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Impact of adhesion reasons in the motivational regulation of master swimmers during the season

Impacto dos motivos de adesão na regulação da motivação de atletas máster de natação na temporada

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Abstract – There are several reasons that lead a person to start and stay in a sport. In this case, reasons have fundamental importance for athlete motivation, once the higher the motivation, the more constant the search for better performance and continuity in sport. This study investigated the impact of adhesion reasons to the practice on the motivation of master swimmers. Survey participants were 48 master swimming athletes over a year of competition. Data collection was conducted with the Diagnostic Instrument of Adhesion of Swimming Practice and Sport Motivation Scale. For data analysis, Shapiro-Wilk, Friedman, Wilcoxon, Spearman correlation and Uni/Multivariate Regression were conducted ($p<0.05$). Results showed that adhesion reasons throughout the season remained the same (Well-Being and Prevention); identification extrinsic motivation increased over the year ($p<0.05$). Social Recognition reason had significant impact ($p<0.05$) on the External Regulation extrinsic motivation over the season, whereas Challenge, Performance and Social Recognition had an effect ($p<0.05$) on the self-determined motivation during the sporting year. It was concluded that for master athletes, self-determination is influenced by pursuit of performance and social relationship from the middle to the end of the competitive year. In addition, external reasons are critical throughout the season, especially at the beginning of the competition year.

Key words: Athletes; Motivation; Sport psychology; Swimming.

Resumo – *Diversos são os motivos que levam uma pessoa a iniciar e permanecer em uma modalidade esportiva. Neste caso, os motivos possuem fundamental importância para a motivação do atleta, uma vez que quanto maior a motivação mais constante é a busca por melhores resultados e continuidade no esporte. Este estudo investigou o impacto dos motivos de adesão à prática na motivação de atletas de natação máster. Participaram da pesquisa 48 atletas de natação máster durante um ano de competição. Como instrumento foi utilizado o Instrumento de Diagnóstico de Adesão a Prática de Natação e a Escala de Motivação para o Esporte. Para análise de dados utilizou-se os testes Shapiro-Wilk, Friedman, Wilcoxon, correlação de Spearman e Regressão Uni e Multivariada ($p<0,05$). Os resultados evidenciaram que os motivos para adesão ao longo da temporada se mantiveram os mesmos (Bem-estar e Prevenção); a motivação extrínseca de identificação aumentou ao longo do ano ($p<0,05$). O motivo de Reconhecimento social apresentou significativo impacto ($p<0,05$) na motivação extrínseca de Regulação Externa durante toda temporada, enquanto o Desafio, Rendimento e Relacionamento social apresentou efeito ($p<0,05$) sobre as regulações de motivação autodeterminada durante o ano esportivo. Concluiu-se que para atletas máster a autodeterminação é influenciada pela busca de rendimento e pelo relacionamento social do meio ao término da temporada. Por outro lado, os motivos externos são fundamentais durante toda temporada, principalmente no início.*

Palavras-chave: *Atletas; Motivação; Natação; Psicologia do esporte.*

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INTRODUCTION

Motivation has been considered a key factor for interest, autonomy and permanence of athletes in sports as well as for a successful career[1,2]. Research has pointed out that when athletes are motivated by different types of autonomous motivation, they have greater self-determination for sports, show different behavioral consequences such as better involvement, wellness, entertainment, performance and no dropout intentions[3-6]. In this context, studies have pointed to the importance of motivational climate in the group, technical behavior and satisfaction of basic psychological needs for continuity in the sport[7-12]. However, there is lack of studies reporting the impact of the adhesion reasons for practice in the motivational regulation that the activity provides to the athlete over time.

The adhesion reasons are those perceived by the person as important in the performance of certain activity[13]. The knowledge of these reasons can be extremely important for coaches, allowing them to organize actions to promulgate a positive motivational climate in the practice environment and providing better chances of achieving their goals[7]. In the case of master athletes, motivation becomes even more important to continue practice, as these athletes, in addition to having competitive swimming as of utmost importance in their lives, also play other roles, such as in their families and formal labor[14,15].

These inconsistent results[11-13] on the relationship between adhesion and permanence in sports and motivation suggest that this psychological process needs further investigation. The Self-Determination Theory (SDT)[16,17] is a macro theory that addresses human motivation and personality in various aspects of life centered on different types of motivation[3]. In this sense, this has been the theoretical basis most widely used to investigate motivational aspects in sports, demonstrating the relationship of self-determined motivation as a key factor for sport continuity[9-12]. Therefore, for self-determination, the athlete must be satisfied in three basic psychological needs addressed by the Basic Psychological Needs mini theory[12]. This mini theory supports that behavior is governed by three basic psychological needs: autonomy for being responsible for their actions; competence in facing the adversity; and social relations developed in the sport environment[17]. When these needs are met, athletes will be more engaged, dedicated and committed to their sporting goals, showing a self-determined behavior for sport[3,16].

The SDT indicates that motivation can be regulated from a continuum including amotivation (lack of motivation), extrinsic motivation (EM) and self-determination (Intrinsic Motivation - IM), the latter being the best psychological condition for practice[17]. While IM has impact on the athlete's permanence in the sport, amotivation plays a negative role, leading to the abandonment of sports in the long term[9-12].

When self-determined for a specific task, the subject has an autonomous behavior, performing the task in a pleasant way and by his own will (IM to know), for achieving goals that the activity provides (IM to achieve goals), for

several significant experiences that it enables (IM to stimulating experiences), or according to the priority of his needs (integrated regulation)[17]. In contrast, extrinsic motivation is characterized by a regulated behavior in a controlled manner by the importance this it has for the individual's life (identified regulation), for suffering with inner thoughts of rules and duties (introjected regulation) or external requirements (external regulation). Thus, the behavior can be regulated in a more autonomous way (self-determined motivation: all IM and integrated regulation), controlled (EM of identified, introjected and external regulation) or even the lack of motivation (amotivation)[3,5,18].

In this perspective, self-determined motivation is of fundamental importance for the continuity in sports[7,10], contrary to controlled motivation, which may be responsible for dropout of sport [1]. Although there are studies on motivation, persistence and sports abandonment[1,9,11,12], little is known about the impact of adhesion reasons on the athlete's motivation regulations throughout the season. Thus, this is the gap that the present study aims to fill, since most of these studies have addressed the impact of motivation on the permanence or abandonment of specific sports.

Therefore, in an attempt to expand the knowledge about the relationship between adhesion reasons and motivation in master sport, this study investigated the impact of adhesion reasons in the motivation of master swimmers at different times of the competition season.

METHODOLOGICAL PROCEDURES

Population and sample

All master swimmers registered in the Master Swimming Association of Paraná from cities in northern and northwestern Paraná in 2011 were initially invited to participate in the study, totaling 65 athletes. At first (of three collections) 59 athletes agreed to participate. However, there was a sample loss of eleven subjects until the last moment, resulting in 48 athletes (43.42 ± 12.5), 33 males and 15 females.

Instruments

The Sport Motivation Scale (SMS)[19], validated for Portuguese by Bara Filho et al.[20], was used to evaluate the self-determined motivation of athletes. This scale consists of 28 items divided into seven dimensions: IM to know; IM to reach; IM to stimulating experiences; EM to external regulation; introjection; identification; and amotivation. The SMS was answered on a 7-point Likert scale in a continuum from 1 ("no correspondence") to 7 ("corresponds exactly"). The Conbrach's alpha varied in moment 1 from $\alpha = 0.77$ to 0.81, in moment 2 from 0.72 to $\alpha = 0.85$, and in moment 3 from 0.75 to $\alpha = 0.86$.

The Diagnostic Instrument of Adhesion to the Swimming Practice (IDAPRAN)[13] was used to identify the reasons for swimming practice. The subject must answer two questions, the first containing 16 reasons options for the start of practice, including extrinsic (location, parents decision, financial, etc.) and intrinsic reasons (e.g., identification for swimming,

friendship, good physical and emotional feeling, among others). The second question refers to the continuity in swimming, with 40 items grouped into 17 categories, also addressing extrinsic and intrinsic reasons. This question is answered on a 3-point Likert scale, corresponding to 0 (not important), 1 (more or less important) and 2 (very important). The Conbrach's alpha of this instrument in the first collection moment was $\alpha = 0.82$, in the second time $\alpha = 0.77$, and in the third time, $\alpha = 0.84$.

Procedures

The study was approved by the Ethic Committee in Research with Human Beings under protocol No. 339/2011. Initially, there was contact with the Federation of Water Sports of Paraná for approval of research with athletes for further contact with swimming teams. Teams and athletes who agreed to be part of the study had scheduled times for subsequent application of instruments. The instruments were applied in three moments during the 2011 season: the first in May, after the start of the competition year; the second during the month of September, half of the season; and the third in December.

Data analysis

Data analysis distribution was performed using the Shapiro-Wilk test. Since data did not show normal distribution, Median (Md) and quartiles (Q1, Q3) were used for data representation. To compare the reasons of permanence in the swimming practice and motivation for the sport in three applications of the tests, the Friedman test was applied, followed by Wilcoxon test. To analyze the relationship among variables, the Spearman correlation was used ($p < 0.05$). To check the impact of the reasons for the permanence in the swimming practice on motivation, a regression model was conducted (univariate and multivariate) with variables that obtained significant correlation ($p < 0.05$) and above 0.40 (moderate). The existence of outliers was assessed by the Mahalanobis distance (D^2) and the univariate normality of variables was evaluated by the univariate and multivariate asymmetry coefficients ($|Sk| < 3$) and kurtosis ($|Ku| < 10$). Since data were not normally distributed, the Bollen-Stine Bootstrap technique was used to correct the value of coefficients estimated by the Maximum Likelihood method[21]. No DM^2 valuesindicator of the existence of outliers were observed, as well as sufficiently strong correlations among variables that indicate problems with multicollinearity. The interpretation of the regression coefficients had as reference: little effect for coefficients <0.20, average effect for coefficients up to 0.49 and strong effect for coefficients > 0.5022 ($p < 0.05$). Data were analyzed using SPSS 22.0 and AMOS 22.0 software.

RESULTS

In moment 1 of the study, reasons for the start of the swimming practice and permanence of the early season were both evaluated in master swimming athletes. The reasons I always liked swimming (19.10%), Good physical and emotional

feelings (14.58%) and Physical Fitness (11.45%) had prevalence over the other reasons. It was observed that for the adhesion reasons in swimming practice at the beginning of the season, the Environment reason increased ($p < 0.05$) its importance from the first to the second moment of the season (Table 1).

Table 1. Reasons for permanence in the swimming practice of master athletes from northern and northwestern Parana in three moments during the 2011 season.

Category	Moment 1 Md (Q1; Q3)	Moment 2 Md (Q1; Q3)	Moment 3 Md (Q1; Q3)
Environment	1.00 (1.00; 1.50)[a]	1.50 (1.00; 1.50)[a]	1.25 (1.00; 1.50)
Methodology	1.30 (1.00; 1.70)	1.30 (1.00; 1.60)	1.30 (1.00; 1.70)
Aesthetics	1.00 (0.50; 1.00)	1.00 (0.50; 1.00)	1.00 (0.50; 1.00)
Yield	1.30 (0.70; 1.30)	1.00 (0.70; 1.70)	1.30 (0.70; 1.70)
Challenge	1.50 (1.00; 2.00)	1.25 (1.00; 2.00)	1.00 (1.00; 2.00)
Wellness	2.00 (2.00; 2.00)	2.00 (2.00; 2.00)	2.00 (2.00; 2.00)
Specific characteristics	1.50 (1.50; 2.00)	1.50 (1.12; 2.00)	1.50 (1.50; 2.00)
Physical fitness	1.70 (1.70; 2.00)	1.70 (1.70; 2.00)	1.70 (1.40; 2.00)
Prevention	2.00 (1.12; 2.00)	2.00 (1.50; 2.00)	2.00 (1.50; 2.00)
Empathy	1.30 (1.00; 1.70)	1.30 (1.00; 1.92)	1.30 (1.00; 1.70)
Relationship	1.50 (1.12; 2.00)	1.50 (1.00; 2.00)	1.50 (1.00; 2.00)
Entertainment	2.00 (1.70; 2.00)	1.85 (1.70; 2.00)	1.70 (1.70; 2.00)
Ease	1.00 (0.70; 1.60)	1.00 (1.00; 1.30)	1.30 (1.00; 1.60)
Influence	1.25 (1.00; 2.00)	1.00 (1.00; 1.87)	1.50 (1.00; 1.50)
Cost	0.50 (0.50; 1.00)	0.50 (0.50; 1.00)	0.50 (0.50; 1.00)
Recognition	1.00 (0.50; 1.50)	1.00 (0.50; 1.00)	1.00 (0.50; 1.00)
Therapeutic activity	0.00 (0.00; 0.50)	0.00 (0.00; 0.87)	0.00 (0.00; 0.50)

Significant difference ($p < 0.05$) between a) 1 and 2 ($p = 0.28$).

Category Wellness (Md = 2.00) had maximum values for the three moments, but category Therapeutic Activity (Md = 0.00) had the lowest values throughout the season. Categories Prevention and Entertainment also stood out with higher values than the other categories during the three moments, unlike cost, which had low importance value for athletes (Md = 0.50).

When comparing the level of motivation in the three moments (Table 2), only EM for Identification showed significant difference between the first and second moments of the study ($p < 0.05$), indicating an increase in the subject's identification with the sport after start of the season. Introjection regulation and IM to stimulating experiences showed values higher than the other dimensions in the three applications.

By analyzing the correlations in the first moment between reasons for adhesion in the swimming practice and the motivation of athletes, the following correlations were observed: Teacher's methodology with external regulation ($r = 0.49$) and IM to know ($r = 0.42$); swimming practice for yield with Identification regulation ($r = 0.46$); practice for Challenge with Identification regulation ($r = 0.46$), IM to stimulating experiences ($r = 0.45$) and IM to know ($r = 0.46$); Social recognition with External regulation ($r = 0.41$); and swimming practice for therapeutic activity with amotivation ($r = 0.42$) and External regulation ($r = 0.44$).

Table 2. Comparison of the level of motivation for the swimming practice of master athletes from northern and northwestern Parana in three moments during the 2011 season.

Motivation Dimensions	Moment 1 Md (Q1-Q3)	Moment 2 Md (Q1-Q3)	Moment 3 Md (Q1-Q3)
Amotivation	1.25 (1.00-2.75)	1.00 (1.00-2.00)	1.25 (1.00-1.94)
External Regulation	2.88 (1.88-3.69)	3.25 (1.81-3.75)	2.50 (2.00-3.75)
Introjection regulation	5.00 (4.25-6.19)	5.75 (4.25-6.25)	5.25 (4.31-6.00)
Identification regulation	4.75 (3.50-5.19)[a]	4.75 (3.88-5.75)[a]	4.75 (3.75-5.25)
IM to achieve goals	4.63 (3.89-5.50)	5.00 (3.31-5.75)	4.88 (4.00-5.69)
IM to stimulating experiences	5.50 (4.75-6.19)	5.50 (4.50-6.25)	5.25 (4.75-6.00)
IM to know	4.75 (3.50-5.75)	4.50 (4.00-6.00)	4.75 (3.75-5.25)

* Significant difference (p <0.05) between a) 1 and 2 (p = 0.029); IM = Intrinsic Motivation.

To assess the impact of the adhesion reasons in the swimming practice on motivation, after the correlation analysis, a regression model was conducted between the reasons and motivation that showed moderate correlation (r≥0.40) or above. It was found that (Figure 1) Challenge for practice had significant effects (p <0.05) on the Identification regulation variability (19%) under moderate effect (β = 0.43; p = 0.001), IM to stimulating experiences (15%, β = 0.38, p =0.004) and IM to know (15%, β =0.39; p = 0.004). The training methodology explains 29% under strong impact (β =0.54; p = 0.001) the External Regulation variability and 24% of IM to know (β =0.49; p = 0.001). Practice for Therapeutic Activity showed impact on amotivation (16%, β =0.39; p = 0.003) and on External Regulation (20%, β = 0.45; p = 0.001). Adhesion for yield impacted 21% the Identification regulation (β = 0.45, p = 0.001). However, adhesion for social recognition had an impact of 20% on the External Regulation variability (β =0.44; p = 0.001).

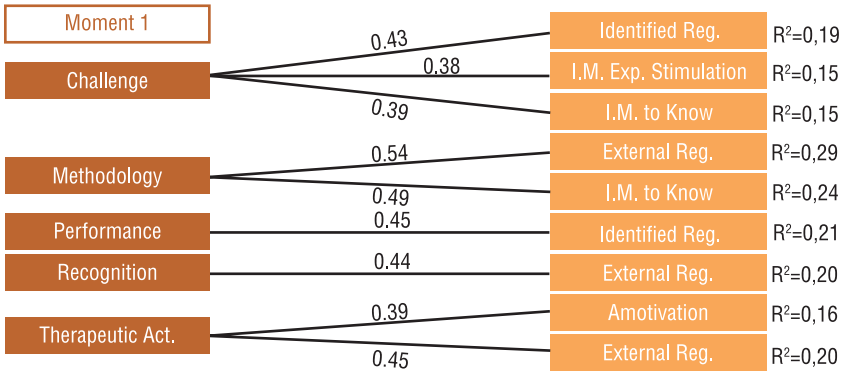

Figure 1. Impact regression model of the adhesion reasons in swimming on the motivation for the sport of master swimming athletes at the first moment of the season.

In moment 2, the following correlations were verified: Challenge with all IM regulations to achieve goals (r = 0.53), to stimulating experiences (r = 0.53) and to know (r = 0.47); Empathy with the teacher, Social Relationship and third-party influence with Identification regulation (r = 0.49; r = 0.48; r = 0.51 respectively); Specific characteristics of the practice with

IM to stimulating experiences (r = 0.40); third-party influence with IM to know (r = 0.50); and Social Recognition with External regulation (r = 0.63).

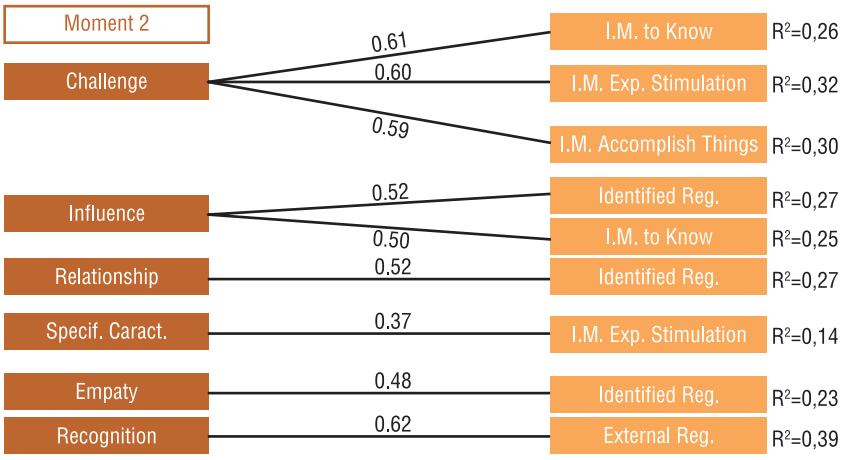

Figure 2. Impact regression model of the adhesion reasons in swimming on the motivation for the sport of master swimming athletes at the second moment of the season.

It was found that in moment 2 (Figure 2), Challenge for practice had significant effects (p <0.05) on variability under strong effect in all IM regulations to know (26%, β = 0.51, p = 0.001), stimulating experiences (32% β = 0.56, p = 0.001) and achieve goals (30%, β = 0.55, p = 0.001). The third-party influence had impact on the Identification regulation variability (27%, β = 0.52, p = 0.001) and on IM to know (25%, β = 0.50, p = 0.001). Social Relationship and Empathy for the Professor had an impact with Identification regulation (27%, β = 0.52, p = 0.001 and 23%, β = 0.48, p = 0.001, respectively). The Specific characteristic of practice impacted by 14% on IM to stimulating experiences (β = 0.37, p = 0.007). Social Recognition accounted for 39% of the External regulation variability (β = 0.62, p = 0.001).

Finally, in moment 3, the following correlations were verified: Yield with Identification regulation (r = 0.56), IM to achieve goals (r = 0.57) and IM to stimulating experiences (r = 0.50); Social relationship with Identification regulation (r = 0.53); Aesthetics with IM to stimulating experiences (r = 0.42); and Social Recognition with External regulation (r = 0.51) (p <0.05).

In moment 3, it was found that Yield had an impact on the IM to Identification variability by 37% (Figure 3), having strong effect (β = 0.61; p = 0.001), 36% with IM to achieve goals (β = 0.60; p = 0.001), and 35% with IM to stimulating experiences (β =0.59; p = 0.001). Social Relationship in swimming practice had an impact of 31% on Identification regulation and also had a strong effect (β = 0.55, p = 0.001). The swimming practice for Aesthetics had an impact of 22% on IM to stimulating experiences under moderate effect (β = 0.47, p = 0.001). Social recognition explained by 25% the External regulation variability (β = 0.50; p = 0.001).

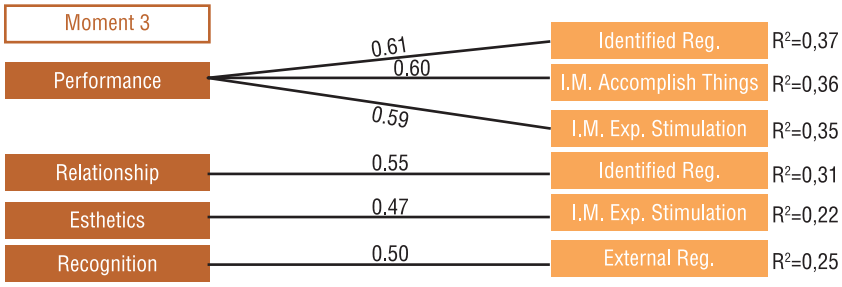

Figure 3. Impact regression model of the adhesion reasons in swimming on the motivation for the sport of master swimming athletes at the third moment of the season.

DISCUSSION

When analyzing the effect of the adhesion reasons in sports motivation throughout the season, it was found that the challenges imposed by swimming have significant impacts on self-determined motivation throughout the sporting year (Figures 1, 2 and 3). This shows that the established challenges and objectives outlined at the beginning of the year until the end of the season being represented by the search for yield (Figure 3) ensure increased self-determined motivation of these athletes. This is a feature of athletes who realize the search for yield as something necessary in their lives, as well as something pleasurable[23]. This feeling favors the continuation of competitive sports practice, since athletes are self-determined for this task, getting increasingly involved and having fun searching for the best performance[9,11,12].

The desire athletes have to win should be highlighted, regardless of age or gender, which is the pursuit of their goals in the sport. This desire present in athletes represents how the proposed challenges and their quest throughout the year influence their self-determination from the beginning to the end of the season[24]. This highlights the importance of the pursuit of sport performance, as it strongly impacts the self-determined motivation of athletes.

Thus, the results of this study corroborate the SDT, since achieving challenging goals promulgate athletes to a self-determined behavior[17], allowing greater taste for practice and indicating greater internal capacities for the sport practice. Similar results have been found in other studies[4,25], checking the importance that the pursuit of mastery in sports performance has to a greater intrinsic motivation of athletes[24,26].

In addition, the early season is also marked by extrinsic factors of adhesion, which according to the Organic Integration mini theory[17], can also lead to self-determination to the extent that the social context makes the individual internalize goals, values and beliefs in relation to the context in which he is inserted[11]. In this perspective, the methodology used by coaches can be an external factor of fundamental importance in maintaining (Figure 1) and evolution of the type of motivation during the season, to the extent that the social context - empathy with the coach and influence of other social peers (e.g., friends, family) - has a strong impact (Figure 2) on self-determined motivation.

Such evidence supports the findings of previous investigations[9,10], checking the positive relationship between the motivational climate of the group and the influence of the coach in the internalization of the athlete's behavior, thus favoring greater autonomous motivation and persistence during a year in various sports and among countries[6]. Furthermore, it is of utmost importance how coaches perform their activities, as individual sports athletes perceive greater attention and dedication from their coaches, favoring a better performance in sports and better psychological well-being with practice[10,27,28].

The third-party influence (other social peers) for self-determined motivation is also linked to the social relationship that the swimming practice allows for athletes, which is a striking fact after the start of the season (Figure 2), a time necessary to meet new people and establish links with other athletes. This situation favors the satisfaction of basic psychological needs that the SDT provides for greater self-determination of subjects[17]. Athletes with higher social ties in sports practice enables the opportunity of one more reason to feel good about this activity and to feel part of that group, which according to the theory, raises the athlete's self-determination levels, making him stay longer in the sport[29].

Social relationship is even more impacting at the end of the season (Figure 3), a moment when master athletes enjoy the last competition of the year to strengthen the existing ties, which most likely will only meet peers again in the next year. These relationships are very important for the continuity of athletes in sport, so that in addition to these social ties, other social agents such as, coach, family, friends, have direct and indirect influence on the athletes' motivation in sports[30].

These results are consistent with the SDT[3], especially when it comes to the Basic Psychological Needs mini theory[17], since the longitudinal nature of the study shows how the relationship between people can positively influence self-determined motivation over time. The satisfaction of the basic need of relationship, characterized by establishing new social ties and sense of belonging to a group direct the athlete to sports practice focused on the well-being and pleasure[17]. Thus, the results of this study corroborate other recent findings[7,10], verifying the positive relationship among athletes with higher intrinsic motivation during the season, and a recent study[29] with college athletes, which showed that self-determined motivation is related to the support among team members.

Moreover, it was found that regardless of athlete or time of practice, Social Recognition is also important to increase the EM of athletes, since this relationship was found throughout the competitive year (Figures 1, 2 and 3). Similar results are found in the relationship between External Regulation with this type of recognition in athletes of various modalities[18], a feature described in the SDT[17] as fundamental for extrinsic motivation. The satisfaction of different emotional and behavioral consequences of athletes is emphasized, because in addition to the well-being that sports practice provides practice, the recognition and encouragement of other people, sponsors, and other external influences are also important.

Comparing the adhesion reasons throughout the season, it was found that these reasons have changed little, since Wellness, Entertainment and Prevention, reasons with autonomous characteristics, are the main reasons for these athletes throughout the season (Table 1). Such characteristics are considered extremely important by the SDT[16], since the higher the pleasure, the experience for new and exciting sport practices and the importance given to these activities, the greater the subject's intrinsic motivation, increasing enjoying this activity. This finding may be related to the fact that when athletes practice their modalities for the reasons previously described, they tend to stay in practice due to the same reasons, as they are the main reasons for self-determined motivation of athletes[17,30].

Another relevant evidence was found when comparing the motivational level over the competitive year (Table 2). It was observed that during the season, although athletes integrate the sport to their daily routine and, consequently, behavior can still be governed by instrumental value, such behavior can be considered as the most autonomous state of extrinsic motivation[3,11]. This fact can be again explained by the Organic Integration mini theory, since as athletes perceive swimming as important in their lives, the more likely to internalize goals, values and beliefs in relation to the sporting context. Importantly, this mini theory also points out the supports for autonomy and social relationships as critical to this behavior internalization[17].

Despite the contributions of these results, some limitations need to be highlighted. First, the small number of subjects, restricted to two regions of the state. However, this sample becomes relevant because these are the main swimming master athletes from Parana, who have been evaluated throughout the season, adopting a longitudinal feature of the study. The technical level of these athletes should also be mentioned, since this research was based on the master state championship season, which implies a technical level lower than national competitions. Finally, the use of the first version of the SMS to evaluate motivation regulations, since this instrument does not assess the Integrated regulation of EM, which may condition the results obtained, as athletes in these phases, according to the SDT and some studies, have greater tendency to regulate their behavior in an integrated manner. For this, the suggestion to use the SMS-II is indicated for future studies intended to evaluate motivation. It would also be interesting to analyze these variables with the inclusion of three basic psychological needs, with larger samples and resources and more robust data analysis, such as the analysis of structural equations.

CONCLUSION

The results found suggest that the intrinsic adhesion reasons are more impacting for self-determined motivation from the middle of the year to the end of the season, when the proposed challenges are achieved by improved sports performance. However, social relationship is also very important for the self-determined motivation of athletes over this period. In addition,

the external reasons are required to keep them motivated throughout the season, since the social context may favor the internalization of the athlete's behavior. As practical implications, the importance of the knowledge of coaches about methods and to provide a sociable environment, strengthening the bond and internalizing behavior of athletes is highlighted. Moreover, coaches should be aware of the goals established by their athletes, since performance improvement and the achievement of challenges are extremely important for the self-determined motivation of athletes.

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