to cultivate and what others are already improving. Eventually, through the use of mediating and self-evaluating techniques, instructors enhance pupils' self-awareness and sense of responsibility, enabling them to form better thoughts and behaviours. Through martial arts traditional training, self-regulation is increased and put to practice, effectively transmitted and strengthened. I will start with a re-definition of martial arts as "arts of self-control", before enlarging on the theories of self-regulation. Finally, I will build on a number of experiment-based researches to show how the didactics of martial arts allow school boys and girl to improve their self-regulation skills, making them better able to learn, channel their emotions and deal with others.

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COMBAT SPORTS AND DETERMINANTS OF SPORT ENGAGEMENT IN PORTUGUESE ATHLETES

Key-words: Athlete's engagement, Sports emotion, Portuguese athletes.

Introduction

Athlete engagement is described as a persistent, positive, cognitive-affective, experience in sport that is characterized by confidence, dedication, vigor and enthusiasm where confidence represents a belief in one's ability to attain a high level of performance and achieve desired goals, dedication is the desire to invest effort and time towards achieving goals one view as important, vigor a physical, mental, and emotional energy or liveliness and enthusiasm is characterized by feelings of excitement and high levels of enjoyment (Lonsdale, C., K. Hodge, et al., 2007a). The purpose of this study was to investigate the sport engagement levels in Combat Sports and compare them to different sports types, considering athlete's gender, age, academic and competitive level.

Methods

Three hundred fifty seven Portuguese athletes (79,6% man and 20,4% woman) participated in the study. The mean age of the participants was 20,3 years. Forty one were professional, 71 semiprofessional and 245 amateurs. We used the Portuguese version of Athlete Engagement Questionnaire (Lonsdale, C. et al., 2007b). We described data using descriptive statistics and compared the groups using the Anova two-way, with software SPSS 17.0

Post-hoc analyses for scale differences were carried out with Tukey's post hoc multiple comparisons.

Results and Conclusions

Considering athletes gender, we found no significant differences in athlete's engagement except in one factor confidence. The results revealed that men present higher confidence levels ($F2,383 = 3.88$; $p = 0.033$). Significant differences were, also, found in engagement when age is considered. The youngest athletes revealed higher levels of dedication ($F2, 383 = 4.36$; $p = 0.001$). Nevertheless, the oldest group revealed higher vigor ($F2, 383 = 4.31$; $p = 0.001$) and enthusiasm ($F2, 383 = 4.74$; $p = 0.001$).

Finally, the results showed that athletes with higher competitive level presented greater engagement in all factors ($F2.383 = 4.53$; $p = 0.001$).

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A COMPARISON OF EFFORT AND PAUSE IN JUDO MATCHES

The aim of this study was to compare effort/pause required during judo matches performed by male athletes from different levels (Regional and State), age classes (13-14 yrs.; 15-16 yrs.; 17-19 yrs., and >20 yrs.) in seven weight categories. Thus, three regional and one state championship were taped and analyzed with FRAMI software (Miarka, Calmet & Franchini, 2008). ANOVA Three-way and the Tukey Test were conducted, using *p<0.05* as significance level. Table 1 shows results by mean ± SD of time (seconds), separated by groups.

Table 1: Effort and pause time (seconds) of each match segment in different age groups, weight categories, and tournament level.

Categories	13-14 [a]			15-16 [a]			17-19 [a, b]			> 20 [a, b]		
	N	effort	pause	N	effort	pause	N	effort	pause	N	Effort	pause
Regional Level*												
Extra-lightweight	22	20±6	6±2	24	16±4	4±2	46	20±5	8±2	24	23±5	9±5
Half-lightweight	18	20±7	6±2	28	22±5	7±2	85	20±7	8±4	50	22±10	8±9
Lightweight	28	21±8	7±4	65	16±4	7±2	58	21±7	7±3	40	21±5	6±3
Half-middleweight	26	21±5	7±3	12	18±8	6±3	48	27±7	5±1	48	21±6	6±2
Middleweight	26	20±7	7±2	14	17±8	7±4	42	22±10	6±3	10	23±9	7±2
Half-heavyweight	8	26±3	10±1	14	21±8	6±1	6	16±5	5±2	28	24±11	8±4
Heavyweight	30	17±9	5±0	6	18±4	5±1	2	39±22	6±2	36	28±15	7±2
State Level												
Extra-lightweight	22	17±4	9±10	16	13±4	8±6	32	23±6	7±2	33	24±12	7±4
Half-lightweight	17	18±5	6±3	20	16±7	7±3	40	26±12	9±6	50	24±6	6±2
Lightweight	22	19±5	8±7	20	17±4	6±2	28	23±8	7±3	44	27±20	12±13
Half-middleweight	28	20±9	6±2	30	14±4	6±2	24	23±8	9±7	46	24±8	9±6

Middleweight	2	23±6	6±3	20	9±6	6±0	22	21±6	8±4	42	23±7	9±5
Half-heavyweight	38	23±8	16±11	22	16±4	5±2	18	22±7	8±5	28	33±16	7±3
Heavyweight [c]	28	19±2	6±3	8	16±6	5±1	5	31±22	8±1	39	31±15	9±3

N= number of observations. Data expressed as mean and standard deviation of each effort or pause segment; [a] different from other age groups in effort time ($p < 0.05$). * Different from State level in pause time ($p < 0.05$); [b] different from 15-16 yrs for pause time ($p < 0.05$); [c] different from other weight categories in pause time ($p < 0.05$).

In the present investigation, all analyzed groups obtained between five and nine segments of effort/pause phases and no significant difference were found between groups. These data support Castarlenas & Planas (1997), who verified that judo matches usually present eight standing work sequences with 18 ± 8 s, and seven pause sequences with 12 ± 4 s. The present study showed significant differences in effort sequences between age groups ($p<0.05$). Additionally, pause time from State level was significantly higher than Regional level tournament ($p<0.05$), and the 15-16 yrs group presented lower values compared to 17-19 yrs and > 20 yrs groups ($p < 0.05$). Sterkowicz & Maslej (1998) found similar results in judo match analyses of the 1996 Polish Championships, with an effort-pause relationship of about 25/10 s. Moreover, the present data indicated a significant difference between weight categories when comparing heavyweight with other categories ($p<0.05$). Despite the effort/pause analysis having been commonly used to investigate match demands of judo combats performance (Calmet & Ahmaidi, 2004; Franchini et al., 2009) effective evaluation of this time-motion analysis requires knowledge of each specific group that can potentially affect the physiological performance in intermittent practices in judo training sections.

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THE COMPARISON OF MENTAL SKILLS PROFILE OF YOUNG IRANIAN ELITE WRESTLERS IN VARIOUS WEIGHT CLASSES

Key-words: mental skills, elite wrestlers, wrestling weight classes

Introduction

Mental skills are considered one of the major components of performance in high levels of athletic competition. On the other hand, athletes of every sport for improving and achieving their peak performance need different incentive and mental skill factors. However with regard that the wrestling is a combat sport and the psychological preparation has of special importance and with possible differences in mental states various weight classes, the purpose of this study was to compare the mental skills profile in different weight classes in wrestlers.

Methods

Method of study was comparative-causative. Statistical sample are 240 wrestlers with age range of 18.5 ± 0.839 years in the form of 32 teams participating in the Youth Championship in Iran (2010) were selected as Statistical sample. To gather information about wrestlers mental skills South Australian Sports Institute (SASI) questionnaire was used. Wrestlers according to their weight classes categorized in one of the classes, lightweight, middleweight and heavyweight. Data analysis was done by using analysis of variance (ANOVA).

Results

The Results of the study showed no significant differences in any of mental skills (motivation, concentration, self-confidence, control mental state, mental imagery and goal setting) among the three weigh classes; lightweight, middleweight and heavyweight.

Discussion

Previous research have compared mental skills between athletes of different sports and different levels of skills and with regard that the wrestlers in this study all were elite athletes and participated in many of tournament in national and international. Therefore, it is expected that they may have equal

psychological features. However, coaches should always keep individual differences in mind when working with individual athletes, although this slight changes individual difference can make a big change in success.

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ELITE AND SUB-ELITE JUDOKAS: THE FACTORS BEHIND INTERNATIONAL SUCCESS

Objective

This work aims to identify the key characteristics that differentiate elite and sub-elite judo athletes, elite judokas being the ones with medals won on top (continental and world) competitions.

Used sample

The dataset includes 88 competitors from the Portuguese, Spanish, Brazilian, Tunisian and French national teams:

Men: elite – 30 sub-elite – 33.

Women: elite – 12 sub-elite – 13.

The physical and metabolic tests

The physical, metabolic and strength tests performed include:

1. Rate of force development, power, power-load and relationships of the arm extensor and flexor muscles, tested in a bench-press and in a rowing plan position.
2. For the leg extensor muscle, Squat Jump (SJ), Countermovement Jump (CMJ) and Repeated Jump (RJ).
3. For the legs' resistance explosive strength, power load. For the legs' resistance explosive strength, Repeated Jump (RJ).
4. The COPTEST(a), used to evaluate during five minutes, at every minute, blood lactate concentrations, "RFD", "Strength" and "Power" with resistance power load.

Analysis methodology

The data analysis methodology includes:

- Descriptive statistics:
- Classification-discriminant analysis

Classification-descriptive analysis

A classification-discriminant analysis is performed using the CART-Classification and Regression Trees algorithm [Breiman, Friedman, Olshen and Stone 1984] in order to differentiate between elite and sub-elite classes of judokas.

CART uses a binary recursive partitioning of the base data to build a tree from a dataset gathered in the root tree node. Each node is split into two

descending nodes using one of the predictor variables to establish the branching.

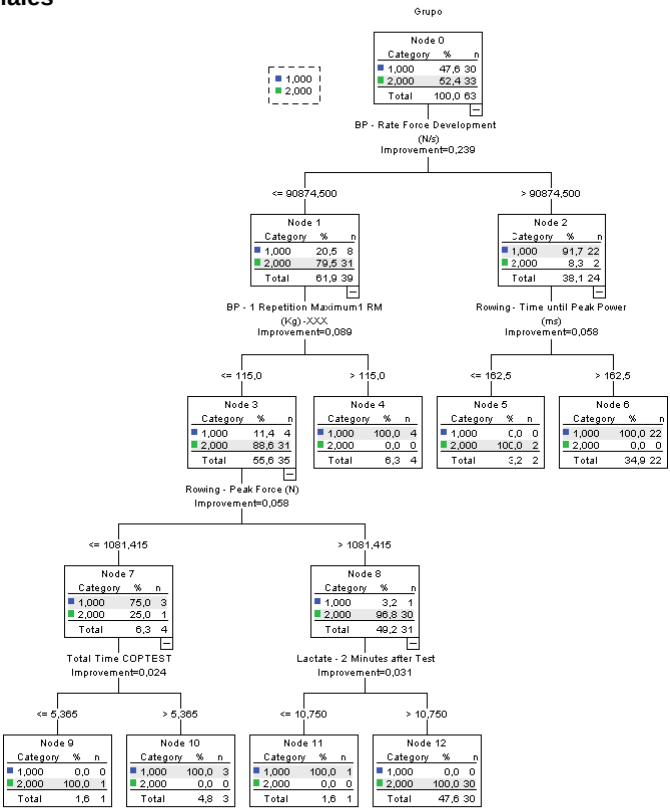
The selection of the splitting variable searches for the decreasing of the within-nodes diversity (referred to the target classes) and for the increasing of between nodes diversity, each partition obtained producing a tree with less diversity than the immediately preceding tree. The predictions are assessed in each terminal node of the tree using the corresponding modal classes.

The proposed approach differentiates the athletes and ranks their discriminant characteristics.

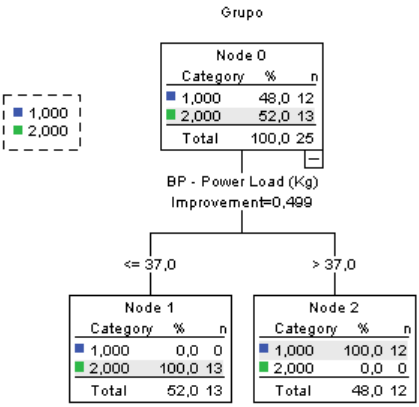
Results

Graphs on the lower left hand side (Male) and right hand side (Female).

Males



Females



Conclusions and future work

Male and female bodies and psyche are different; so is their Judo. It is no surprise that the factors affecting men and women success at international level are different. The analysis performed with CART identified the following discriminant factors between elite and sub-elite judokas:

Men:

• The generated tree is wider than women's (more variables needed to correctly classify all cases).

• The first discriminant variable is BP – Rate Force Development. Should the tree be pruned at this stage, BP – Rate Force Development would correctly classify as either elite or sub-elite 53 out of 63 male athletes.

Women:

• The generated tree correctly classifies the athletes into elite and sub-elite at the first node, being narrower than men's.

• The first discriminant variable is BP – Power Load. This variable allows to correctly discriminate all elite and subelite female athletes.

These results agree with recent work from other authors:

The maximal rate of rise in muscle force [rate of force development (RFD)] has important functional consequences as it determines the force that can be generated in the early phase of muscle contraction (0-200 ms)- [Agaard, P., 2002]. This is in full agreement with the results obtained in men.

Nonetheless, [Cronin et al., 2005] theoretically, the best improvements in athletic tasks that involve significant power output would be gained by training at the load that maximized an individual´s power output. In Judo, power load is very important: to throw the adversary, the judoka must use a

heavy load power. However, this presumes that power is the best predictor of athletic performance and, therefore, training to improve power output will best facilitate improved performance. Although important, and the female results suggest it, power load possibly isn't the most important factor.

The predilection of research and conditioning practice on improving power may be misplaced: strength qualities such as impulse, RFD or explosive strength may better predict athletic performance and hence it is the development of these qualities that research and strength training should focus on.

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THE BALANCE AND THE RATIO OF PULLING-REAPING-PUSHING IN ELITE JUDOKAS

Introduction

Arm muscle strength is considered to be an important factor of performance in Judo, supporting specific motor skills and actions. Large discrepancies in strength in either movement action could limit the success of the athlete in these sports or could increase the likelihood of shoulder injuries (Baker, 2004). Therefore, like in other capacities such as endurance, specific tasks, age, gender and specific positional roles may induce different strength patterns. Additionally, several authors argue that strength weaknesses and/or unbalances are related to soft tissue injury risk. For these reasons, strength assessment and control is of critical value for monitoring the effects of training programs and injury risk factors. Strength evaluation provides relevant information through indicators such as peak force, peak power, bilateral strength differences in arm extensor (Ext) and flexor (Flex) muscles and antagonist/agonist strength ratios.

In Judo the most common techniques consist of pulling, pushing and reaping which all need to be practiced with a partner. So, research needs to develop a measurement system that can be used to evaluate the forces involved with these techniques.

In order to respond to attack, the control of proper distance and the force application, to destabilize the rival through movement, derives from the body´s entire balance (Eui-Hwan, 2008).

Balance control abilities are essential for top athletes to reach optimal performance in competitions, especially for judoists (Perrin, P. et al., 2002). Judo can be divided into attack and defense abilities, both of which influence winning.

Objectives

Thus, the main purpose of the present investigation was to evaluate and to compare strength profiles of male and female judokas, with respect to peak force, peak power, average power and maximal dynamic in arm´s strength with differences and antagonist/agonist ratios.

Method

42 elite athletes from five countries: Portugal, Brazil, Tunisia, Spain and France (30 males and 12 females) were submitted to bench press and row plan. The software (Quasar Control 5.1, Madrid, Spain) was used to calculate the output of each repetition of the bench press and rowing performed. The ratio was assessed by measuring and comparing 1 repetition maximum (1RM), power and the peak force in bench press (BP) and row (R) in elite men and

women. The tests were carried out on separate days, with the 1RM BP performed on the first day and the 1RM ROW performed 48 hours later.

The maximal strength, the power-load, the power and the relation of the arm extensor muscles, and the arm flexor, were tested in a bench-press and in a rowing plan position using progressive relative loads till 100% 1RM. During the upper extremity test actions, bar displacement, power (watts) and strength (N), (were recorded by linking a rotary encoder to the end part of the bar. The rotary encoder recorded the position and direction of the bar within an accuracy of 0.0002 m.

Factorial analyses of variance (ANOVAs) were used to determine whether differences existed between the groups in 1RM BP, 1RM ROW, power and strength ratio. In the event of a significant *F* ratio, Fisher protected least significant difference (PLSD) *post hoc* comparisons were used to determine where these differences existed. The strength ratio was calculated by dividing the variables BP by the variables ROW and expressing as a percentage (BP/ROW*100). Pearson's moment correlations were also calculated between Variables BP and ROW. Significance was accepted at an alpha level of p = 0.05.

Results

Table 1. Group elite male and female average ± SD results for upper body pressing and pulling 1RM(Kg), power charge (%1RM) and comparative ratio.

		Bench Press	Rowing	%BP/ROW	Sig.
1RM (Kg)	Elite M	114 ± 19,5	105,3 ± 17,9	109,0 ± 11,7	***
	Elite F	65,8 ± 11,5	76,3 ± 17,7	96,6 ± 17,7	*
Power Load (% 1RM)	Elite M	50,7 ± 6,7	56,0 ± 7,4	91,7 ± 13,8	**
	Elite F	48,4 ± 7,9	50,9 ± 7,7	96,6 ± 17,7	*

Table 2. Group elite male and female average ± SD results for upper body pressing and pulling power (Watts), relative power (W.Kg.$^{-1}$) and comparative ratio.

		Bench Press	Rowing	%BP/ROW	Sig.
Average Power (W)	Elite M	709,1±151,4	804,3 ± 174,2	89,1 ± 13,2	***
	Elite F	402 ± 98,6	600,9 ± 204,7	72,5 ± 23,6	**
Relative Power (W.Kg.$^{-1}$)	Elite M	9,1 ± 1,8	10,3 ± 1,9	89,1 ± 13,2	***
	Elite F	5,9 ± 1,5	8,6 ± 2,5	72,5 ± 23,6	**

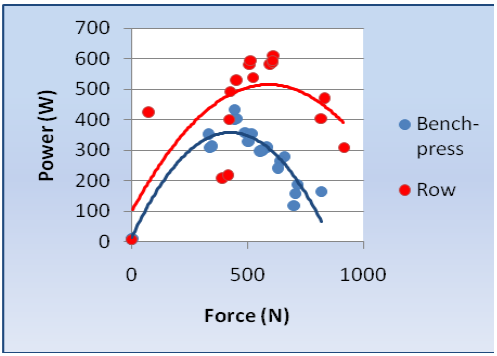


Figure 1. Female Power Curve

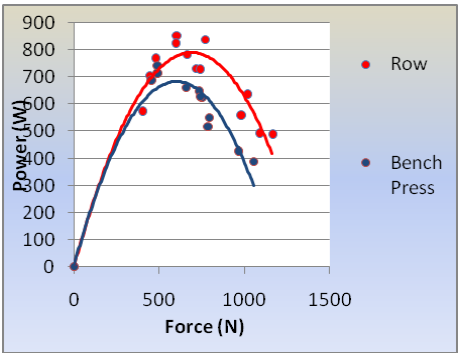


Figure 2. Male Power Curve

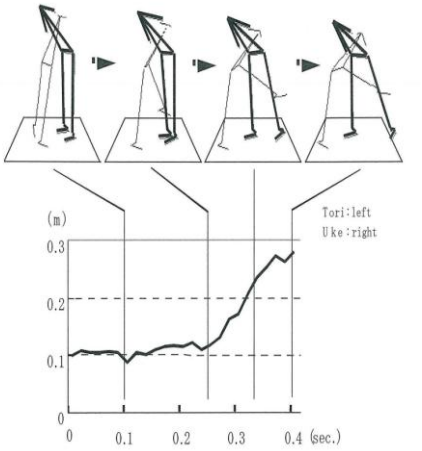
The results for the strength scores are contained in Table 1, 2, 3. The balance between bench press and rowing was significantly different in male and female judokas with the exception of peak force and relative force in the female group. In table 4, the pooled data indicates a strong and significant relationship between upper body pressing and pulling strength in athletes who simultaneously train for maximum strength in both actions. Nevertheless, in the female group that relation is not significant. However, in terms of Power, both groups present a strong correlation. The relationship between BP and R is more significant in the male as the graphic shows.

Table 3. Group elite male and female average ± SD results for upper body pressing and pulling peak force (N), relative power (and (W.Kg.$^{-1}$) and comparative ratio.

		Bench Press	Rowing	%BP/ROW	Sig.
Peak Force (N)	Elite M	2062,5 ± 597,4	1677,5 ± 496,1	130 ± 43,4	***
	Elite F	1088,3 ± 297,1	1114,3 ± 341,8	106,8 ± 43,3	ns
Relative Force (N.Kg.$^{-1}$)	Elite M	26,1 ± 5,97	21,5 ± 6,5	130 ± 43,4	***
	Elite F	16,4 ± 5,4	16,1 ± 3,7	106,8 ± 43,3	ns

Table 4. Correlation and coefficient of determination (R^2) expressed as a percentage, between upper body pressing (BP) and pulling (ROW) of 1RM (Kg), power (W) and peak force (N) strength.

		Elite Male	Elite Female	Pooled
1RM (Kg)	Correlation (r)	0, 79**	0,42	0,74**
	CoD(R^2)	63%	17,2%	72,4%
Average Power (W)	Correlation (r)	0,71**	0,71**	0,63**
	CoD(R^2)	50,3%	4%	48,1%
Peak Force (N)	Correlation (r)	0,46**	0,39	0,43**
	CoD(R^2)	21,4%	15%	33,8%



The theory of reaction is based on the natural occurence of *Uke* to defend the throwing efforts of *tori*. In the process of doing so, *uke´s* body becomes rigid against the pulling or pushing efforts of *tori* in an attempt to maintain balance and stability (Imamura et al. 2007).

Figure 3. Uke Reaction after an O-Soto-Gari atack of *Tori* (Imamura et al., 2007)

Conclusions

The pooled data exhibited a strength ratio of 72.4 % and correlation of r = 0.74 between the 1RM BP of ROW. In female athletes, it exhibited no significant correlation that indicates the athletes have great differences and should exhibit a concise ratio of around 100% when pressing and pulling.

A comparison of the test scores should indicate a strength ratio equivalence of around 100%, indicating that the same amount of mass can be lifted in the respective pressing and pulling movements.

This study suggests that between the pulling and pushing actions there are significant differences, in both genders.

However the female athletes show an atypical behavior in the influence of the pushing over the pulling.

In conclusion, coaches of sports such as judo, in which players must both forcefully press away and pull in opponents, should monitor the development of strength in both actions.

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WHAT IS IN THEIR MIND: ANALYSIS OF VARIOUS MARTIAL ARTIST GROUPS

Introduction

In the theory, various authors describe inner meaning of martial arts. At other hand, in the process of acculturation, martial arts differ from their source frame in the culture, where they have been born. In the anthropology of martial arts is always important to know, what martial artists really think about the art, what is their motivation. Cynarski (2006), for example, did wide research in this area, mostly in Polish martial artists.

Methods

The main objective of this paper is to present an analysis of the relation among various martial arts, especially in social domain. It is a part of the specific research project named Fight, Dance and Ritual which is directed to fight, dance and ritual phenomenon analysis. Participants older than 18 years and with more than one year practice in aikido, thai box, aikibudo and karate have been questioned with the same question: "What does (particular activity) mean for you?" We have used focus group methodology, as well as brainstorming for obtaining data. All statements, given by martial arts practitioners have been written down for future analysis. The number of the words gained this way has depended on number of people in the group and on given time.

Discussion

The collections of these words have been performed through the mind maps. Mind maps provide an effective study technique when applied to written material (Farrand et al., 2002). The words have been connected to smaller groups of similarity and then have been compared with similar groups in other martial arts.

This confrontation shows not only the relationships in martial art clubs but also participant's attitude to the art and common traits. We can arrange the words into groups as follows: Friendship, Pain, Physical condition and Training, Dressing Room and "home way", Outfit and equipment were included in all of chosen martial arts. It is interesting that word groups "Life way" and "Technique" wasn't found out in Karate. In Thai box it wasn't found „Delight", and „Role mode (Hero)".

Conclusion

Although, we are influenced by many myths in martial arts (see Yamada, 2003), fortunately, only few practitioners join them with their relation to martial art. Thoughts about martial arts are connected with everyday practice and social life in the club much more, then with theoretical basis.

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TAEKWONDO TO PEOPLE WITH DISABILITIES: CONCEPTS AND PERSPECTIVES

Key-words: Combat sports, Taekwondo, people with disabilities.

There is no doubt that the sport in all its manifestations, has become one of the biggest phenomenon of recent times, involving more people, either as athletes, spectators, students, scientists and professionals from various segments, what makes it played, studied, discussed and taught in various contexts, manifesting itself in society in different ways. This study aims to present and investigate the Taekwondo to people with disabilities, new modality to people with disabilities, also called "Para-Taekwondo." This study sought to the phenomenon whitin their sport diversity and its various manifestation forms (PAES, MONTAGNER, FERREIRA, 2009). However, the focus will be on combat sports (Martial Arts) as an example of sports event, are incorporated into the sporting context, as part of this immense figure scenario where the elite sports (GOMES, 2008). We use the analysis as methodological tools and theoretical literature about what is being published and discussed academically and in the sports federations on the "Para-Taekwondo." The "Para-Taekwondo," is an adaptation of the conventional mode for the practice to people with upper limb amputation (amputation of one or both members), and also with a larger and long-term goal which seeks to be part member of the Paralympic movement, adding to the sport and philosophy of the Paralympic Sports meanings. In the recent history of the sport have already happened two world championships, the first World Championship in Baku, Azerbaijan in 2009, with 36 athletes and 16 participating nations. The second edition was held in St Petersburg in Russia in 2010, a total of 60 athletes (54 men and 6 women) from 17 countries. As in most sports practiced by people with disabilities, which largely has the counterpart in the Olympic Games, some adjustments are made in the rules for the sport to be reached, the most comprehensive possible for all athletes of different disabilities and classifications, allowing everyone to participate with the same conditions. The changes in the rules for Taekwondo to people with disabilities rely on safety standards, with few modifications made to the rules of competition of the Olympic Taekwondo. This way, we reflect on the theme of combat sports to people with disabilities through its instrumentation in the area sports-educational. This reinforces the needs for further investigations in this field, to contribute more meaningfully to the academic society, professionals, for the progress of studies with this theme. This study sought to contextualize the Taekwondo as a form of combat sport within the sport pedagogy and present the new manifestation which starts its development: "Para-Taekwondo", before that, we urge reflection on the feasibility and

possibility of the practice of the Korean Martial Art to people with disabilities and their possible inclusion in the Paralympics Games.

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PREFERRED TERMINOLOGY FOR IMPROVING PUBLICATION VISIBILITY OF MARTIAL ARTS & COMBAT SPORTS SCIENTIFIC LITERATURE

Introduction and objectives

Martial arts and combat sports (MA&CS) terminology is very diverse and heterogeneous due to the amount of different styles, schools and martial practices or sports that exist all around the world. Research visibility and information retrieval are limited by these causes. The aim of this study is to point out the different terms related to the widespread martial arts included in the scientific literature. From this basis, a set of recommendations for authors, reviewers and journals publishing MA&CS works are offered for improving publication visibility.

Methodology

Based on some specific works about MA&CS terminology, a group of 278 searching terms was made up, including the several terms related to different martial arts (e.g., judo, karate, taekwondo) as well as to the varied names taken by a martial art (e.g., tai chi, taichi, tai ji, taiji, taijiquan, etc.). Terms were entered individually in the "*Topic"* search field of SCI-EXPANDED, SSCI, A&HCI databases from Web of Science (WOS) for data mining. Our research was limited to article or review documents published from 2000 to 2009.

Searching history was saved in *My Saved Searches* option for future retrieval while obtained data referred to each term was filtered manually and exported to SPSS program (v. 19) for statistical analysis. Total and relevant references were registered for obtaining the relevance and informational noise from each search. A descriptive analysis of the data was done.

Results and discussion

55.4% of the terms were not used by the authors, since they refer to MA&CS papers that have not been indexed in the studied databases yet (e.g. aikijutsu) or to MA&CS terms that have not been utilized (e.g. kenpo). On the other hand, 44.6% of the terms retrieved some article or review document, which indicates a research focus on certain MA&CS. Specific terminology is quite standardized, although there are some MA&CS with a variety of different names in the published works. Generally, a preferred and most common term is used by authors when a martial art can be referred by different names, so future studies should introduce it for getting a wider publication visibility.

On the other hand, terms related to unknown or new MA&CS (e.g. mukumbusu) do not retrieve too many documents, so it is recommended to use a broader term (e.g., martial arts) in the usual indexing fields (title, abstract, keywords) so users can easily retrieve those documents in the future.

Also, several terms (e.g. sumo) produced an excessive informational noise due to their polysemy and usual appearance in others fields of study. Including or specifying broader terms should go with them as well.

WOS database production and its rules for searching slow down the retrieval and extraction of relevant information about each MA&CS in some cases, therefore WOS users, or in general from any other database, should know the rules for searching and truncation, boolean operators and wildcard characters utilization, and features of that databases for optimized their searches and avoiding the informational noise.

Conclusion

Preferred terms from each MA&CS as well as broader terms in relation to the topic of the research should be included in the title, keywords or abstract of the studies for obtaining a higher publication visibility and facilitating researchers the information retrieval in this field of study, even though most appropriate terminology considered by the authors would be also used in their papers.

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ISOKINETIC KNEE AND HIP STRENGTH IN YOUNG TAEKWONDO-IN

Background

Studies on isokinetic strength in young taekwondo athletes (*taekwondo-in*) are scarce. Aiwa and Pieter (2007) reported that collapsed over angular velocity (120^o/sec and 300^o/sec) and movement (knee extension and flexion), boys recorded a higher peak torque (116.05±17.07 Nm vs. 88.94±12.29 Nm, eta^2=0.473). When scaled to height^2, relative peak torque was still higher for the boys (41.54±3.82 Nm/m^2 vs. 35.87±4.30 Nm/m^2, eta^2=0.379). Limited information is available on hip strength in either adult or young *taekwondo-in*. The purpose of this study, then, was to assess isokinetic knee and hip strength characteristics in adolescent nationally competitive young *taekwondo-in*.

Methods

Subjects (23 males, 14.39±1.68 years, 1.62±0.91 m, 51.49±12.18 kg and 26 females, 14.45±1.67 years, 1.59±0.69 m, 51.00±8.36 kg) were nationally competitive American junior *taekwondo-in*. Isokinetic concentric strength was measured on a Cybex II isokinetic machine (Cybex, Division of Lumex, Inc, Ronkonkoma, NY, USA) during leg extension and flexion at the knee joint at 180^o, 240^o and 300^o/s as well as hip flexion and extension at 240^o/s and 300^o/s (3 repetitions at each angular velocity) with a 1-minute rest between angular velocities. Peak torque was calculated as the highest torque in the isokinetic phase of the range of motion at the preset angular velocity. The dominant leg with which the athletes performed the roundhouse kick was used. Gender differences were assessed in absolute terms. A 3-way (Gender * Movement * Angular Velocity) MANOVA with repeated measures on the second and third factors was used to determine differences between gender, extension / flexion and angular velocity. The level of significance was set at 0.05.

Results

There was a trivial Sex * Movement * Angular Velocity interaction for peak torque at the knee joint (eta^2 = 0.07) as well as a large Movement * Angular velocity interaction for the knee joint (eta^2 = 0.82). Simple effect analysis of the Movement * Angular velocity interaction revealed knee extension at 180^o/sec (63.27±15.19 Nm) to be higher than at 240^o/sec (33.25±10.01 Nm) (d=2.38), while knee flexion at 240^o/sec was higher than at 300^o/sec (44.89±10.99 Nm vs. 24.80±10.92 Nm, d=1. 83). There was a medium effect for Movement of the hip joint (eta^2 = 0.37). Peak torque for hip extension (57.69±20.21 Nm) was higher than for hip flexion (52.10±18.79 Nm) (d=1.69).

Discussion and Conclusions

It was previously reported that isokinetic hip flexion at 240^{o}/sec contributed to the force of the roundhouse kick in boys but not in girls (Pieter and Bercades, 2009). Isokinetic strength is also suggested to be implicated in potential injuries to the hamstrings (Pieter et al., 1989). Research is needed to investigate the relationship between isokinetic strength, kicking force as well as injury susceptibility of the hamstrings.

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ANALYSIS OF TEACHING METHODOLOGIES USED IN THE TEACHING OF TECHNIQUE TO BEGINNERS IN STRIKING MARTIAL ARTS AND COMBAT SPORTS

From the principle stated by Tani (1996) that there should be *"… a body of knowledge that supports theoretically and scientifically the practice of a professional"*, and which was latter reaffirmed more explicitly by Guedes (2001) in saying that *"… there are unavoidable differences between the professional who teaches motor skills without any knowledge of what takes place during their acquisition, and that who performs the same task while having an idea of the mechanisms and processes involved in it"*, it becomes unquestionably relevant that there is a need to look at Martial Arts and Combat Sports complete training processes, going beyond the traditional and preferred scientific mathematically based physiological and biomechanical areas of study.

Thus, since the skill in performing the Arts' techniques make up the fundamentals for both beginners to be able to participate in the Arts' targeted activity (sparring), as well as for top competitors to achieve higher success, it makes sense for the methodologies used for their development to be of the highest quality.

Therefore, during this presentation, a scientifically research based analysis of the teaching methods traditionally used for the development of striking Martial Arts' and Combat Sports' techniques will be conducted, presenting the following line of thought:

1. Definition of technique and its training variables,
2. Conceptualization of Biomechanics' research goals, distinguishing its area of study from motor control function,
3. Analysis of psychological and ecological based research into the development of motor skills' programs, so as to understand how the environment can condition (constraints) the development of techniques by focusing their problem solving purpose, and thus creating the need to guaranty specificity of practice,
4. Analyzing the need to achieve task specific balance between space/timing outer coordination and the inner body positioning management, relating this to:
   - The management of training according to the performers' different training and skill degree of development,
   - The development of the negative transference mechanism called functional blindness (Yessis, 2006),
   - The evaluation of the skills pertaining the possibility to perform adjustments during the action's performance (Wulf et al 1998 & Siff, 2004),

- The relevance of the environment in providing the performance with task intrinsic feedback (Cumming et al, 2006),
- Diagnosis of the limitation and negative transfer that "traditional" technical training methodologies have on effective skill acquisition,

5. Development of an alternative and scientifically based approach to conduct the development of technique, focusing on providing specificity of practice so as to teach the practitioners to perform and not merely execute, namely by:
   - Allowing for development of logical and outward focused task guided actions,
   - Developing space/timing outer management skills in beginners, before focusing on biomechanical variables in later stages of training,
   - Enhancing of technical development through the use of task intrinsic feedback during and post execution.

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CLINICAL STUDY TO ASSESS THE THERAPEUTIC BENEFITS OF TAIJIQUAN TRAINING IN PATIENTS WITH IDIOPATHIC PARKINSON'S DISEASE

Background

The practice of taijiquan shows significant results on improving the quality of life as a result of many improvements in physical function, such as tolerance to activity, cardiovascular function, pain management, balance, improved immune response, improved flexibility, strength and kinesthetic sense. In particular, taijiquan turns out to be an appropriate intervention for older adults because it can limit the decline in physical performance associated with aging and chronic disorders in health, by providing benefits on balance, strength, endurance and flexibility through the development of kinesthetic sense and proprioception. The exercise of taijiquan – with its emphasis on repetition of forms and on the slowness and high technical control of movements - has been shown to be useful in the process of relearning of lost functions, under the recruitment of compensatory mechanisms (alternative neural networks , alternative brain networks).

Some researches support the efficacy of taijiquan in Parkinson's disease, although the number of studies is still insufficient. Taijiquan works on internal and external attentive stimuli which underlie the traditional rehabilitative approach to Parkinson's disease: concentration, posture, motor sequences, balance, connection of parts of the body, mental intention of practice and integration of physical and mental action. The slow, rhythmic movement with constant sliding weight, trunk rotation, the change in the support base and focus on its central axis, affect balance and walking ability.

Taijiquan seems to be superior to conventional exercises in the UPDRS scores of Berg Balance Scale and tandem stance test (balance test), Timed Up and Go (pace test) Six minutes walks (physical performance test), test of the walk backwards, as well as in the prevention of falls in people suffering from Parkinson's disease.

The effectiveness of the practice found so far from scientific evidence and the similarities of principles, aims and objectives with traditional physical therapy, advise to experiment further with taijiquan as a therapeutic exercise in people with Parkinson's disease.

Objective

To evaluate the effects induced by the practice of taijiquan on a selection of people with stabilized Parkinson's disease and specifically assess the march, balance, posture and the subjective perception of improvement.

Evaluate the effectiveness in the short, medium term of a therapeutic exercise program carried out following the method of taijiquan in patients with idiopathic Parkinson's disease.

Evaluate the influence of the method on specific motor parameters (walking, posture and balance), and other factors (quality of life, mood, attention and concentration).

Methods

The study focuses on outcomes related to a group of eight patients selected by the neurological medical team of the Rehabilitation Clinic of San Raffaele Cassino, Italy, compared to HY degree of disease (stage II, III), by age and treatment.

The group has partecipated five times a week classes in taijiquan (6 figures Beijing form of Yang style) lasting 90 minutes each, for a period of four weeks after which they were re-administered the test and measured any changes. The results were analyzed and summarized individually as Case-control. The tools used before and after the experimental period were: Hoehn-Yahr Scale, Scale, UPDRS, Tinetti test, Berg Scale, Gait analysis, Bartel Index, HAM-D, MMSE, PDQ-39, SF36.

The evaluations also included the administration of a questionnaire to patients to assess their perception of any improvements induced by the program of practice in terms of physical, psychological and social as well as the propensity to continue the practice of taijiquan.

During the first week of classes attention has focused on the explanation of the rules and principles of rehabilitation training.

At the same time exercises to prepare and relax the body started to be practiced, as well as self-massage, breathing exercises and perception of the center of force with the aim to relax the body and mind to create an optimal activation state of the coordination / perception of following form movements, condition confirmed by subsequent impressions of the participants.

The second, third and fourth week the group has practiced form 6 from Beijing memorizing a few techniques a day, and repeating them several times, in order to facilitate memorization.

Results

After four weeks of trial, comparing the test shows an improvement in motor activity, in particular pace, length and stability of step, as observed through the Gate Analysis.

The sf3 test results show a marked improvement in the subjective perception of quality of life, found in the whole group of synthetic indices of perception of both mental and physical state.

Significant improvements were also noted in the scales of vitality (VT) and judgement on each own’s physical performance (PF). The results of the questionnaire on the propensity to continue operations have shown a collective will to to continue the practice even after the end of the study.

By the end of the experiment patients were able to remember the whole form by themselves.

Conclusion

Taijiquan can help people with Parkinson's disease as it improves balance and gait and affects significantly the subjective perception in the sense of improvement.

The methodology used is effective for learning the technique, and for its possible personal use.

Many aspects of this innovative approach should be studied further. This calls for the need for clinical tests, appropriately designed and controlled to a large sample of patients, making it possible to define specific protocols and validate the effectiveness of treatment in the long term.

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RITUALISM IN THE MICROCOSM OF AIKIDO DOJO

Introduction

Saotome (1993) states, that aikido dojo (aikido training hall) is microcosm of human society. Japanese martial arts are ritualized forms of fighting. Aikido practice consists mainly from prearranged exercises called kata. Also forms of behaviour are tied by unwritten or written etiquette. In the western world, where culture of Japanese martial arts meets European culture, these rituals are often changed (Klens-Bigman, 2002). This process is called westernization of eastern martial arts by Cynarski (2008). We bring a study of real life in the specific European aikido (aikikai) dojo. The main question was how much is eastern Asian martial art of aikido westernalized, and how rituals characterised its practice.

Methods

One of typical aikido dojo in the Czech Republic was observed in detail. Direct unhidden observation took three winter months in the 2010/2011. Researcher filled up protocol of observation with detailed notice about rituals in different phases of aikido training. Data were used for description of processes in the dojo and for basic descriptive statistics. Key moments were photographed for next analysis.

Discussion

As most interest categories were signs and symbols observed. Signs include mainly mechanic communication as salute, and interaction between uke (that who receive technique in the kata) and tori (that who performs technique in the kata). Symbols express status of persons, which is highly ritualised and according to Japanese culture. Body in aikido is tool for doing rituals. Posture, gestures and mimics should express warrior attitude and superiority of tori, and, surprisingly, also superiority of uke, which is able to stand all throwings. Training begins before exercising itself by coming to dress room, where different people are changed from university students, officers, workers, IT engineers to aikidokas (aikido practitioners). Entry to the dojo should be connected with bowing. But not all aikidokas bowed. It is still something strange in the European culture, and seeing as part of exoticism of Asian martial arts. Also dress code is not very strict. Newcomers are allowed to wear all kinds of sportive dress. Rituals in aikido are learned in the same way as aikido techniques. But in aikido techniques, one can see clear progress and aim of doing it. In rituals, aim is often hidden, and changes in personality are not seen immediately.

Conclusion

Aikidokas in observed dojo generally follow tradition of Japanese martial art, but choose single rituals very selective from time to time. Seems to be

important, that theory of Japanese martial arts describe ideal form of rituals in the country where aikido was born. For European people, it is way of enrichment of their own culture, but would be very strange to change all signs and symbols of culture. We could see that even such highly ritualised martial art as aikido can be adapted in the process of acculturation.

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LIVED EXPERIENCE OF CAPOEIRA – A BRAZILIAN MARTIAL ART – TROUGH VAN MANEN´S PHENOMENOLOGY OF BODY, TIME, SPACE AND HUMAN RELATION

Capoeira is one component of the Afro-Brazilian culture. This specific martial art combines and synthesises elements of dance, fight, acrobatics and play. In this strange dance the dancers imitate movements and attitudes of certain animals by performing specific movements with their bodies, especially with feet and legs (Almeida, 1986). The art-fight is played by pairs inside a circle formed by musicians and players, who arrange themselves in a certain order, clapping hands and singing. For the purpose of this research, 130 participants experienced capoeira lessons over 7 months of maintained regular participation in that lessons. This study was based upon Van Manen theoretical framework (1990). The aforementioned existential 'life worlds' were related to the participants experiencing the elements of capoeira lessons: the capoeira game – fight and dance, the capoeira songs (playing musical instruments, singing and clapping hands), the capoeira group – the participant himself and others, and the implications for the social world. According to the methodological principles, this qualitative study explored the phenomenon of participants' lived experience. To answer such questions, phenomenology was developed to illuminate the various ranges of human experiences, the context of these experiences, and how these experiences may be described (Spiegelber, 1965; Burch, 1989; Hammond, 1991; Eldred 1997). More recently, Van Manen (1990) incorporated the notion of 'lifeworld' to express the 'lived experience' through phenomenological perspectives. The author explains that lived body, lived space, lived time, and lived relations could be an updated framework for grasping human experiences and for generating fresh views of taken-for-granted behavior and experience. For this study, participant observation and researcher's reflexive journal, tape-recorded interviews were the techniques for collecting data. Phenomenological reduction through units of meanings and horizonality were the methodological techniques for interpreting information from the participants.

Results indicate that length of time spent participating in capoeira as a martial art might be proportionate to the awareness felt on the part of the individual of the changes brought about in his previous experience of life. It is related to adherence, building skills, sense of fight-rhythm, action-reaction, concentration and self-improvement. Also, fear and a sense of vulnerability on the interactions with were challenged. Space as communal integration was related to the group of capoeira as a school of ethics. The space of this martial art was understood as an Afro-Brazilian cultural manifestation with specific rituals, values, historical and philosophical background. The body experienced in capoeira gave an understanding that bad and good things are together into

the practice: happiness, hurt, pleasure, tiredness, success, failure, freedom and respecting rules. Considering human relations, the findings indicate that capoeira is a group activity in which the performance turned in by the group as a whole is very important for the overall effectiveness of the game.

The results indicate that Van Manen's framework of lived experience of body, time, space and human relation might be an up-to-date principle applicable to researchers interested in to study human experiences in martial arts.

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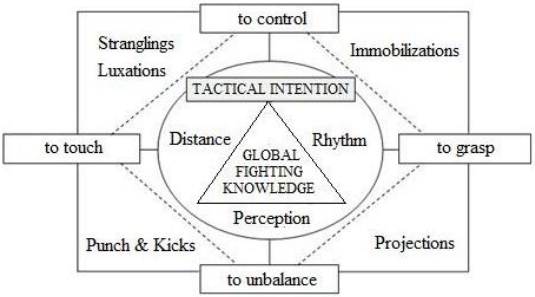
GLOBAL FIGHTING KNOWLEDGE – CHARACTERIZATION AND DEVELOPMENT

Terrisse (1991, 1996; Terrisse et al.; 1995) refers the existence of one particular kind of knowledge in the dialectical combat relation, that works independently of its dimensions and valences. This knowledge is designed "Global Fighting Knowledge" and it's represented in the fighting action by the existence of a "Tactical Intention" that calls for the necessity to reduce the uncertainty to facilitate the apprenticeship and, at the same time, keep the confrontation phases without losing the sense of the activity" (Terrisse et al., 1995: 26-27). In this way, and according to Avelar & Figueiredo (2009:46), the Global Fighting Knowledge refers "the capability used by each practitioner in every situation occurred during the combat action, independently of the technical model execution, characterized by some institutional restrictions related with each combat sport discipline".

With this work, we propose to characterize the contents that arise from this knowledge used during the fight, discriminating the technical and tactical components that characterize this group of practices. In this meaning, we propose an interpretative model called "Structural Model of Combat Actions", that should be observed in two dimensions: the Technical dimension and the Tactical one. This model is based on the assumption of Avelar & Figueiredo (2009:52) that "in every combat sport discipline we find the same problematic (to fight), using different tools (techniques) in relation with changing circumstances (distance, contact, displacement, on foot/floor references)".

The Technical Dimension (external) is composed by "Basic Fighting Actions" (to Touch, to Unbalance, to Control and to Grasp) that, in a between relation, produces the "Combat Situations" (Punching/Kicking, Projections, Immobilizations, Stranglings and Luxations) considered by Figueiredo (1998) in reference to the essential ways of possible finalization in Combat Sports and Martial Arts.



On the other hand, the Tactical Dimension (internal) is represented by the relation between the fields of action proposed by Tokitsu (1979): Distance, Perception and Rhythm. As a middle element between these dimensions, we

can observe the position (and attitude) of Guard, which gives the conditions to do the transition between the dependents Offensive and Defensive Processes.

The “Global Fighting Knowledge,” as a horizontal perspective of the Martial Arts and Combat Sports, has relations with the domain and knowledge of these technical and tactical elements in general. Anyway, observing the characteristics and rules of the different disciplines that compose the Martial Arts and Combat Sports, in competition, grading or practice circumstances, we can find the importance of some elements that set up specific knowledge of each modality and style.

In this schematic way, the general or specific “Fighting Knowledge” is reached when the action reveals the mentioned “Tactical Intention”. This intention shows the existence of a high-quality “Fighting Knowledge”, because it results of a kind of thinking with operative character known as “Tactical Thinking” (López Ros, 2010). Its manifestation allows the players to act, not as an impulsive action, but in a linked, interactive and functional relation with each fighting situation.

In this way, we believe that the “Integrated Technical-Tactical Model” (López Rós & Castejón, 1998:16) reveals itself particularly important to the development of the Teaching-Learning Process of the “Fighting Knowledge”. This model, as a constructivist model, previews the development of these Technical and Tactical processes considering both together through the development of the tasks contents, where they are integrated in a progressive spiral during the fight exercise.

Regarding the evolution of the “Fighting Knowledge” Teaching-Learning Process, and the typology of the tasks that have to be applied in this representative Integrated model, we adopt the didactical treatment suggestions proposed by Molina & Castarlenas (2002:43) when they point the progressive raise of the difficulty of the tasks (starting from the generic abilities to the specific abilities), the differentiation of the objectives (to fight for objects to the body-fight) and the organization (from big spaces in groups to small spaces in pair and even alone).

This interpretative “Structural Model of Combat Actions” developed around the evidenced elements in the “Global Fighting Knowledge” is an instrument with a considerable utility as an organizing principle for the Teaching-Learning Processes in Sportive Initiation, as in the curricular organization of the Combat Sports contents in the Physical Education curricular programs.

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O DESENVOLVIMENTO DO KARATÉ NO CONTEXTO DAS ARTES MARCIAIS E DOS DESPORTOS DE COMBATE. ANÁLISE SOCIOLÓGICA SOBRE OS ASPECTOS SOCIOCULTURAIS E OS ENVOLVIMENTOS SOCIAIS DOS KARATECAS PORTUGUESES

Em que medida os praticantes do karaté são portadores de uma arte marcial que os pode demarcar do ser desportivo, mas que os constitui numa comunidade identitária?

Esta pergunta insere-se no nosso objecto de estudo no âmbito de uma investigação de doutoramento. A mítica tradição guerreira dos Samurais do Japão encontra-se presente de forma dominante no processo de globalização do karaté, traduzida na concepção de treino enquanto expressão do Budô, veiculado por uma filosofia oriental de vida constitutiva de um estilo de vida identitário, e envolvimentos organizacionais particulares, que se afirmam como forma de resistência ao modelo de competição desportiva ocidental, apesar da existência de diferentes usos e disposições sociais por parte dos praticantes.

Foram definidas algumas hipóteses de estudo, que procuram testar a nossa pergunta de partida: H1: Encontra-se um estilo de vida identitário entre os praticantes experientes do karaté, ainda que decorrente de usos e disposições sociais particulares este encerre alguma diferenciação segundo o estilo adoptado na sua prática, independentemente do grupo social de pertença e da idade. H2: Na sua maioria, os praticantes experientes de karaté concebem a sua prática como expressão do Budô, reproduzida de forma dominante pelos agentes de ensino da modalidade através de práticas de luta convencionais, imagens, símbolos e veiculação de valores, independentemente do estilo de karaté, grupo social e idade. H3: As relações entre os praticantes experientes de karaté da vertente de não-competição e de competição desportiva, têm vindo a caracterizar-se por tensões, dinâmicas de resistência e conflitos, geradores de cisões entre agentes de ensino, espaços de prática ou clubes e estrutura federativa.

Com base num conjunto alargado de variáveis, esperamos dar resposta às hipóteses por nós formuladas.

Para desenvolver esta investigação sobre a prática e os praticantes do karaté em Portugal, recorreu-se a várias técnicas: inquérito por questionário a praticantes avançados de karaté, observação directa e participante e entrevistas.

Como conclusão, os dados apurados apontam para uma pluralidade de significados do karaté, mas com uma forte expressão de adesão aos valores de Budô, pelo menos de um núcleo de praticantes maioritário. Estes praticantes mais graduados concebem a sua prática enquanto Budô, virada relativamente para uma tradição e uma filosofia, ou seja, uma identidade, e não apenas como uma mera vertente desportiva.

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ISOKINETIC STRENGHT PROFILE OF THE ELBOW AND SHOULDER OF JUDO ATHLETES

Key-words: judo, isokinetics, shoulder, elbow, muscle strength.

Introduction

The main purpose of this study was to characterize the strength profile of the upper limb of the Portuguese male judo athletes.

Methods

Isokinetic strength of shoulder external and internal rotation and flexion and extension of the elbow was measured on a Biodex dynamometer at 60 and 180º/s, in a group of 22 national male judokas and in a group control of 22 healthy participants of the same demographic characteristics. The percentage values representing the relation between shoulder external and internal rotation forces (ER:IR ratio) and between elbow flexion and extension forces (Flex:Ext ratio) were calculated considering the Peak Torque values.

Results

In all the isokinetic parameters of internal and external rotation force, and of elbow flexion and extension force the judo athletes had presented significantly higher values ($p \leq 0.05$)

The mean values of ER:IR ratio observed in the judo athletes group (60% ± 10 at 60º/s, and 63% ± 11 at 180º/s) were lower than in the control group (67% ± 9 at 60º/s, and 69% ± 12 at 180º/s), but significant differences were only found at 60º/s ($p \leq 0.05$).

The mean values of Flex:Ext ratio observed in the judo athletes group (82% ± 15) were similar to the ratio of the control group (82% ± 12) at 60º/s, but significantly higher at 180º/s velocity (94% ± 20 versus 83% ± 14 at 180º/s), ($p \leq 0.05$).

Conclusions

This study contributes to the achievement of the knowledge of the typical adaptations of the muscular upper body strength of male judo athletes. Judo athletes had revealed higher peak torque at the shoulder internal rotation and at the elbow extension, than in the movements performed by the antagonist musculature. The ER:IR ratio in judo athletes was lower than the ratio of the control group at the two angular speeds, and also lower than the value that the literature purposes as a satisfactory balance between the rotators muscles of the shoulder (Alderink et al., 1986). Comparing to the control group, the value of

the Flex:Ext ratio of the elbow at 180º/s was superior in judo athletes. The results also suggest that the judo athletes are well adapted to develop higher values of shoulder external rotation and elbow flexion at higher velocity.

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COMPETITION INJURIES IN YOUNG JUDOKA

Background

No published information is currently available on injuries in young Filipino martial arts athletes in general and *judoka* in particular. The purpose of this study, then, was to assess injuries in young Filipino *judoka* and compare them statistically with those incurred by international counterparts as well as those from other martial arts.

Methods

The Filipino *judoka* (n=192) competed in the 2009 Philippine National Juniors Judo Championships in Manila. There were 4 major divisions: junior boys (n=76, 17.67±1.08 years) and junior girls (n=52, 17.64±1.13 years) as well as boys (n=52, 11.97±2.40 years) and girls (n=12, 11.88±2.60 years). Injuries are expressed per athlete-exposures (AE). In addition to injury rates per 1,000 AE, confidence intervals around the rates were also computed. Where appropriate, the odds ratio was calculated.

Results

There was no difference in injury rate between boys [84.03/1,000 AE (95%CI: 47.20 – 120.86 AE)] and girls [37.04/1,000 AE (95%CI: 14.29 – 88.37 AE)]. Although the boys were at a higher risk than the girls, this was not significant (OR = 3.13, 95%CI: 0.62 – 15.76, p = 0.17). The junior boys were not at a higher risk than the boys (OR = 1.69, 95%CI: 0.82 – 3.46 AE, p = 0.153). However, the junior girls were at a higher risk than the girls (OR = 6.30, 95%CI: 1.26 – 31.66 AE, p = 0.03).

Discussion and Conclusions

Statistically significant differences were found between Filipino girl *judoka* and German girl *karateka* [190.48/1,000 AE (CI 95%: 114.27 – 266.67 AE)] (Müller-Rath et al. 2000) as well as Canadian girl *taekwondo-in* [333.33/1,000 AE (CI 95%: 170.00 – 496.66 AE)] (Pieter and Kazemi, 2007), with the Filipinos scoring lower. The Filipino junior boys and junior girls sustained significantly more injuries than British judo counterparts [39.76/1,000 AE (CI 95%: 29.15 – 50.37 AE) for boys and 52.08 (CI 95%: 36.86 – 67.30 AE) for girls] (James and Pieter, 1999) as well as Greek taekwondo colleagues [48.21 AE (95%CI: 33.80 – 62.62AE) for boys and 47.62 (95%CI : 29.98 – 65.26 AE) for girls] (Beis et al., 2001). More research on the epidemiology of judo injuries in the Philippines is needed.

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COMBAT SPORTS/MARTIAL ARTS AND CIVILIZING PROCESSES

The present paper analyzes different aspects of the theory of the Civilizing Process (Elias, 1989; Wouters, 2007) through the special 'conspicuous field' of combat sports/martial arts (CS/MA from here).

The aim of the paper is threefold: (i) To briefly introduce the theory of civilizing process as an interesting and successful model to study CS/MA; (ii) To advance these analyses, presenting a general pattern of development in different martial disciplines; (iii) To avoid deterministic views of the theory of the civilizing process, introducing the notion of decivilizing process as well (Elias, 1996; Mennell, 1995).

(i) The theory of the civilizing process has been successfully applied to sports studies (Elias and Dunning, 1992; Dunning and Sheard, 2005); furthermore, to the specific study of CS/MA (Sheard,1997; Sánchez García, 2006,2009,2010 ;Yokoyama, 2005). Combat practices, as a kind of 'universal social treat' of human populations developed into different types of 'institutionalized violence', currently included under the general denomination of CS/MA .The analysis of such development would be crucial to study the relationship of sociogenetic dimension (degree of pacification and monopoly of violence, balance between private/State violence, monopoly of) and psychogenetic dimension (*habitus* of participants, levels of self-control and acceptance/repugnance of violence) in any given society.

(ii) Through the analysis of the development of different CS/MA we can establish a general pattern: from warrior activity in the battlefield to the duelling in civil society to CS/MA in highly pacified societies.

Analysis of European fencing, boxing and Japanese Budo will be presented in order to clarify such pattern.

(iii) Elias's ideas about the civilizing process have been misunderstood often. Seen as too deterministic and highly optimistic about the inescapable and unavoidable evolution of every society towards greater degree of civilization, we could lose Elias's conceptualization about 'the other side of the coin': decivilizing processes. Examples from the German fencing fraternities linked to the rise of Nazism and militarization of Japanese Budo in pre-war era will help us to introduce and analyze such topic.

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TACTICAL DIMENSIONS OF KATA: DEVELOPING MOTOR INTELLIGENCE IN AIKIDO

Kata training is a fundamental means of knowledge transmission in Japanese koryu bugei and modern budo. With this term I'm referring to -predominantly- pair training where one acts as the shidachi or tori (executing the technique) and the other as the uchidachi or uke (receiving the technique). The debate about whether it is a useful tool for teaching or a narrow and limiting road for the learning process has been around for a while already (Hurst,1998). This debate is still mainly sustained by supporters of free practice and competition vs supporters of kata. As a general pattern, the competitive side of martial arts ended up linked to sport (e.g judo, kendo) and the kata side to non competitive martial arts (e.g aikido and many koryu bugei). I think kata training has been misunderstood by many competitive advocates but also by many kata supporters that let their training developed into a swallow shape, almost a kind of callisthenic dancing. In the latter case, some critiques are well deserved; nonetheless, not all kata training leads to this situation, just *bad kata training*.

To shed light into the discussion, I propose a different angle in the analysis of kata as understood in aikido. Instead of seeing it as fixed movement patterns, as a matter of mere techniques, I will try to introduce the tactical side of kata. We can not forget that, as Friday (1997, 1999) states, kata convey the main principles of a school or style and these are tactical principles.

In order to develop my argument, I will take several steps:

(i) First, I present a general discussion on the difference between technique and tactic. Tactic implies something lacking in technique: the decisional factor, so to say, motor thinking or motor intelligence. Conceiving this from an ecological model (Araujo, 2009; Hristovski, R., Davids, K., Araujo, D. 2006) -opposed to cognitivist, information processing models- we explore the relationship of Gibson's notion of *affordance* and budo notion of *debana* ('moment of opportunity').

In a nutshell, kata should not be considered as a kind of collective technique but a tactical one. Indeed, kata should be considered as an already solved tactical situation (where certain attack *affords* certain defence and viceversa). So to say, kata implies motor thinking, not sheer repetition and automatization. This –many times- neglected differentiation changes everything in the way we look at the martial art and the way we teach/learn it.

(ii) Second, if kata represents a tactical situation, the role of uke is paramount. It is not just a partner facilitating the execution of the technique but an opponent facilitating/resisting the technique. The degree of help/resistance of uke towards the execution of the technique by tori varies depending on the degree of expertise of tori and uke.

(iii) Third, in order to develop motor intelligence through kata we have to design a progressive, non-fixed, methodology (see Tamura (2002) for different teaching methods in aikido). Indeed, kata and free practice should not be conceived as opponents but as two poles of a continuum. The degree of expertise of pupils determines the kind of methodologies applied.

Along my presentation I will refer to some cases of my own training in aikido to exemplify the discussion.

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RELATIONS BETWEEN THE CAPOEIRA AND THE MARTIAL ARTS: IMPLICATIONS IN THE SCHOLAR PHYSICAL EDUCATION

Key-words: Martial Arts, Physical Education, Pedagogy

Introduction

The teaching of combat sports and martial arts is manifested by the practice of specific modalities in non-formal education environments (clubs, gyms, extra-activities at school) (Gomes et al, 2010) or in the scholar context (formal education) where it is also divided in modalities or assuming the terminology Luta/Lutas (Coletivo de Autores, 1992). When the teachers have to teach combat sports at school, the ones that have never had contact with this subject tend to ignore it in their classes (Ferreira, 2006; Nascimento, Almeida, 2007; Buznic, 2009), those who have already experienced a specific modality, however, use to choose only this contend in their classes (Brossais, Terrisse, 2009; Heuser, 2009). Therefore, there is a conflict in what concerns the combat sports and martial arts in schools. **Objectives**: To point out the relations between the Capoeira and the eastern martial arts and reflect about how they have been transferred from the specific knowledge of the non-formal environment to the scholar knowledge, presenting pedagogical and methodological issues that can support the physical education teachers´ acting

Methodology

This essay has utilized the literature review (Thomas e Nelson, 2002) about the historical and pedagogical aspects in martial arts and Capoeira.

Results

The elements present in Capoeira are: body dialogue, musicality, occupation of the empty spaces, afro-brazilian culture; the eastern martial arts on the other hand, point to body opposition, lack of music, balance, body contact and eastern thinking. These characteristics may transit in both combat sports manifestations and contribute on the reflection in relation to the teaching beyond the specific modalities. So it is possible to understand them as practices that have common principles that are related not only to the dynamics and reading of the combats, but with historical and cultural common aspects that can provide other comprehensions.

Conclusions

This proposal aims to synthesize the diversity of body techniques that combat sports may present and, by doing this, to provide pedagogical

procedures that minimize the lack of experience and knowledge of the different specific techniques of each combat sports, this enables the teaching in physical education in the scholar context with the objective to attend the minimum and different principles that lead the classes, what gives a particular identity to this contend at school.

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FREQUENCY AND TYPE OF TECHNIQUES USED BY FEMALE ATHLETES COMPETING IN TAEKWONDO DURING THE PAN AMERICAN GAMES' 2007

Introduction

In the American continent the main taekwondo competition is the Pan American Games. TKD competition is characterized by the use of punches and kicking techniques, although the last ones prevail, as well as defensive techniques (Jakubiak, Saunders, 2008). To better understand the sport it is necessary to know the actions used in each type of competition (Santos et al., in press). Information about female competitors is limited (Markovic et al., 2008). Thus, the purposes of this study were to identify the frequency of techniques and to determine the type of techniques used by female medalists vs. non medalists TKD athletes who competed in the Pan American Games in Rio de Janeiro 2007 in four different weight categories.

Methods

It was analyzed 48 female athletes in a total of 43 matches (-49 kg/14 athletes and 12 matches, -57 kg /12 athletes and 11 matches, -67 kg /11 athletes and 10 matches, and +67 kg /11 athletes and 10 matches), according to the statistics presented in the official book of the Pan American Games held in Rio de Janeiro 2007. Techniques were classified as offensive kick, defensive kick, offensive punch or defensive punch, following the proposal by Kazemi et al. (2006, 2009 and 2010). Frequency distribution was calculated and a Chi-square test (Yates corrected when the frequency was lower than 5) was used to verify the association between technique and wining or not a medal in this competition.

Results and discussion

Table 1 presents the frequency and type of technique used by female TKD athletes during the Pan American Games' 2007.

There was no association between the type of technique and group for each weight category neither when the all weight categories were grouped (χ^2 = 0.93; p = 0.34). This is similar to the recent findings from Kazemi et al. (2010) concerning the occurrences during TKD competition in the 2008 Olympic Games. These authors reported no statistically significant association between success (winners versus non winners) and the distribution of type of score for either men or women.

Table 1. Type of technique scored by female medal winners and other competitors during the 2007 Pan American Games Taekwondo tournament.

Techniques	Winners				Others			
Weight categories (kg)	<49	<57	<67	>67	<49	<57	<67	>67
Offensive Kicks	14	12	19	12	9	2	7	2
Defensive Kicks	22	20	28	18	4	5	4	9
Punches	0	0	0	0	0	0	0	0
Total	36	32	47	30	13	7	11	11

Conclusion

There was no association between type and frequency of techniques and competition success.

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EFFECT OF WUSHU (KUNG FU) TRAINING ON MANUAL DEXTERITY

Key-words: Wushu, manual dexterity, athletes.

Several studies suggest that Manual Dexterity is a skill that can be developed and improved through the stimulation and practice. This study in Wushu athletes (commonly known as Kung-Fu) was born out of the need to inquire if this Chinese Martial Art contributes or not to the development of Manual Dexterity.

The purpose of this investigation is to study the effect of Wushu practice in manual dexterity, according to the preferred hand (PH), non-preferred hand (NPH) and bimanual dexterity (both hands combined). The sample comprises 12 boys (all right-handed) from 15 to 23 years old. These youths were divided into two groups: one composed by six Wushu athletes and the other with six non-practitioners.

To evaluate the manual dexterity it was applied the Minnesota Manual Dexterity Test. In the unimanual test, the only hand tested was the preferred hand.

By SPSS, version 18.0, the statistical procedures involved descriptive (mean and standard deviation) and inferential statistics (the Mann-Whitney test). The significance level was set at $p \leq 0,05$.

The main results obtained in this study showed that (i) in the bimanual dexterity, Wushu

athletes presented a significant better performance when compared to their counterparts; (ii) in the unimanual dexterity there weren't significant differences between both groups.

The conclusions we can gather from this study is that there is a relationship between Wushu practice and bimanual dexterity.

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THE HEMISPHERIC PREFERENCE RELATIONSHIP WITH THE MOTOR COORDINATION IN MMA ATHLETES

Introduction

The series of fights that make MMA (Mixed Martial Arts) is a field of Physical Education equipped with a lot of stakeholders and areas, being extremely well, specifically with respect to changes in behavior and acts to starts a complete human improvement.

Agreeing in part with the Vygostsky's (1988) and Rizzi's (1997) lessons claim that the play behavior influences of the individual development, specifically how to acquire selfconfidence, language and thought. All within a game that enc ourages socialization of the practitioner, it is necessary to understand, for best results, the prevalence of each individual in the hemispheric processing of your information.

This study focuses to establish a possible relationship between the hemispheric prevalence with the performance of MMA athletes motor cognitive tasks that require martial arts hand eye coordination and brain flow.

Methodolgy

Universe of this study

The universe of this study was composed of seven MMA fighters aged between 18 and 23 years of age, athletes SENNA TEAM Academy at the Rio de Janeiro, Brazil.

Methologic Strategy

The participants of this study were first submitted to CLEM test, proposed by Marques (2004). After underwent evaluation of motor coordination by the Protocol of Leon (2008) which assesses the following coordination abilities: Precision Movement, Economy of Movement, the Movement Creep, Elasticity of the Movement, Regulating Voltage, Isolation of the Movement and Adaptation Movement. For each item evaluated is the minimum score and maximum points is 3 points.

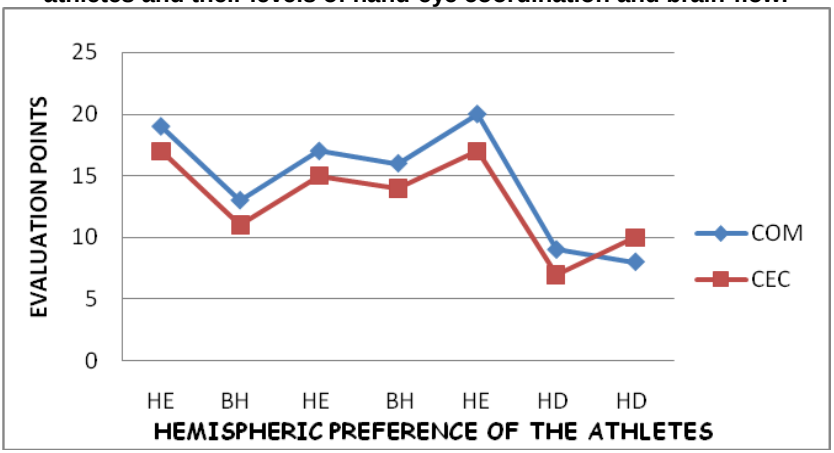
Results

From the figure one can observe the relationship between hemispheric preference of athletes and their levels of hand-eye coordination and brain-flow. Note that the athletes with the greatest number of points in the two assessments have predominantly left hemispheric, being followed by those who presented as the bi-hemispheric dominance, and the athletes who showed right hemispheric dominance to those who obtained the worst results in the motor ratings.

From an analysis of the results shown on Figure 1, it is believed that the left hemispheric group of athletes stood out better on motor performance, given the characteristics of the dominant hemisphere, in this case, the left, which is

related to cognitive-motor activity in that the work performed, the individual need of perception, speed, and agility, to complete the task (Cardoso, 2007; Silva, 2002) .

Figure 1: Relationship between hemispheric preference of athletes and their levels of hand-eye coordination and brain-flow.



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PHYSIOLOGICAL AND ANTHROPOMETRIC PROFILE OF PORTUGUESE PROFESSIONALKICKBOXERS

Scientific research in combat sports is an emergent area. In the last two decades, professional combat sports have grown tremendously, both with the creation of the K1 circuit, as well as the MMA boon originated by the UFC. To predict sports performance, technique and tactic are essential, as well as physical and psychological traits. Whereas technique and tactic are not easily measurable, one can measure physiological and strength variables, as fundamental elements of success in sport. Thus, the motivation for this work arises from the necessity to create a profile for the elite Kickboxer, since it has not yet been studied.

In this study, 13 professional Portuguese Kickboxers (11 male athletes and 2 female athletes, ages 28.92 ± 5.30, height 1.74 ± 0.074 and weight 73.92 ± 11.344), were measured for height, body composition (withskinfoldsand bio-impedance), leg power (with the counter-movement jump), arm power (with a counter-movement plyometric push-up), flexibility (using the Modified Sit & Reach test for lower limbs, and the Shoulder Mobility test for upper limbs), and maximal oxygen consumption, VO_2máx (using a maximum treadmill test, with 1 minute stages).

This study presented for the first time, some values for future reference, for Portuguese Kickboxers, as presented in table 1. Previous study by Zabukovec (1995) reported values for Full-contact Kickboxers (kicks above the waist, only), but no reference values for Kickboxers from all the disciplines, such as Low-Kick (kicks below the waist), K1 (knees and some clinch allowed) and Muay Thai (knees, elbows and unrestricted clinch allowed). All Kickboxers in this study practiced the 4 disciplines, with the exception of 1 male Kickboxer, who was exclusive to Full-Contact discipline (as in Zabukovec's study).

Table 1 – Synthesis of results(mean ± SD)

Results		**Total (n = 13)**
SubjectCharacteristics	Age (years)	28.92 ± 5.30
	Height (cm)	173.8 ± 0.07
	Weight (kg)	73.92 ± 11.34
	Body Fat - SF (%)	9.72 ± 5.70
	Body Fat - BI (%)	13.27 ± 5.69
Strenght& Power Tests	CMJ Flight Time (ms)	0.52± 0.03
	CMJ Height (m)	0.79± 0.10
	CMPU Flight Time(ms)	0.41 ± 0.14
	CMPU Height(m)	0.25 ± 0.21
AerobicTest	VO_2máx ($ml.min^{-1}.kg^{-1}$)	57.99± 10.33
	Máx Lactate	12.62 ± 1.69

FlexibilityTests	Sit & Reach (cm) Shoulder Mobility (cm)	39.69± 9.40 1.81 ± 10.18

Next, we present in table 2, a comparative analysis of several physiological profiles of Judokas (Franchini 2007), Wrestlers (Callan 2000), Mixed Martial Artists (Gochioco 2010) and Kung-Fu athletes (Artioli 2009).

Table 2 – Comparative table of Martial Arts and Combat Sports (mean ± SD)

Variables	Kickboxing	MMA	Judo	Wrestling	Kung Fu
Age (years)	28.92 ± 5.30	25.5 ± 5.70			
Height (cm)	173.8 ± 0.07	174.8 ± 5.3	176.2 ± 8.9		
Body mass (kg)	73.9 ± 11.34	77.4 ± 11.4	90.6 ± 23.8		
Body Fat Percentage (%)	9.72 ± 5.7	11.7 ± 4.0	11.4 ± 8.4	7.6 ± 3.4	9.5 ± 6.3
Sit and Reach (cm)	39.69 ± 9.4	30.3 ± 10.6		30.8 ± 5.8	45.5 ± 6.1
Vertical Jump (cm)	79.0±10.0	57.60 ± 7.3		60.0 ± 10.0	37.7 ± 8.4
VO2max (ml/kg/min)	57.99± 10.3	55.5 ± 7.3	48.3 ± 8.1	54.6 ± 2.0	

Results indicate Kickboxers have similar body fat to Kung-fu athletes, lower values than Mixed Martial Artists but greater than Wrestlers. Their VO2máx was higher than all the others, indicating the extreme preparation necessary for professional fighting. Kickboxers were less flexible than Kung-Fu athletes, but more flexible than Judokas, Wrestlers and Mixed Martial Artists. Kickboxers showed the biggest power values, followed by Wrestlers, Mixed Martial Artists and finally, Kung-Fu athletes.

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SOCIAL INTERVENTION OF THE KICKBOXING COACH

The purpose of this study is to identify the perception that athletes have of their Kickboxing coach, regarding the educational aspects and fair-play, analyzing their perception of the coach as a promoter of socially correct values, or not. We use the Portuguese version of the questionnaire "*Questionário sobre os Aspectos Educativos e Fair-Play*", adapted to Kickboxing.

The role of the coach has a very important impact in the development of skill, values and beliefs of athletes. His behaviors directly influence the experiences and development of athletes, making him a socializing and integration agent, that helps athletes find their place in society.

A total of 70 athletes participated in this study, 52 male athletes and 18 female athletes, from several age-groups and competition levels. A questionnaire regarding educational aspects and fair-play was adapted to Kickboxing and used to evaluate coaches behaviors. This questionnaire was created and validated by Pinheiro (2005), designated has "*Questionário sobre os Aspectos Educativos e Fair-Play*" (which translates from portuguese to english as "Questionnaire of Educational Aspects and Fair-Play"). This questionnaire concerns the perception athletes have of their coach's behaviors. It has 50 questions in Likert scale (of 1 to 5), analyzing 8 dimensions.

Table 1 – The 8 dimensions of the questionnaire

8 Analysis Dimensions			
• Extra-sport Life Interest • Promotion of Healthy Hygiene Habits	• Positive Afectivity • Negative Afectivity	• Promotion of Fair - Play • Vocabularie Used	• Diverse Discussions • Aggression Amongst Athletes

To adapt this questionnaire to Kickboxing, some minor changes to the questions were made without changing the meaning and purpose of the question. To validate the changes, we use the expert method described by Hill and Hill (2009) and a preliminary study. We consulted two Kickboxing experts, with significant experience has coaches and athletes, and with experience in scientific research, to validate the meaning of the changes in questions. Then we applied the pilot questionnaire to 10 athletes (7 male athletes and 3 female athletes), to verify applicability, seek and solve interpretation issues, clarity and objectivity of questions. After this process, the questionnaire was assumed valid

for Kickboxing, has it demonstrated relevance, clarity and construct validity. It was then applied to 70 athletes, and a descriptive statistics analysis was made.

Results, in the “aggression amongst players” dimension, say that the coach does not allow any kind of violence extra-fight, from his athletes to their opponents. In the “diverse discussions” dimension, the coach argues with the opposite corner, the referees, but not with the audience. In the “vocabulary used” dimension, the coach uses foul-mouthing sometimes. In the “positive and negative affectivity” dimensions, the coach uses both positive and negative affection behaviors sometimes. In the “promotion of fair-play” dimension, the coach is an active promoter and inhibits non-promoting behaviors. In the “extra-sport life interest” dimension, the coach cares with the social and academic life of the athletes. In the “promotion of healthy hygiene habits” dimension, the coach promotes and fosters hygiene habits amongst athletes.

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RELATIONAL ASPECTS BETWEEN MARTIAL ARTS AND FELDENKRAIS AWARENESS THROUGH MOVEMENT

This study proposes to compare and analyze the results of two researches previously carried out. These researches treat different objects and were made independently of one another. However, the comparison of their results points an essential correlation between certain facets of the objects examined.

A first object examined is the living practice experience of TaiJi Quan, Chinese Taoist martial art, analyzed through interviews. Other object refers to the emerging experiences during practices of Feldenkrais awareness through movement, parsed through field diaries.

The phenomenological analysis guided the achievement of results in both researches. The goal of this work was to identify the contours relational between two researches and the possibilities of influence of martial arts in the Feldenkrais method, by comparing the results of these two polls and of these with the biography of Moshé Feldenkrais (founder of the method).

The results point to the presence of a martial arts influence on the Feldenkrais method in teaching and in historical terms, while biographical correlation and experiential sense temporally broad of these practices. In pedagogical terms, the Feldenkrais technique is based on the principles of non-dualism between man, culture and education, as well as between mind, body and emotions.

Dualism known as very common at the time of the creation of the method and between physical activity practices in general, found until today in the West, especially in high-performance sports. This Division is not usually found in martial arts in general and in what's, as a convention, commonly called as Eastern Culture. This illustrates the TaiJi Quan, characterized as a path and not as an end. The fight and the results are not external objectives that must be achieved. What is considered most important is how this path is reached. Historically it is possible to identify a correlation between Moshé Feldenkrais biography and the results found on the lived experience of TaiJi Quan.

These results are described in six categories: return, energy, self-awareness, daily life, otherness and cosmology. Moshé Feldenkrais biography relates directly with four of the six categories found: return, self-awareness, daily life, otherness. First, the category Return, refers to an initial state, understood as innate and natural, which is retrieved through the practice of TaiJi; Feldenkrais underwent this process, as he developed his technique after traversing a self-healing process. He suffered a knee injury that according to doctors would take him off any judo practice and physical activity even after a surgical procedure. Not content with this possibility he resolved to study and seek a way to heal

himself and he succeeded. This process led to the development of the Feldenkrais method, and is related with the category of Return because it allowed him to return to a state regarded as innate and natural but previously lost.

This automatically led us to the categories – Self-consciousness and Otherness. It is through Self-consciousness that the Feldenkrais method is based, because all the time he remember we have to look to ourselves and pay attention to what is done, bringing the movement to consciousness. Therefore this path was present in the biography of Moshe Feldenkrais and directed him after achieving his goals of self-healing to the transmission of it to other people, which matches with the category of Otherness. In TaiJi these categories arise first as an attitude of looking to yourself and automatically to others which generates an understanding of the world and themselves and allows a congruence in the practitioner's life, called Self-consciousness. And in a second moment, this attitude while generates internal benefits, directs individuals to share these benefits, through education and a relationship with the other considered to be more balanced and positive.

Therefore, the benefits of the practice are both long-term and short-term, what is shown in the Daily Life category. In this, the principles of practice and the results of their experiences are brought to day to day, crossing the physical space of practice, migrating to all spheres of life of a person. In the biography of Feldenkrais this becomes clear by the fact that he abandoned his former profession to devote himself to method, its development and transmission. The relationship presented stimulates the comparison with other techniques of Somatic Education devoid of direct influence of martial arts. Studies on the record of a phenomenology of corporeity could be indicative for more precise correlations between martial arts and somatic education in general.

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CREATING A TYPOLOGICAL FRAMEWORK FOR MARTIAL ARTS

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To better understand the martial arts and combative sports, it is useful to arrange them in a systematic order. We need to define and codify our terms.

We also need to better classify by type. For instance, modern-day martial arts and combative sports generally fit into one (sometimes more) of the following categories.

- **Televised elite sports** (i.e., professional heavyweight boxing championships)
- **Non-televised elite sports** (i.e., collegiate judo championships)
- **Participatory/and or participatory activities** (i.e., most aikido and kendo activities)
- **Vernacular systems** (i.e., Muslim martial arts in China)

Focus, function, and intent vary between each of these categories. The reason for the variation is that each tier serves different social purposes.

Similarly, it helps to be precise about which period we are describing. Just as individual and organizational motivations change over time, laws, immigration policies, and national stories change over time. This affects the interpretation and priorities of the martial practices of the era.

The purpose of this paper is to encourage thinking about better defining the terms we use and thinking about how those terms were used in a certain time and place.

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HOLISTIC DEVELOPMENT OF YOUNG ATHLETES IN WRESTLING

Key-words: Wrestling, Holistic Training Approach.

Wrestling is always regarded as a combat sport and required the two opponents to throw each other with shoulders on ground using holds, gut wrench and leg techniques to tackle the opponents. The sport requests athletes to have good development on skill, strength, physical and psychological abilities and modern wrestling has heavy emphasis on training of athletes' thinking skills, concentration power and abilities to make quick reflective action. A balance on physical, psychological and emotional training seems to be the essential ingredients in training activities. In China, many of the young wrestling athletes began their learning from age of 7 to 12. They are usually lived in sport institute with head coach to serve as their guardian and their daily activities are carefully monitored. This paper shares about the training methods used by coaches in China and studies the daily activities of young wrestling athletes while they are living in institute. Data indicates that intense human relationship is recorded. Although training and daily life activities exhibited with different mode of appearances in a day's work, they are connected as it builds the confidence, trust and positive perception towards wrestling. This specific format indicates a development of balanced training with components from the daily care works. This scenario suggested a holistic approach with training components from daily living and serves as effective method in preparing young wrestling athletes.

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NOT ONLY DANCING: LIFESTYLE AND CULTURE IN THE PHENOMENON OF STREETDANCE BATTLE

Introduction

Dance is strong educational tool (Russel, 1959; Dorátka et al., 1998). Streetdance is a form of dance that developed from hip-hop (Fiedler, 2003). Deejaying, graffiti, MC-ing and breakdance were part of this culture which made it possible to other street styles to develop notably funk, poplock and break-dance, too. The change in the style of dance, however, coincided with the changes in music (Kraus, 1969). As a result, street dancing emerged. This new, modern way of dancing came into existence right on the street when an indefinite number of dancers joined the various dancing styles into one (hip-hop, salsa, jazz dance, ballet, Latin American etc.). Nowadays, this style is widely known as streetdance, urban or hip-hop dance. The term streetdance, however, is used worldwide. It does not label the style of dance only but also lifestyle and culture. Thus, it encompasses both culture and sport.

Methods

We analyze the phenomenon of the battle in streetdance mainly at its theoretical base. In addition, we explore basic view of selected group of streetdancers. Statements were obtained using focus group of experienced street dancers in process of brainstorming.

Discussion

All around the world, street dancers have expressed themselves by means of music and dance and become a part of their own community. Battle is a ritual way, how to express superiority of dancer, representing his owns group, or his gang, historically.

There are two ways of competing in streetdance category. The first one is so-called choreography in which the dancer performs his or her dance choreography. Freestyle is the second and one of the best ways in which to compare individual dancers. It is called a battle. In this battle one dancing group is trying to outdo the other. In the process, they express their feelings and views by improvisation. There is a fight hidden in the dancer movies. It seems that this fight has very same attributes as any other real fight has, except contact phase (in most streetdance styles). In empirical part of research among streetdancers, battle statement is connected to self-expression, discharge of anger, and discharge of mouring. This group is in direct relation with emotions and hard physical work.

Conclusion

We should find out, how much is streetdance a martial art like, and vice versa, how much are martial arts linked to dance, as ritualized self-expression.

There is more fighting spirit in the streetdance, than in many martial arts. This is way martial arts experts and combat sport scientists should pay attention to streetdance battle.

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ANTHROPOMETRIC AND PHYSIOLOGICAL RESPONSES TO PERIODIZED STRENGTH TRAINING IN KARATE ATHLETES

Introduction

High levels of muscular strength, power and speed seem to be associated with higher levels of performance during karate kumite (Roschel et al, 2009; Ravier et al, 2006).The literature is inconclusive concerning how to conduct the strength training to improve sports performance in karate. It is believed that better results would be more related to characteristics of speed resulting from power strength training than necessarily with other types of strength training. Thus, the objectives of this study were: (a) to investigate the chronic morphological and physiological responses resulting from periodized strength training; (b) to identify in which phase the athletes would present the best performance.

Methods

Fourteen male juvenile (16.7±2.5 years-old) kumite karate athletes took part voluntarily in the present study. The athletes underwent a 14-week (3 times per week) strength training program as recommended by Kramer and Ratamess (2004): 4 wks = adaptation to strength training (12 exercises; 3 sets of 12 repetitions performed at 40%1RM), 5 wks = maximum strength (10 exercises; 3-6 sets of 6-10 repetitions performed at 80-100% 1RM), 5 wks = power strength (8-12 exercises; 4 sets of 8-12 repetitions performed at 30-60%1RM). Assessments were performed after the adaptation phase, after the maximum strength training, and after the power strength training phase. The following assessments were conducted: anthropometric measurements and body composition, squat vertical jump test, standing long jump, bench press and leg press maximum dynamic strength (1RM) tests, lower body anaerobic power and capacity (Wingate test). Blood samples were obtained at rest, immediately after kumite and competition matches to measure blood lactate (BLa). A one-way ANOVA with repeated measurements was used to compare the moments. A Bonferroni test was used as post hoc. The significance level was set at 5%.

Results

There were no statistically significant changes in anthropometric variables, body composition, bench-press 1RM, squat vertical jump, and blood lactate concentrations after the match when the different phases of training were compared. During the power strength training phase the following variables

presented the highest values: leg-press 1RM, standing long jump, peak power and mean power during the Wingate test (Table 1).

Table 1 – Variables affected by the periodized training program applied to karate athletes.

	Adaptation phase	Maximum strength phase	Power strength phase
Leg-press 1RM (kg)	196±35	238±49	268±51**
Standing long jump (m)	1.99±0.12	2.04±0.12	2.16±0.17**
Peak power (W/kg^{-1})	12.93±1.05	12.70 ± 1.63	14.73 ± 1.59**
Mean power (W/kg^{-1})	9.13±0.87	9.0±1.8	10.4±1.94**)

** different from adaptation and maximum strength phases ($p < 0.05$)

Conclusion

The results suggest that power strength training increases absolute strength variables and lower body power. These improvements may be beneficial for karate kumite performance.

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COMBAT SPORTS IN SCHOOLS: AN EXPLORATORY STUDY IN THE AUTONOMOUS REGION OF MADEIRA

Today we live in a world of constant and rapid change, in which the demands that are imposed on the human require equally rapid and effective responses.

The school must therefore be assumed as an engine for processing and training of young people towards boosting the development of skills and competencies necessary to meet the challenges of an increasingly unstable society. Therefore, we believe that the education system should focus on developing young people able to adapt to different situations, autonomous, able to make decisions in critical situations, in the background with the skills to be productive in this world of uncertainty.

We consider that the Combat Sports, in essence, constitute itself as an excellent and refined through application of the behaviors that contribute to the development and transformation of students in the sense that indicated above.

The objectives of this study is to understand the current framework that is given to Combat Sports in physical education classes and to overcome possible resistance exist, making suggestions for its approach.

The methodology had two distinct phases but interlinked. Initially we analyzed the studies in the Autonomous Region of Madeira, in order to establish the current framework of the situation and discussed the National Programs of Physical Education. In a second phase, according to the analysis, provide suggestions to overcome the resistance encountered.

Through the results we found that there is great resistance to the approach of Combat Sports (more than 70% of schools do not deal with) and these resistances are common to different levels of education (2.º and 3.º Cycles of Elementary and Secondary Education). As regards the main reasons given by teachers for not addressing the Combat Sports in physical education classes, they relate to a lack of space and materials, non-availability of time and lack of specific knowledge.

In our communication, whereas Combat Sports are not an end in itself but a means, a tool for teachers to transform the students will present a methodology in order to overcome the resistance encountered, giving a set of suggestions regarding the selection of content, organization of classes and the articulation of Combat Sports with other teaching materials.

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EVALUATION OF LEARNING OUTCOMES OF SELF-DEFENCE TEACHING AT HIGH SCHOOLS

Key-words: combatives, self-defence, physical education, evaluation, scenario training

Evaluation is one of key activities of pedagogy. There is not exact methodology for evaluation of learning results concerning the self-defence teaching. The main questions are „how" and „what" to evaluate. According to European Credit Transfer System (ECTS) learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after a completion of a process of learning (EU, 2004). In 2010 we created High School Self-defence Program (HSSP) and we started to teach the program at three different high schools. We did evaluation of learning outcomes in the affective and psycho-motor domain. We present results of evaluation both for summative and formative evaluation purposes.

Material and methods

In 2010 we implemented HSSP in the pedagogical process in two phases:

1) January – February 2010: training of three teachers
2) March – June 2010: teaching at three different schools

Table 1. Selective body of teachers in HSSP

Teacher	Sex	Age	Tenure
A	female	42	17
B	female	26	2
C	female	34	11

Table 2. Selective body of students in HSSP

School	No of groups	1. year	2. year	3. year	4. year
A	2	X		X	
B	2		X	X	
C	1	X	X		

Although just one group at the school C was studied, members of this specific group (junior volleyball player team) were from two classes.

We used two evaluation tools:

1. Non-standardize questionnaire for affective domain (14 questions)
2. Experts assessment of scenario training for psycho-motor domain (5 expert evaluating video records from scenario training)

Scenario training is a testing method of defence abilities, which comprise „role play". There are two roles: assailant and defender (Wagner, 2007).

Results

Main results in affective domain:

Students (n=44) did self-evaluation of learning outcomes from HSSP. On the end of HSSP they had: positive approach to self-defence learning, more practical information about self-defence, they know how to react in dangerous situations. Students think that after 13 lessons of self-defence increased their capability to protect themselves. But at the same time, they know more exact, that they are not capable to protect themselves against adult assailant in the real fight. That is why they will be more vigilant in the everyday life.

Main results in psycho-motor domain:

Result from psycho-motor evaluation support data from affective domain. Majority of students was not capable to defend themselves against and attacker (role player). Despite some of them responded relatively correctly, they lost. Scenario training was highly stressful situation for students. Many different symptoms of stress were recognised: shouting, yelling, crying, shake, freeze etc.

Discussion

We recommend continuing in research and training of teenagers' self-defence in physical education. Although training can be hard and stressful, it can prepare young people for solving of real self-defence situations.

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THE VALUE ORIENTATION OF MARTIAL ARTS IN MODERNIZATION

The so called “value” is a special relationship between subject and object, it is whether object meets the needs of subject. In the context of modern society, there is a premise to talk about the inheritance and development of marital arts, that is martial arts have meaningful to the world people and human culture.

1. Martial arts must be conducive to the interitance of cultural spirit

Martial arts just like other traditional culture, is the concrete expression of culture and the carrier of cultural spirit. Martial arts is not a ture martial arts if no cultural spirit, and it is not an evidence and a symbol of ethnic, nation and culture. The lack of cultural spirit has become a prominent issue in morden society, and it is leading the vague of national identity, mental attribution and life meaning. In fact, the meaning of traditional culture for us today is that its conservation and inspiration on spirit. Therefore, for the inheritance of specific traditional culture, we should pay attention to the continuity of cultural spirit. As a kind of local knowledge, cultural tradition and artform, martial arts has the responsibility and mission to heritage cultural spirit of human.

2. The aim of martial arts is to promote the improvement of individual life

Today, martial arts has become a part of school education. So, when martial arts is looked as educational resource, what kind of philosophy and what kind of goals we should establish? The ture education emphasis on the cultivation of human spirit and hightlights its aim is to develop the whole man, not one-dimensional preson. In the perspective of education, the purpose of martial arts is to make individuals improve moral character and spirit realm constantly, and so as to promote the improvement of individual life.

3. Martial arts should be integrated into the individual’s daily life

The origin of existing form of human’s meaning and value is life, which is the fundamental way for human to exist and express themselves. Only in life world, individual can truly experience meaning and value. As a form of culture, martial arts should be integrated into the individual’s daily life. Through martail arts activities of daily life, individual can feel life processes. When martial arts become a way that individual interact with social, a way to communicate between human and nature, a self-regulated channels of body and mind, it will be integrated into the individual’s daily life.

In short, the progress of martial arts skills just is a way of personal inner spiritual progress and further socialization. The fighting skills progress directly affected by will and ethics, and has spiritual significance. If skills progress unity

with individual's socialization and personal moral perfection, martial art has reached the initial and final purpose that is the development of huma nature, and went to the real cultural values.

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A STUDY OF MARTIAL ARTS IN TEACHING FOR EDUCATION AND COMPETITION

Key-words: Martial Arts, Teaching Approach, Educational Development

The teaching of Martial Arts is clothed with many features. It is an art to be preformed in theater. It is an activity for someone to present oneself. It is an educational activity in school physical education. It is also a means for health, fitness and relaxation. The many nature indicates the development as a social components as the society offers meanings and directions to its development. Nevertheless, these elements are integrated and inter-related to form the present nature of Martial Arts. Martial Arts (Sports) had a close relationship with the Olympic development. Through the actiuvity, the country, state and city find the hereos. Martial Arts (Education) refers to the adoption of the activity as means to achieve the quality growth of students in undersanding of Chinese culture, health development of students and nurturing of generic skills in creativity, critical thinking and collaboration. The paper examines the present development of teaching Martial Arts in school. There is a strong indication to adopt the Martial Arts (Sports) as goals in teaching. As Martial Arts (Sports) has a high emphasis on the competitive and aesthetic nature, training model with commond style and mechanical drilling turns to the common method in teaching the activity. Teachers seems integarated or merge the concept of competition and aesthetic nature as the main goal in teaching. That will be an alarm for education of Martial Arts in school as not all students will be the champian. There will have less chances to develop Martial Arts in line of health, educational purpose and fun components.