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Reliability of Teosq in Brazilian Jiu-Jitsu and Muay-Thai Fighters: A Pilot Study

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Abstract

This study seem to test the reliability of the instrument TEOSQ in the Muay-Thai and in Jiu-Jitsu, both modalities of fights, looking for the performance of the athletes in task and ego orientation. Testing in 15 amateur Jiu-Jitsu fighters (n: 15) age between 14 to 42 years old (mean age 24.66±7.16) and 13 Muay-Thai professional athletes (n: 13, mean age: 25.92±5.15). For the total results, we have ego's *Alpha* of 0.69 and 0.85 for task orientation; the jiu-jitsu team we had 0.63 and 0.88 of *Alpha's* results, respectively to ego and task orientation and Muay-Thai team the results was 0.70 and 0.82 respectively to ego and task orientation. We can conclude that the instrument had a good performance in both fight and that men are more prepared for fight engagement than women mainly in Muay-Thai, because the ego average is superior then the other women fighters.

Keywords: Goal's Orientation; Jiu-Jitsu; Muay-Thai; Motivation.

1. Introduction

The fighting techniques follow the evolution of humanity from the beginning of the first societies with the use of weapons and using his own body as a weapon for hunting or territorial battles. In the West the use of fighting as a sport was started in Old Greece; in ancient Rome used the fights as a way to show to the battle between Gladiators and it was in this period that have emerged the first training organization models^[1]. Already in the East, there are tales of battles that refer to the period (4000 to 2000 before Christ), however there are reports of the use of martial arts with therapeutic goals between 150 and 120 before Christ^[2].

The modality of fight with most prominent and most currently growing is the MMA (Mixed Martial Arts), which is encouraging and using various martial arts or fighting styles to make the most complete athlete possible. An example of the popularity of the sport is the case of Brazilian athlete Anderson Silva in his official Facebook page accumulated approximately 5.5 million followers.

While quoting the number of practitioners of other modalities in Brazil, as Boxing (5.800 registered), Judo (200.000 registered and occasional 2 million), Taekwondo (5876.162 184 million, registered and occasional respect) between Olympic sports and karate (800.000 casual), Jiu-Jitsu (18.000 regular and occasional 350.000) and Kung Fu (230.000 occasional) among non-Olympic arts^[3].

So for the athletes run to the top, the need to be motivated, and we also asked in which way the motivation goes on. Motivation can be defined as need for achievement of success; necessity of do better than others in activities and complete challenging tasks; the desire to rise above, especially when competing with others players^[4].

The variation in the achievement of individual goals match the variations in their way of understanding the contexts that surround the athlete, especially with regard to the meaning and function of their activities and function held thus being the thoughts and actions people in certain activities are rational expressions of their individual achievement of objectives. Therefore, the cognitive orientations of individuals in relation to a particular activity will influence their motivation for that same activity^[5].

Social cognitive approach, to assess the achievement of objectives, takes on the existence of two goals motivational orientation or achievement goals^[6]. The first one defined as goal of ego orientation, when a person is oriented primarily to show more yield than others are, and

the second is goal calls task orientation, when the orientation is linked to learning or performing a task with skill [7].

Therefore, there is a positive relationship between task orientation and intrinsic motivation, leading to more positive performance effect, concluding that there is an attempt to unravel some of the complexities of motivation in relation to difference factors individual, specifically social and reason held [8].

Individuals with expectation of success, or task orientation, have more control of their skills, believe in their effort, are more independent and are more competitive and persistent [9]. Task-oriented individuals are concerned with the demonstration of learning and mastery of the task; they direct the behavior of accomplishment [10].

Ego-oriented individuals are strongly competitive; individualistic; worries to the extreme with the defeat, it makes the sport a social status, using it to popularize themselves and auto promote; do not bother to use illicit means to achieve success, including aggression; and are less persistent and less interested when they are defeated seek to justify their errors, when in fact its failure is related to lack of capacity and its low level of performance [10].

In this way, this study seem to test the reliability of the instrument TEOSQ (task and ego orientation in sport questionnaire) in the Muay-Thai and in Jiu-Jitsu, both modalities of fights, looking for the performance of the athletes in task and ego orientation.

2. Materials and methods

This article is focus on an experimental study [11], the procedures for data collection were established by maintaining contact with the leader of each team, leading the Consent Informed athletes and so everyone was in agreement and opting to volunteering the study, they answer the following research instrument; the study did not result in extra spending by the assessed, because the data collection was taken during training teams, over a week.

The population was selected conveniently; all participants were from the City of São Paulo – Brazil. First, there were invitations for about ten leaders of the sport teams and only two were interesting in evaluating their athletes. The first one is a Gym center that trains the Jiu-Jitsu team; in this one we got 15 fighters (n: 15) age between 14 to 42 years old (mean age 24.66±7.16). In this team there are three women (n: 03, mean age 32.66±8.14) and the others are man (n: 12, age average 22.66±5.13), all from an amateur sport practicing. The second team of Muay-Thai fighting we have 13 athletes (n: 13), all professional (mean age: 25.92±5.15); in this second team, eleven (n: 11) are man (age mean 26.88±5.13) and there are four women (n: 04, age mean 23.75±5.18).

The instrument used was the TEOSQ [10] where the participants considers their level of competence; the purpose of the instrument is to assess individual differences in perspective of the goal set to sport (in this case the fighters), detecting whether the individual is task or ego goal oriented. The choice in working with this instrument is that it has shown validity in different countries [6, 10, 12, 13, 14, 15, 16]. The questionnaire consists of 13 questions, with 07 questions directed to the task orientation and 06 questions for the ego orientation, through a Likert scale that possible response options for each track 1-5 points.

The statistical method used was calculating the *Alpha's Coefficient Cronbach* in order to verify the reliability and internal consistency of the instrument items therefore calculated separately for each type of motivational orientation

(task and ego). We adopted this procedure because this is the most used techniques to assess the internal consistency are two halves, *Kuder- Richardson* and *Cronbach's Alpha* [17]. Also for statistical analysis to calculate the median, mean and standard deviation for each type of orientation were verify. We have adopted the division of the calculations of descriptive statistics separately for sports and genders. In order to highlight possible significant differences between the means we include the Mann-Whitney test (ranging $p \leq 0.05$). For these analyzes we used the SPSS software EDITOR-DATA (Statistical Package for Social Science) version 18.0 for Windows. We also do statistical separated by gender and modality of fight

3. Results & Discussion

Following the statistical method, the results of Alpha's Cronbach reliability shows that for the total results we have ego's Alpha of 0.69 and 0.85 for task orientation in total group. For the jiu-jitsu team we had 0.63 and 0.88 of Alpha's results, respectively to ego and task orientation. For the Muay-Thai team the results was 0.70 and 0.82 respectively to ego and task orientation.

Looking for some mistakes in the internal consistency of the instrument, we checked if some item was deleted, so as we can see in table 01, concerning to ego orientation, probably in issue 06, the result could rise up. On the other hand, the issue 09 was excluded the result would fall, thus making the set of answers ideal. It is possible that adjustments concerning language could be done, so a content analysis on issues could help improve the instrument. On the Muay-Thai, fight the results do not converged, because the issue 09 is the one of the most important. The issue 09 asked to the athlete "*who score the most points/goals/hits, etc.*", in this case, as the Muay-Thai team is a professional one it may be impacted in the way that the athletes answer the instrument. The total result of the instrument appears in the literature in other sports [18, 19, 20].

Table 1: Results of Alpha of EGO Orientation, if Item of the Scale was deleted.

Item Of The Scale	Jiu-Jitsu	Muay-Thai	Total
	<i>a</i>	<i>a</i>	<i>a</i>
Issue 01	0.50	0.62	0.62
Issue 03	0.61	0.60	0.64
Issue 04	0.68	0.64	0.67
Issue 06	0.69	0.68	0.73
Issue 09	0.49	0.71	0.63
Issue 11	0.50	0.67	0.61
Ego Orientation	0.63	0.70	0.69

Observing the Table 02, we can see that these issues have more consistence, because the results are similar, showing stability issues in the instrument. We can also see that we had only three results above of 0.80; in the Issue 02 and Issue 05 for task orientation in the Muay-Thai modality.

One explanation for the low consistency of *Cronbach's Alpha* identified for the evaluation of ego might be related to motivational characteristics. The instrument used in this study (TEOSQ) identifies only if the motivation is intrinsic character (task) or extrinsic (ego). The behavior related to physical exercise has identified different settings of motivation, and four types of motivations are extrinsic character (regulation by external factors) and only one of intrinsic character (internal regulation) [21, 22].

Therefore, it was expected that Cronbach's alpha is smaller for the assessment of the direction of the ego when compared to task orientation in most cases. The lower *Cronbach's Alpha* from ego relatively to task orientation can be found in others

studies of our groups [15, 16, 27, 28]. However, the Ego value can be more consistent or so the task in other samples [19, 24, 27] this may be related to the different settings of the motivation for the samples.

Table 2: Results of Alpha of TASK Orientation, if Item of the Scale was deleted

Item Of The Scale	Jiu-Jitsu	Muay-Thai	Total
	<i>a</i>	<i>a</i>	<i>a</i>
Issue 02	0.84	0.75	0.79
Issue 05	0.86	0.75	0.80
Issue 07	0.87	0.82	0.84
Issue 08	0.88	0.83	0.86
Issue 10	0.85	0.80	0.81
Issue 12	0.88	0.82	0.84
Issue 13	0.87	0.80	0.83
Task Orientation	0.88	0.82	0.85

The second part of the analysis was to find the results that the instrument proposed to measure, so the goals orientation of the athletes. Observing table 03 we see that the athletes from the

Jiu-Jitsu has predominance in the guidance to the task as we can see in the median results. Male also has an over result in Jiu-Jitsu. Nevertheless, referring to the ego is remarkable a tendency of Muay-Thai athletes present a higher result. Another noteworthy result is that the entire mean in men are higher.

The results indicate that the sample, both men as women, practice these methods of autonomic way (self-choice), they probably give them feelings of fun and self-efficacy [21]. However as it is a convenience sample (not a group that underwent intervention or made a follow-up) more studies are needed to determine if these modes can develop these types of motivation (task orientation) in its practitioners, or are related to practice mastery [24].

Regardless of these modalities influence whether or not these results (influence the motivational regulation to practice through the process feedback) results indicative of this (i.e., Individuals highly task-oriented) show that these individuals should have their activities mainly oriented to self-overcoming [21].

Table 3: Mean, Standard Deviation, Median, Score of each Fight of TASK and EGO Orientation

Orientation							
Fight	Gender	TASK			EGO		
		Mean	Med.	Score	Mean	Med.	Score
Muay Thai	Male	4.34±0.72	4	30.44	2.85±1.08	3	17.11
	Female	4.32±0.86	5	30.25	2.37±1.37	2.5	14.25
	TOTAL	4.28±0.77	4	30	2.70±1.19	3	16.23
	<i>P</i>	0.43			0.07		
Jiu Jitsu	Male	4.73±0.58	5	33.16	2.34±0.99	2	14.08
	Female	4.09±0.83	4	28.66	1.77±1.06	1.5	10.66
	TOTAL	4.60±0.68	5	32.26	2.33±1.02	2	13.40
	<i>P</i>	0.03*			0.01*		

* Significant difference

Finally comparing the average of the results was not identified significant differences between the average male and female ego ($p=0.07$) and to task orientation ($p=0.43$) in Muay-Thai, but comparing the average between male and female of the Jiu-Jitsu fighters in task orientation, men are more task oriented ($p=0.03$), and also in ego orientation ($p=0.01$).

However, given the low number of subjects in our sample another study with a larger sample is needed to we take more assertive conclusions. For example, studies with different sports, evaluated by our group [20, 25, 26] and systematic physical exercise evaluated by another group [24] present data similar to this study (women have a lower value of regulatory motivation extrinsic). This phenomenon needs more study, because the key role of motivational factor relative to engagement and retention in the practice of physical exercise [21].

These results indicate that drivers of sports practices must guide their practices differently when we consider the genre. In other words, these Brazilian studies [20, 24, 25, 26] indicate that men tend to self-evaluate from external parameters, this can make a larger withdrawal in this public if the practice is overly driven by ego [24]. On the other hand, every motivation is valid when thinking about engaging in some kind of activity [21], i.e. the Brazilian men tend to engage more than women in sports practices.

Comparing all the results of ego orientation, there is a significant difference between the Muay-Thai and Jiu-Jitsu ($p=0.003$), so in Muay-Thai they are more ego oriented. For the task orientation, there is a significant difference ($p=0.002$), but reversed, showing that athletes from Jiu-Jitsu are more task Oriented.

There will require new approaches (e.g. approach of sample comparisons of the same modality or follow-up) to identify the modality promotes changes in the motivational profile or individuals with different motivational profiles look different sports. A recent study [23] observed in a group of street racers that motivational profile was no different even considering the practice time.

Another study from our group [27] which compared two samples of footballers belonging to different social classes also did not find differences in motivational orientations them. However, we know that motivation is not something tight and it can be altered by the daily life experiences, that is, thinking about sports activities, the motivational orientation is conditioned by the quality of their practice [21, 23, 24]. In this sense, we cannot say whether the differences between the methods studied in this work can be linked to the practice environment or the sport itself, therefore, more studies are needed to clarify this phenomenon.

We can conclude that men are more prepared for fight engagement than women mainly in Muay-Thai are, because the ego average is superior then the other women fighters. The instrument has a good performance, but we need to pay attention in the Issues from ego orientation, looking for a new design for the questions, improving the content of the issues.

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