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Flow predisposition in Brazilian rugby athletes

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ORIGINAL ARTICLE

ABSTRACT

Flow describes a mental state in which people seem to flow when they demonstrate a productive and motivated effort. This study sought to understand the significance that rugby athletes attribute to the flow state, the perception of the phenomena in the sports practice and the implications on performance. For that, 8 male athletes participated in the study, representing the juvenile and adult teams submitted to a semi-structured interview. The results indicated that flow occurs in situations that present balance between personal skills and challenges in sports activity. Success in the game, positive emotions, support/encouragement, recognition and overcoming were aspects that marked the experience elected as special. Making use of psychological strategies, high levels of concentration, feeling prepared for the game and positive emotions were cited as fundamental in achieving flow in the game. On the other hand, some aspects, besides causing harm, interrupted the flow: negative emotions, not perceiving one's self as prepared for the challenge, concentration problems, intragroup difficulties. Negative emotions and the feeling that one is not prepared for the challenge were aspects mentioned only by juvenile athletes. The athletes´ speech showed that although they could not describe the flow, they had already experienced this psychological state.

Keywords: sports psychology, flow, rugby

INTRODUCTION

Flow state concept, structured in the 1970s by psychologist Mihaly Csikszentmihalyi, is described as an optimal mental state in which athletes and physical activity practitioners are totally involved in what they are doing so that there is a total involvement with the task (this happens almost automatically) and theirs actions, feelings and perceptions are experienced in a positive way, and they reach a good performance (Jackson & Csikszentmihalyi, 1999).

According to Csikszentmihalyi (1990), the flow state is composed by a set of nine dimensions that came to conceptualize this subjective experience, some may be more relevant than others depending on the activity carried out (Jackson & Eklund, 2002). They are: (1) *Balance between challenges and skills:* it occurs when a task is performed with a satisfactory level of complexity, and the difficulty level is in accordance with the psychophysical ability of the individual (Csikszentmihalyi, 1990; Gomes, Leite, Pedrinelli, Ferreira, & Brandão, 2012); (2) *fusion between action-awareness:* when participation in the activity is so deep, that it is spontaneous or automatic (Jackson & Marsh, 1996) allowing the subject to not see himself as separate from the activity being performed (Gomes et al, 2012; Jackson & Marsh, 1996); (3) *clear goals:* the subject shows clarity on what will be performed (Jackson, 1992; Jackson & Marsh, 1996) demonstrating accurate knowledge of what should be done throughout every moment of the task (Gomes et al, 2012); (4) *immediate and unambiguous feedback:* it is clearly received by the individual, usually based on the activity itself, enabling the person to be aware that the result of a certain goal is being achieved (Jackson & Marsh, 1996). When information is not presented in a satisfactory and positive manner, feedback can be adjusted to guarantee the person's permanence in the flow, as the person does not need to interrupt the task being performed to reflect on their performance at the time, the information arises in

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an integrated manner with the implementation during the entire time (Jackson & Csikszentmihalyi, 1999); (5) *concentration on the task:* attention is directed exclusively to the activity, so that there is no deviation to any other outside stimulus (Gomes et al., 2012). Full involvement with the task requires a high level of attention (Gomes, 2010), causing the consciousness to select important information and temporarily delete elements considered irrelevant for the moment (Csikszentmihalyi, 1990); (6) *perception of control:* it is related to the sense of control that the individual has in face of a certain situation (Jackson, 1992), and they realize that the skills they have are consistent with those required to perform the task, and that they have control over their body and mind (Csikszentmihalyi 1990; Oliveira & Miranda, 2015), discarding feelings such as fear, failure and tension, by becoming confident for the implementation of the activity (Gomes et al., 2012).; (7) *Loss of self-consciousness:* it is characterized when a person experiences the feeling of oneness with the environment and becomes totally absorbed by what they are doing (Gomes et al., 2012; Jackson, 1992); (8) *Transformation of time:* the individual has a feeling of time acceleration or delay (Jackson & Marsh, 1996); (9) *Autotelic experience:* in addition to being considered rewarding, it is characterized by the performance of an activity for the sake of one's own benefit (Jackson & Marsh, 1996), in this case, the actual execution of the activity becomes rewarding (Csikszentmihalyi, 1990), precisely because of the strong relationship with the pleasure and motivation which are intrinsic to the individual with the task (Gonzalez-Cutre, Sicilia, Moreno, & Fernández-Balboa, 2009).

In psychology, this phenomenon has been used to describe the intrinsically rewarding experience that people may experience during an activity. The flow state is achieved when all contents of consciousness are in harmony with each other and with the objectives set by the person to perform a certain task (Csikszentmihalyi & Csikszentmihalyi, 1988). Studies have shown that situational and personal characteristics affect the quality of experience (Stavrou, Zervas, Karteroliotis, & Jackson, 2007), in particular, because the flow state is related to the perception that the individual have of the existing challenges in the task and the perception of his personal skills (Csikszentmihalyi, 1990).

When developing his research, Csikszentmihalyi (1990) noticed that structured situations with clear goals made it easier for the individual to enter a flow state, and this factor, in particular, has made the researcher believe that games and sports activities could facilitate the optimal experience for athletes, precisely for presenting clear situations about what should be done, requiring more concentration and involvement in the task. Later, Jackson and Marsh (1996), confirmed the relationship of flow and sports with important concepts: motivation, maximum performance and pleasure. However, the factors determining the flow experience could be distinct in different sports contexts (Jackson, Kimiecik, Ford, & Marsh, 1998; Young & Pain, 1999). The challenges of competition and athlete's skills are two subjective variables that may have a dependent or an independent effect on the quality of experience (Stavrou et al., 2007), because, before or during the competition, the level of challenge and skill are dynamic in nature, depending on individual quality (time of experience, mental preparation, physical preparation) or situational characteristics (the importance of competition, the opponent, etc.). In this sense, some aspects are crucial and were pointed out by athletes of competitive level sports as facilitators for the flow experience. Among them, physical and mental preparation, level of confidence, focus on the task, perception of progress and performance, ideal motivation and excitement level (Jackson, 1992, 1995; Russell, 2001). On the other hand, factors such as: lack of motivation, low activation and lack of pre-competition preparation were aspects indicated as uncontrollable and harmful to achieving this psychological state (Jackson, 1995; Russell, 2001). In addition to these aspects, the flow process may be impaired when there is negative feedback during the activity. This usually occurs when the athlete focuses his/her attention on mistakes instead of the positive aspects. The effect may be an increase in errors during sports activities as the athlete no longer focuses on

information that is important to the progress of his/her actions toward the goal and the desired performance, which leads to a lower flow experience (Jackson, Thomas, Marsh, & Smeturst, 2001). These data (positive or harmful) demonstrated that players consider the flow as a state that is based on a set of controllable factors. However, control, in particular, may be related to the high level of sporting ability of the athletes (Jackson, 1995; Oliveira & Miranda, 2015), thus, perceptions of competence indicate a feeling that the person has the ability to be effective in a sport, demonstrating that flow is characterized by a positive balance between challenge and skill, clear objectives, and a sense of control over the sports activity (Hodge, Lonsdale, & Jackson, 2009; Oliveira & Miranda, 2015).

Because of the relationship between flow and sports (Jackson & Marsh, 1996), this research aimed to evaluate, based on the content analysis, how athletes of the Brazilian Rugby Team, both from the juvenile and adult teams, perceive the phenomenon.

METHOD

Sample

The study included eight male athletes from the Brazilian Rugby Team, representing juvenile and adult teams. As the objective was to assess how these athletes perceive the flow in their sports practices and to identify the differences between the teams, the sample was divided into two groups, namely: *Group I:* four athletes with 18 years in average and mean time of experience in the modality of 5.5 years (± .5774 years of experience), known as the "Juvenile Team", and identified with the following acronyms: J1; J2; J3; J4. *Group II:* four athletes with average age of 23.5 years (± 3.0 years) and mean time experience in rugby of 7.2 years (± 4.3493), known as the "Adult Team", and identified with the following acronyms: A1; A2; A3; A4.

The subjects were drawn through a simple random selection process. It was used a table of sequential numbers individually associated to the athletes´ names, made through an electronic draw performed by the Excel program. Athletes drafted for the teams during the first trimester of 2014, excluding those drafted that by any chance were physically injured.

Instruments

Individual interviews were chosen for data collection, which was structured from a general questionnaire named "Interview Guide". The instrument, based on the format used in other studies on the flow (Csikszentmihalyi, 1990; Gomes, 2010; Jackson, 1995) was structured with the intention to provide a qualitative analysis of the perception of athletes on the factors associated with the flow state in their sports. The athletes were asked to describe a great experience while playing rugby, where they had given a performance that was superior to average and was personally satisfying. During the interview, athletes were encouraged to describe the most striking aspects of the experience, as well as the factors considered as favourable, and the factors responsible for preventing or interrupting them from achieving the flow. Familiarity with the concept and perception of control over this psychological state were also investigated.

Procedures

The research project, which originated this paper, was previously approved by the Research Ethics Committee of the São Judas Tadeu University (Protocol #43/11), the Brazilian Confederation of Rugby (CBRu) was contacted, and through a Liability Waiver, authorized the research. The participants Free and Informed Consent Form - FICF, meeting the ethical standards set forth in Resolution 466/12 of the National Health Council, of the Ministry of Health for research conducted on human subjects in Brazil. Interviews were conducted at the Training Centre of the respective teams in a room that was appropriate for this activity. The average time for completion of each interview was twenty minutes. All interviews were registered with the use of a recorder (Model: Sony ICD-PX333).

Analysis of the Interviews

Data analysis was conducted according to the procedures recommended by Miles and Huberman (1994) consisting of the following steps: a) word for word transcription (verbatim)

of the answers reported by the athletes, without any interpretation, for the purpose of having an overview of all propositions, and getting a sense of the reports provided by the subjects; b) exhaustive reading of the interviews in order to be completely familiar with them; c) at the time of the study's first projections, choices were made regarding the proposed objective of the study which led to a first selection of relevant information, choosing phrases or statements as the registration unit; d) data reduction, through the application of an encoding system. Subsequently, the statements and claims with common characteristics were gathered in the same analysis category; e) to ensure validity, the researcher presented the other two judges (Master and PhD in Psychology) with phrases and statements collected in interviews, which gave rise to the response categories. Statements within the same category of those made by the judges with a concordance rate of 75% (researcher-defined value), were accepted for analysis purposes. This step ensured greater suitability in category classification.

RESULTS

The Interview Guide, proposed as a tool, guided athletes to speak on four major themes, namely: (1) the most striking aspects of the sporting experience chosen for having achieved the best individual performance or for having obtained satisfactory results; (2) factors that favour the flow to arise during the performance; (3) factors that are harmful to the performance; and (4) familiarity with the term flow. Through the procedure used, a total of 95 registry units for all investigated subjects was obtained, and the analysis of the judges validated 83 units, considering the 75% agreement rate of the collected material. From the data we had categories of answers for each theme, and to illustrate them, we have some textual affirmations of the interviewed athletes that were described. For better understanding, the results were also presented in table (1) as follows:

1. *Most striking aspects of the experience:* they are represented by factors that made the game special, either because of the player's performance, or due to other aspects that contributed to this experience standing out from the others. This theme constituted the following categories**:**

(a) Success in the game (to achieve personal success in the game is to achieve positive results, or perform technical movements correctly);

> *"Their team (the opponent) was a good team and I managed to make several plays that looked right and made all of the kicks, and it was the first game of the championship. I was pretty good in defence, too! I did some nice tackles!" (J4).*

(b) Positive emotions (emotions directed at personal achievement at the expense of the sports performance);

> *"I didn't have too much pressure on me because, at the time, there was no reason for it. I played with joy and vivacity! I played for fun, which is the basis of rugby. I was really having fun, so I didn't have a guilty conscience, nothing, and it just came out naturally…" (J2). "The game was perfect. I left very satisfied with my work. The feeling of performing a perfect job, a sense of accomplishment, and that I did what I could. I gave my all, and was concentrated to the fullest..." (A4).*

(c) Support and encouragement (support from family and fans during sports);

> *"I think that one thing that worked very well, besides the crowd that was on the field, was family, the people there that gave us a lot of support…" (J1).*

(d) Recognition (recognition from team mates and coaches for a good performance in the game);

> *"Having been chosen by my fellow team players as best player of the match" (A3).*

(e) Overcoming (feeling of having overcome opponents who were more capable, or a certain personal adversity);

> *"I did my best… I had an idea of what I had to do and I tried to do what I thought I should. And by doing so, I managed to give a good performance. That was overcoming in its very definition! I think that, psychologically, you have to isolate yourself and focus. You focus, you think about giving your best. And I think that's the psychological strategy that was used, focusing! Happiness, achievement and, I think work, a feeling that I got to do what I wanted." (J2).*

Table 1

Themes and answers by rugby athletes

Themes investigated	Types of answers				
Most striking factors of the experience	Success in the game	Positive emotions	Support and encouragement	Recognition	Overcoming
	To obtain personal success in the game, be it by reaching a positive result or for executing technical gestures correctly	Emotions drive more to personal achievement than to the sportive performance	Familiar and fans support during the sportive experience	Recognition from team mates and coach for the good performance in the game	Feeling of overcoming better competitors or some personal adversity
Team presenting these answers	Juvenile and Adult	Juvenile and Adult	Juvenile	Juvenile and Adult	Juvenile and Adult
Factors favouring the optimal experience	Psychological strategies	High level of concentration	To be prepared for the game	Positive emotions	
	This refers to the following strategies: preview, key-word, breath control, routine planning in the day of the game and game goals used to reach what was planned for the game	Totally focused in the details of the game, excluding external stimuli	To perceive that he was physical, technical, tactical and psychologically prepared for the game, giving the previous certainty that he would have a good performance in the game	Emotions that stimulate the player to have confronting positive attitudes	
Team presenting these answers	Juvenile and Adult	Juvenile and Adult	Juvenile and Adult	Juvenile	
Unfavourable factors for optimal experience	Negative emotions	Concentration issues during the game	Do not perceive himself as prepared for the challenge	Intragroup difficulties	
	Experiencing opposite emotions regarding the same phenomenon: anxiety, nervousness and fear	Focusing in stimuli not relevant for the game	Not perceiving one's self as being prepared for the challenge having the feeling that the skills they have are below those required for the challenge, in particular, lack of physical or technical preparation, or when the player has an injury);	Conflicting relationship aspects and or strategies of action for the challenge among the team players	
Team presenting these answers	Juvenile	Juvenile and Adult	Juvenile	Juvenile and Adult	
Familiarity with the "flow" concept	Knowledge about the concept of flow		Knowledge about the concept of flow from explanation		
	Understanding about the aspects of the state of flow		Understanding about the state of flow from the explanation of the concept during the interview		
Team presenting these answers	Adult		Juvenile and Adult		

2. *Factors that made it a great experience:* The factors considered by athletes as being favourable for good sports performance during the experience, as follows:

(a) Psychological strategy (strategies include: preview, keyword, breath control, routine planning for the day of the game and game goals employed to achieve what was planned for the game);

> *"I used goals a lot, that was a strong point. I have the habit of writing things and pasting them on the room wall. Goals according to the games schedule and the skills I had to improve. During the game, one thing that really helped was breathing… I set a goal a while ago. I said: "I have to be working on this because at the time of the game I know I'll need it…" (J1). "Actually, it was mostly mental. I thought a lot about the game, outside matters don't distract me that much… I imagined the plays and what I would do before a game, a pass or try. I thought about plays I was going to make. I made plays in my head. I made a game happen before the actual one. It was like there was nothing else in my mind, just the game. I was entirely in the game…" (A1). "I visualize. It's as if I were watching my own game. I analyse the decision-making possibilities, if when I receive the ball I can make way for a pass. I try to imagine the possibilities and try to visualize. I think something else that can*

help is keeping that table with the checklist for the day of the game…" (A4).

(b) High level of concentration (keeping attention fully focused on the details of the game, excluding external stimuli)*;*

> *"I get in the game and stay in the game" (A2). "I spent most of the time remembering what I should do. I went into the game really focused and what helped a lot was the fact that the coaches showed us what had to be done with visual props... and that reinforces the information I already have" (A4).*

(c) Be prepared for the game (having the perception that I was physically, technically, tactically and psychologically prepared for the match, allowing us to feel confident from early on that we would have a good performance in the game);

> *"I was feeling pretty good before it began because I knew I was in much better physical and technical form and that I was above any other player on the other team. I already began the game feeling good! Knowing that I was going to lead things there, and that my experience had allowed me to adjust to things in the best way, just by taking a look! If anything was going wrong I would be able to fix it. Explaining how it should happen or organizing the team" (J4).*

(d) Positive emotions (emotions that stimulate the player to have positive coping attitudes);

> *"Sense of confidence... Another thing is self-esteem. I think it increases. I can perform things better, I don't get scared, afraid. I can do what I think can be done. And it works!" (J4).*

3. *Non-favourable factors for a great experience:* unfavourable aspects that are also likely to promote loss in the range of the flow experience during sports practice. The discourse of athletes on such aspects constituted the following categories:

(a) Negative emotions (experiencing emotions that contradict the same phenomenon, such as anxiety, nervousness and fear);

> *"When we were going into the field, we were scared because it was something unknown. We didn't know what the game was going to be like..." (J1).*

(b) Concentration problems during the game (attention dispersion due to' stimuli that is irrelevant to the match)*;*

> *"I think we end up losing focus within in the field very easily because we're tired, or because someone says something. Someone screaming from outside of the field. Specially because it was a game that had a crowd" (J1). "I believe that what might get in the way is being dispersed, thinking about something I shouldn't be thinking about, thinking about the past, the mistakes made and not about the next step and what I have to do. We should be thinking about is what we can control…" (A4).*

(c) Not perceiving one's self as being prepared for the challenge (having the feeling that the skills they have are below those required for the challenge, in particular, lack of physical or technical preparation, or when the player has an injury)*;*

> *"I don't really know if it's a matter of difficulty during the game. I think it's mostly just difficulty in continuing the work we did before the game. In the physical work, there are things I have to improve technically because I've had one injury after the other. I've played rugby for over five years, and there have been times when I've had a lot of lesions" (J4).*

(d) Intragroup difficulties (different relationship aspects and / or action strategies for the challenge among group members);

> *"Either everyone's screaming, or nobody's talking about the game..." (J1). "we agree to meet in the field to run at a certain time, then everyone's late and I already get a little angry because of that. Maybe that could get in my way" (A3).*

4. *Familiarity with the concept of "flow"* refers to the domain of the flow state concept presented by the surveyed athletes. This theme was represented by two categories of answers, which are:

(a) Knowledge of the flow concept (understanding on aspects of the flow state);

> *"It occurs when you forget everything that's going on outside and just think about what is happening there at the moment…" (A2).*

(b) knowledge from the explanations of the flow concept (understanding of the flow state based on the explanation of the concept during the interview).

> *"I knew there was a peak for athletes, but I didn't really know the name, the concept. But, I know there is a peak when the athletes give their all. That an athlete... can do whatever they need to do, improve any deficiency during a game…" (J4).*

DISCUSSION

The purpose of this study was to conduct a qualitative investigation about the meaning of the flow state and the perception of the phenomenon that the Brazilian Rugby Team athletes attribute to sports practice. For athletes, the success in the game, resilience, positive emotions, support/encouragement and recognition were

the aspects that stood out in the sports experiences chosen as those most special during the course of their rugby experience. The results strengthened the concept of the Flow Theory proposed by Csikszentmihalyi (1975, 1990) as players demonstrated they achieve the flow state from intense involvement in an activity without any obvious external reward. Positive emotions and the feeling of overcoming indicated that athletes were engaged in an activity that, in addition to providing a challenge (Elbe, Strahler, Krustrup, Wikman, & Stelter, 2010), provided intrinsically rewarding feelings (Csikszentmihalyi, 1990, Oliveira, Gomes, & Miranda, 2015). Positive emotions, in general named as autotelic experience (Csikszentmihalyi, 1990), were also mentioned in the studies of Oliveira and Miranda (2015) and Gomes (2010), conducted respectively with basketball and volleyball athletes, as one of the flow aspects more experienced in the sports practice, indicating their relevance for the flow experience.

Apparently, completing the game successfully and performing techniques correctly allowed the athletes to consider themselves as having achieved success in the game, regardless of actually winning. Moreover, the feeling of overcoming demonstrated that even if the challenge is, at times, a "high-level" challenge, athletes had appropriate skills to deal with the situational demands. According to Csikszentmihalyi (1990), the way athletes perceived the relationship between challenge and skill was crucial both for determining the moment they entered a flow state, and enabling the sense of control over the body and mind. In this case, it was not the feeling of being in control which was appreciated, but the feeling of power for exercising control in difficult situations, as happened with the athletes of this study. When the feeling was achieved, the sensation, for some athletes, was that of being able to carry out the task with no room to imagine errors (Jackson & Marsh, 1996), let alone to experience feelings such as fear, failure and tension. This was possible especially because of the confidence felt when performing the activity (Gomes et al., 2012). By controlling the elements involved in the sporting experience (clear goals, concentration, immediate feedback, etc.) people tend to have greater control over their mental experiences, improving the quality of experience, which contributes to greater engagement through the feeling of satisfaction involved (Hodge, et al., 2009; Massarella & Winterstein, 2009; Oliveira et al., 2015).

According to the data obtained from the interviews, positive emotions were included in the list of most striking aspects of the experience. Happiness, joy and satisfaction showed the pleasure of athletes when playing in the game. It seems that the feelings were inherent to the rugby game, making the execution of the activity rewarding in itself, as described by Csikszentmihalyi (1990) to define the flow. Similar results had been found in research with people who practiced mountain climbing and downhill skateboarding (Vieira, Baldim, Pimentel, Hassumi, & Garcia, 2011), and people who practiced basketball (Oliveira et al., 2015; Oliveira & Miranda, 2015), demonstrating that the high level of personal satisfaction, pleasure or other intrinsic reasons were also cited as important to the performance of the sports activity. Although autotelic experience is considered one of the most relevant characteristics of the flow (Csikszentmihalyi, 1990; González-Cutre et al., 2009; Nakamura, & Csikszentmihalyi, 2002), studies by Jackson and Marsh (1996) showed low levels for athletes of competitive teams, indicating that the sense of fun and happiness are less important than other aspects. At the time, some hypotheses were considered and, among them, the fact that fun and happiness are not "well viewed" in this environment, and, the possibility of competitive sports having goals, causing the enjoyment or fun to be seen as something unethical given the commitment required in competitive sports. Although the data found in this research with the rugby athletes counteract the results achieved by Jackson and Marsh (1996), consideration should be given to the fact that the current context of the sport in the country, in particular the fact that athletes from the rugby union are considered officially as amateur players, meaning they are not employed and have no professional benefits. This current condition when playing this sport

allows the personal efforts of the athletes to meet the requirements (physical, technical and psychological) to join the elite team, and be supported in the positive emotions experienced while practicing this sport.

The support and encouragement were only remarkable for the athletes of the juvenile team, who emphasized the importance of support from family and fans in the experience chosen as most special. Recognition was common to both groups surveyed and indicated that having the effort recognized by team mates and coaches after the game was an important aspect of the experience. The same results had been demonstrated in studies by Moreno, Cervelló, and González-Cutre (2010); Bakker, Oerlemans, Demerouti Slot, & Ali (2011), which affirmed that praising efforts made during the games and practice games, recognizing individual progress and receiving guidance in new sports challenges, contributed to the improvement in the athletes´ motivational climate and to the flow experience during the game.

When asked to talk about the positive aspects of their sports experience, athletes indicated that the implementation of psychological strategies, high levels of concentration, feeling prepared for the game and experiencing positive emotions were important factors to the satisfactory completion of the rugby match. According to Jackson et al. (2001), positive associations between psychological strategies and the state of flow highlighted the importance of mental abilities and the flow itself. In particular, the prevention of negative thoughts combined with good emotional control, relaxation, appropriate activation levels, setting goals, use of images and positive self-talk facilitate experiencing the flow. The research conducted by Jackson et al. (2001) showed that statements of athletes on the use of these psychological strategies have helped to explain the variation in the flow experience and contributed to identify significant correlations between the domain of these strategies and the flow experience in the competition. The results of this research were similar and contributed to strengthening the findings of Jackson et al. (2001) and Csikszentmihalyi (1990) by indicating that psychological strategies to mentally visualize the moves, using keywords or positive self-talk, breathing techniques, setting goals and planning the routine of the game were favourable to a great experience. According to Csikszentmihalyi (1990), occasions structured with clear goals, such as sports games and activities, facilitate this kind of experience to present situations that are clear regarding what should be done and require greater concentration of the player at the time of the game. When this occurs, attention is completely absorbed by the task and challenges are aligned with personal skills, the individual reaches an organized state of consciousness where thoughts, feelings, desires and actions work in harmony (Nakamura & Csikszentmihalyi, 2002), as revealed by the results indicating that the high level of concentration of rugby players was also favourable in this process.

Apparently, full involvement with the task requires a high level of attention (Gomes, 2010) causing the consciousness to select important information and temporarily delete elements considered irrelevant for to the performance of that activity (Csikszentmihalyi, 1990). Jackson and Roberts (1992) found similar results to those found with the rugby players, and concluded that when focusing on the task, the athletes may be more prone to the flow experience because their attention is centred between the subject and the activity, instead of being specifically focused on results. It seems that to maintain this positive synch with the task, excluding irrelevant thoughts, rugby players demonstrated signs of mental strength, as indicated by the studies of Jackson and Csikszentmihalyi (1999). Other studies with competition level sports, indicated that, besides the high level of concentration, the fusion of action-consciousness and perceived control were important, and made it easier for athletes to reach the flow state (Jackson, 1996; Jackson & Marsh, 1996; Koehn, Pearce, & Morris, 2013; Miranda, Russo, & Coimbra, 2012).

Being prepared for the game seems to be a determining factor for the rugby athletes. Apparently, the sum of aspects such as performing techniques correctly, being in good physical shape, being psychologically prepared, knowing what to do during the match, having

experience in the sport and having the conviction that they would perform well in the match, allowed athletes to feel they were prepared to meet the challenges of the game. Similar results were found in previous studies (Jackson, 1992; Russell, 2001; Oliveira & Miranda, 2015) and demonstrated that feeling physically and mentally prepared for a match also proved to be essential for athletes participating in competitive sports. It is observed that athletes who believe in their abilities are more likely to experience a balance between challenge and skill, even when the challenge of a sporting competition is relatively high (Jackson et al., 1998). Thus, the data from this study and others cited make it possible to consider that the way the athlete evaluates their preparation for a match can have positive or negative influence in achieving the flow, however, feeling confident in the skills they have is an essential condition for reaching this state (Jackson, 1992, 1995).

Positive emotions were only mentioned as an important part to achieving the flow state for the members of the juvenile team. For them, the fun, calm in face of the challenge, feeling confident and having high self-esteem contributed to the full implementation of the game. The relationship between positive emotions and flow state were also observed in other research in the sport (Jackson & Marsh, 1996; Pates & Maynard, 2000; Vieira et al., 2011), in particular, the high level of personal satisfaction, pleasure or other intrinsic reasons (Vieira et al., 2011) are very important to achieve the experience of flow in the sport. According to Csikszentmihalyi (1975), the flow occurs regardless of reasons or external rewards, the feelings experienced are associated with the pleasure of being involved in the activity itself (Brandão, Serpa, Krebs, Araújo, & Machado, 2011).

The research sought to investigate not only the psychological aspects that could positively influence the great experience during sports practice, but aspects that could negatively impact the extent of that experience. From the speeches, it was observed that negative emotions, problems to maintain concentration during the game, not feeling up to the challenge and intragroup difficulties were indicated as unfavourable aspects for maintaining the flow state during the game. The results revealed differences between the two groups surveyed and indicated that negative emotions and not perceiving one's self as prepared for the challenge were common only to athletes of the juvenile team, however, concentration problems during the game and intragroup difficulties were indicated as harmful factors for both groups, meaning juvenile and adult players.

The perception of favourable or detrimental aspects for achieving the flow experience reinforces Jackson's idea (1995), as the athletes consider the flow as a state that occurs from a set of controllable factors. However, control in particular may be related to the athletes' high level of sporting ability (Jackson, 1995) and the competence perceived to successfully perform the challenges presented by rugby.

Juvenile athletes indicated that anxiety, nervousness and fear are emotions that hurt the flow experience. It seems that these negative feelings were triggered as the athletes realized that the challenges of the match were higher than personal skills. For players, the lack of physical/technical preparation and presence of injuries served to enhance the feeling of not being prepared to face the situations in the game. These results reinforced previous findings (Jackson, 1992, 1995; Russell, 2001) on how feeling ready for the challenge can make a difference in reaching the flow. Among other factors, anxiety comprises the aspects that help to hinder the flow experience. Csikszentmihalyi (1990), had already stated that experiencing high levels of anxiety can impair great psychological experience, as did the results of this research. The set of negative factors such as negative emotions (Elbe et al., 2010), thinking about the mistakes made during the game and irrelevant concerns (Jackson & Eklund, 2002) can contribute to the athlete having greater difficulty in focusing on the challenges of the game.

The intragroup difficulties appeared as one of the significant factors in the disruption of the flow state among rugby athletes. For them, the lack of commitment from teammates and difficulties in communication at the time of the game may harm the great experience. The results

were important to demonstrate that in rugby, individual performance appears to be insufficient to ensure the flow. So, even if the athletes have the essentials for a great experience, the internal relationship between team members can improve or harm the state of flow. The results of this research with athletes added to the conclusions of Bakker et al. (2011) with athletes in team sports.

The athletes' speeches showed that, although favourable factors for the state of flow were experienced during the rugby match, players showed they were unfamiliar with the concept of the phenomenon. Only one of the athletes of the adult team showed partial understanding of the state of flow. However, all other reports indicated that the experiences elected as the most professionally satisfying, were built with elements common to the state of flux, for example, the high level of concentration, high degree of satisfaction and perception of control, as Csikszentmihalyi (1975) defined when initially describing the flow experiment.

CONCLUSION

Success in the game, overcoming challenges, positive emotions, resilience, support/encouragement and recognition were aspects cited by both groups and strengthened the main flow theory concept by establishing the experience as pleasant and successful, meaning that, even if the challenge were, at times, of a "high level", the athletes had appropriate skills to deal with the situational demands of the game. Support/incentive was only relevant to young athletes. Psychological strategies, high levels of concentration, feeling prepared for the game and positive emotions were appointed favourable to the flow experience, indicating that experiencing feelings of pleasure and joy during the rugby game facilitated a great psychological condition. Previously visualizing plays, setting goals, using breathing techniques, using the keyword, being able to focus exclusively on stimuli that is relevant to the game, and realizing they are prepared to meet the challenges also contributed to the flow experience. Apparently, the conviction of possessing skills (physical, technical, tactical and psychological) to meet the challenges of the game and use of psychological strategies was essential for athletes who managed to maintain the high level of concentration. On the other side, negative emotions, concentration problems during the game, being prepared for the challenge and intragroup difficulties impaired the achievement of the state of flow during sports practice. These results reinforced the idea that the experience of flow may be impaired or interrupted if the athletes experience anxiety, nervousness and feelings of fear.

Finally, although most of the players did not know how to describe the flow phenomenon, they had already experienced this great psychological condition. Such information about the state of flow in competitive athletes could show sports professionals, especially psychologists engaged in psychological preparation of rugby athletes, information that is more comprehensive regarding the psychological skills involved in experiences that have a high level of personal satisfaction and the relationship between the phenomenon and the sport performance. Further studies, with other rugby samples, can verify the differences and similarities of the characteristics found in the flow experience, under new analysis conditions.

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REFERENCES

Brandão, R., Serpa, S., Krebs, R., Araújo, D., & Machado, A. A. (2011). El significado del arbitrar: percepción de jueces de fútbol profesional. *Revista de Psicología del Deporte, 20*(2), 275-286.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Josey-Bass.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: Happer Perennial.

Csikszentmihalyi, M. (1999). *A descoberta do Fluxo: a psicologia do envolvimento com a vida cotidiana.* Rio de Janeiro, RJ: Rocco.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (1988). *Optimal experience: psychological studies of flow in consciousness*. New York, NY: Cambrigde Universty Press. Australia.

Elbe, A. M., Strahler, K., Krustrup, P., Wikman J., & Stelter, R. (2010). Experiencing flow in different types of physical activity intervention programs: three randomized studies. *Scandinavian Journal of Medicine & Science in Sports, 20*(1), 111-117. doi: 10.1111/j.1600-0838.2010.01112

Gomes, S. S. (2010). *Quando o jogo flui: uma investigação sobre a Teoria do Fluxo no Voleibol* (Dissertação de mestrado). Universidade Federal de Juiz de Fora, Minas Gerais.

Gomes, S. S., Leite, G. S., Pedrinelli, V., Ferreira, R., & Brandão, R. (2012). Fluxo no para-atletismo. *Motricidade, 8*(2), 985-992.

Gonzáles-Cutre, D., Sicilia, A., Moreno, J. A., & Fernández-Balboa, J. M. (2009). Dispositional flow in physical education: Relationships with motivational climate, social goals, and perceived competence. *Journal of Teaching Physical Education*, *28*, 422-440.

Hodge, K., Lonsdale, C., & Jackson, S. A. (2009). Athlete engagement in elite sport: An exploratory investigation of antecedents and consequences. *The Sport Psychologist*, *23*, 186-202.

Jackson, S. A. (1992). Athletes in flow: a qualitative investigation of flow state in elite figure skaters. *Journal of Applied Sport Psychology*, *4*(2), 161-180. doi:10.1080/10413209208406459

Jackson, S. A. (1995). Factors influencing the occurrence of flow state in elite athletes. *Journal of Applied Sport Psychology*, *7*(2), 138-166. doi: 10.1080/10413209508406962

Jackson, S. A. (1996). Toward a conceptual understanding of the flow experience in elite athletes. *Research Quarterly for Exercise & Sport, 67*(1), 76-90. doi: 10.1080/02701367.1996.10607928

Jackson, S. A., & Roberts, G. C. (1992). Toward a conceptual understanding of peak performance. *The Sports Psychologist*, *6*(2), 156-171. doi: 10.1080/02701367.1996.10607928

Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: the flow state scale. *Journal of Sport & Exercise Psychology*, *18*(1), 17-35.

Jackson, S. A., Kimiecik, J. C., Ford, S. K., & Marsh H. W. (1998). Psychological correlates of flow in sport. *Journal of Sport & Exercise Psychology*, *20*(4), 358-378.

Jackson, S. A., & Csikszentmihalyi, M. (1999). *Flow in sports: the keys to optimal experiences and performances*. Champaign: Human Kinetics.

Jackson, S. A., Thomas, P. R., Marsh, H. W., & Smeturst, C. J. (2001). Relationships between flow, self-concept, psychological skills, and performance. *Journal of Applied Sport Psychology*, *13*(2), 129-153.

Jackson, S. A., & Eklund, R. C. (2002). Assessing flow in physical activity: The Flow State Scale-2 and Dispositional Flow Scale-2. *Journal of Sport & Exercise Psychology*, *24*, 133-150.

Koehn, S., Pearce, A. J., & Morris, T. (2013). The integrated model of sport confidence: a canonical correlation and mediational analysis. *Journal of Sport & Exercise Psychology*, *35*, 644-654.

Massarela, F. L., & Winterstein, P. J. (2009). A motivação intrínseca e o estado mental flow em Corredores de Rua. *Movimento*, *15*(2), 45-68.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook*. Thousand Oaks: SAGE Publications.

Miranda, J., Russo, A. F., Coimbra, D. R., & Miranda, R. (2012). Análise do flow-feeling no tênis. *Revista de Educação Física, 23*(4), 607-615. doi: 10.4025/reveducfis.v23.4.17044

Moreno, J. A., Cervelló, E., & Gonzáles-Cutre, D. (2010). The achievement goal and self-determination theories as predictors of dispositional flow in young athletes. *Anales de Psicologia, 26*(2), 390-399.

Nakamura, J., & Csikszentmihalyi, M. (2002). The Concept of flow. In Snyder, C. R. & Lopez, S. J. (Eds.), *Handbook of Positive Psychology* (pp. 89-95). New York: Oxford University Press.

Oliveira, H. Z., Gomes, V. F. P, & Miranda, R. (2015). O estado flow em jogadores jovens de basquetebol. *Psicologia em Estudo*, *20*(1), 95-106. doi: 10.4025/psicolestud.v20i1.25529

Oliveira, H. Z. & Miranda, R. (2015). O estado de flow no basquetebol em categorias de base: uma análise da interferência da idade e do tempo de prática. *Revista Educação Física, 26*(1), 89-96. doi: 10.4025/reveducfis.v26i1.23041

Pates, J., & Maynard, I. (2000). Effects of hypnosis on flow states and golf performance. *Perceptual and Motor Skills*, *91*, 1057-1075. doi: 10.2466/PMS.91.7.1057-1075.

Russell, W. D. (2001). An examination of flow occurrence in college athletes. *Journal of Sport Behavior*, *24*(1), 83-107.

Stavrou, N. A., Zervas, Y., Karteroliotis, K., & Jackson, S. A. (2007). Flow experience and athletes´ performance with reference to the Orthogonal Model of Flow. *The Sport Psychologist*, *21*, 438-457.

Vieira, L. F., Baldim, G. M., Pimentel, G. G. A., Hassumi, M. Y. S. S., & Garcia, W. F. (2011). Estado de fluxo em praticantes de escalada e skate dowhill. *Revista Motriz*, *17*(4), 591-599.

Young, J. A., & Pain, M. D. (1999). The zone: Evidence of a universal phenomenon for athletes across sports. *The Online Journal of Sport Psychology, 1*(3), 21-30.