

IMPACT OF INTRINSIC MOTIVATION ON COMPETITIVE ANXIETY AMONG WHEELCHAIR HANDBALL ATHLETES

IMPACTO DA MOTIVAÇÃO INTRÍNSECA SOBRE A ANSIEDADE COMPETITIVA EM ATLETAS DE HANDEBOL EM CADEIRA DE RODAS

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RESUMO

A motivação e a ansiedade tem sido tema recorrente de debates no esporte e entender sua relevância para a prática competitiva e os efeitos nos atletas se tornam imprescindível. Este estudo objetivou investigar o impacto da motivação intrínseca sobre a ansiedade de atletas de Handebol em Cadeira de Rodas (HCR). Foram aplicados o Inventário de Motivação Intrínseca (IMI) e a Escala de Ansiedade no Desporto (SAS) em 37 atletas (34.18 ± 9.32 anos), do sexo masculino, com deficiência física, participantes do campeonato Brasileiro de HCR. A análise dos dados foi conduzida por meio dos testes de Shapiro Wilk, a Correlação de Pearson e a Regressão Linear Múltipla ($p < 0,05$). Como resultado, as subescalas da motivação intrínseca apresentaram escores elevados tanto nas subescalas que contribuem de forma positiva (Prazer/Interesse, Competência e Percepção do esforço), quanto na subescala que contribui de forma negativa (Pressão/Tensão). Em relação ao impacto da motivação sobre a ansiedade competitiva, o atleta se sentir competente explicou inversamente 15% da variância da ansiedade somática. A competência apresentou impacto negativo e a Pressão/Tensão impacto positivo sobre a subescala de Preocupação. Ademais, as subescalas de Prazer/Interesse, Pressão/Tensão e Percepção do esforço explicaram 31% da variância da ansiedade relacionada à Perturbação da Concentração, indicando que quanto maior a percepção de prazer pela prática e esforço perante as tarefas, menos perturbações na concentração, e quanto maior o escore de pressão/tensão (menor percepção de pressão), maior a perturbação da concentração do atleta. Concluiu-se que a motivação intrínseca é um fator determinante para o controle da ansiedade competitiva dos atletas de HCR.

Palavras-chave: Motivação. Ansiedade. Esporte. Pessoas com deficiência. Handebol em cadeira de rodas.

ABSTRACT

Motivation and anxiety have been a recurrent theme in debates around sports, and understanding their relevance for competitive practice and their effects on athletes becomes imperative. This study aimed to investigate the impact of intrinsic motivation on the anxiety of Wheelchair Handball (WCH) athletes. The Intrinsic Motivation Inventory (IMI) and the Sport Anxiety Scale (SAS) were applied to 37 male athletes (34.18 ± 9.32 years old) with physical disabilities and participating in the Brazilian WCH championship. Data analysis was conducted by means of the Shapiro-Wilk, Pearson's Correlation and Multiple Linear Regression tests ($p < 0.05$). As a result, the intrinsic motivation subscales presented high scores both on the subscales that contribute positively (Pleasure/Interest, Competence, and Perceived exertion) and on the subscale that contributes negatively (Pressure/Tension). As for the impact of motivation on competitive anxiety, the athlete feeling competent inversely explained 15% of the variance of somatic anxiety. Competence presented a negative impact, and Pressure/Tension, a positive impact on the Concern subscale. Additionally, the Pleasure/Interest, Pressure/Tension and Perceived exertion subscales explained 31% of the variance of anxiety related to Disturbance of concentration, indicating that the greater the perception of pleasure with the practice and the greater the effort towards tasks, the less disturbance in concentration, and that the higher the pressure/tension score (lower perception of pressure), the greater the disturbance in the athlete's concentration. It was concluded that intrinsic motivation is a determining factor for controlling competitive anxiety in WCH athletes.

Keywords: Motivation. Anxiety. Sports. People with disabilities. Wheelchair handball.

Introduction

Adapted sports consist of systematized sports modalities for people with disabilities to practice. Derived from the rehabilitation of soldiers after World War II, they have particular characteristics, as well as the possibility of social ascension, achievement of autonomy, in addition to improvements in physical fitness and health¹.

Among the various modalities of adapted sports, we highlight Wheelchair Handball (WCH). In the 1990s and, at first, with a pedagogical focus, it developed through an extension project of the State University of Campinas². As of 2004, the sport began to be systematized in the city of Toledo, Paraná, following dynamics and materials similar to those of Conventional Handball (CH), but with adaptations so that the game could be played using a wheelchair. Thus, on the same court as that of CH, in the adapted version, there are two game possibilities: WCH7, in which each team is composed of 7 players, with 2 periods of 30 minutes, and 10 minutes of rest in between; and WCH4, which, based on Beach Handball, has 4 players per team, in a game structured into two periods of 10 minutes, with a 5-minute break. The players of both possibilities of WCH are people with physical disabilities, such as spinal cord injury, amputations, and physical alterations due to poliomyelitis sequelae, among other disabilities, in accordance with the eligibility for their practice³.

If the rules of this adapted modality are mostly similar to the conventional ones, the psychosocial aspects involved in this activity, as well as in other adapted sports, stand out in athletes with disabilities. Many see in sports a possibility to assert themselves as capable of playing remarkable roles, achieving a paradigm shift from someone with a disability, as a person who has a limitation, to a socially valuable and victorious function⁴. WCH is an evolving modality played at the state and national levels, with teams concentrated in the south and southeast regions, and is already developed in some countries such as Australia, Portugal, Chile, Argentina, Bolivia and Venezuela⁵.

That said, the emotional aspect of athletes has become the focus of sport psychology, leading studies to assess the influence of motivation, anxiety, and stress on sport performance^{6,7}, and to identify the benefits to quality of life and emotional wellbeing enabled by practice^{8,9}. The significant increase in teams that play WCH with a focus on high-performance sport imposes on their athletes not only physical exhaustion, but also emotional exhaustion. Thus, it is necessary to investigate the emotional aspects of athletes that can positively or negatively influence their performance.

From this perspective, motivation has been evidenced, as it can influence a person's compliance with and permanence in sports, contributing to the achievement of quality-of-life benefits and good results in the performance of an athlete^{10,11}, as well as other factors: a feeling of accomplishment, persistence, and learning¹¹. According to the Self-Determination Theory, there are three motivational sources: intrinsic motivation, when the person self-determines to strive to be competent in a task, focusing on the activity itself; extrinsic motivation, in which the performance of a task is stimulated by external factors that can be obtained by carrying out an activity, such as social recognition and awards¹²; and lack of motivation, characterized by a lack of interest or indecision from those who perform an activity¹³.

Studies show that motivation can also influence anxiety indicators among high-performance players^{14,15}. Anxiety is a negative emotional state characterized by nervousness, concern, and uneasiness, being composed of cognitive anxiety (marked by thoughts of concern) and somatic anxiety (causing physical activation such as rapid heart rate, muscle tension and sweaty hands). A high level of anxiety becomes negative for sport performances that require complex skills, fine motor skills, coordination, concentration, and balance¹², and depending on the perception and psychological state of each athlete, the competition can become a challenge or a threat to their performance¹⁶.

Therefore, studies have suggested the need for research on the influence of these factors on athletes with disabilities, as they can influence and hinder their performance^{17,18}. Athletes with disabilities have psychologically disadvantaged aspects, which need special consideration, since discrimination and physical limitations imposed by the disability can make it difficult for them to achieve positive results in training sessions and competitions compared to athletes in conventional sports who do not have a given condition. On the other hand, in addition to technical

and tactical issues, which are fundamental for the development at a high level of those who practice them, one cannot disregard the volume of training required for a person to become a high-performance athlete¹⁹.

In its turn, another study²⁰ corroborated with the above statements by elucidating that athletes with disabilities and pressure for results can generate effects, such as stress and anxiety, worsened by factors derived from the condition itself, as the practice becomes an opportunity to expose their capabilities for them to overcome their limitations before society, having different difficulties, paths and motives that lead them to sports.

Although the literature provides research on WCH, as well as on the motivational and anxiety aspects in different sports for people without disabilities^{11,14,15}, recent studies have not yet been found addressing wheelchair team sports. It would be wrong to neglect these specific psychological factors and apply to athletes with physical disabilities and in wheelchairs the same working standard of psychology that is employed in conventional-sports athletes²⁰. However, to this end, studies are needed for an understanding of these psychological specificities about this population, as well as for daily work, in order to enable the achievement of sport competitive results, individually and collectively. Thus, the interference of anxiety, when related to high-performance sports, has been a subject of interest and quite recurrent among coaches, athletes, and researchers over the years²¹.

In light of the foregoing, in order to broaden knowledge about the emotional aspects that interfere with the practice of adapted sports, this study aimed to investigate the impact of the relationship between intrinsic motivation and anxiety in WCH athletes.

Methods

Sample

All male athletes participating in the Brazilian WCH Championship held in the state of Paraná, in 2016, were invited to join the research, totaling 69 individuals. However, only seven teams from the states of São Paulo, Rio de Janeiro, Paraná and Santa Catarina agreed to participate. Thus, 37 male players with physical disabilities, aged between 19 and 52 years old, took part in this study. The participants were selected in a non-probabilistic way and by convenience. The choice of only male athletes as research participants was due to an inexpressive female presence in the competition. Thus, we chose as inclusion criteria: a) being playing the sport for at least one year; and b) having played at least one match during the championship.

Procedures

Below we present the three instruments used for data collection:

Sociodemographic characterization questionnaire: This instrument consists of questions about age group, education, type of injury, years playing the sport, weekly hours, and competitive level, comprehending the athlete's sporting experience at a regional, national or international level.

Intrinsic Motivation Inventory (IMI)^{22,23}: This instrument consists of a Likert-type scale with 5 response levels (1 = Strongly Disagree; 5 = Strongly Agree). It has 18 statements grouped into four subscales: Pleasure/Interest (1, 5, 9, and 13; e.g.: I really like...), Competence, (3, 7, 11, 15 and 18; e.g.: I am satisfied with my performance...), Perceived exertion (2, 6, 10, 14 and 17; e.g.: I do not make much effort in...) and Pressure/Tension (4, 8, 12 and 16; e.g.: I feel tense while practicing...). It is noteworthy that the Pressure/Tension subscale must be interpreted inversely. The results of each subscale are obtained by the mean of the values of the items that make it up. The Cronbach's alpha of the questionnaire was 0.72, indicating strong internal consistency.

Sport Anxiety Scale (SAS)^{24,25}: The SAS is an instrument that consists of a Likert scale with 4 response levels (1 = Not at all; 4 = A lot). It comprises a total of 21 items arranged in three subscales: Somatic anxiety (1, 4, 8, 11, 12, 15, 17, 19, 21; e.g.: I feel nervous), Concern (3, 5, 9, 10, 13, 16, 18; e.g.: I am concerned about the possibility of not performing as well as I could), and Disturbance of concentration (2, 6, 7, 14, 20; e.g.: I am concerned about the possibility of not being able to concentrate). The results of each subscale are obtained by summing the values assigned to each of the respective items. The Cronbach's alpha of the questionnaire was 0.90, indicating strong internal consistency.

Initially, authorization was requested from the president of the Brazilian Wheelchair Handball Association [*Associação Brasileira de Handebol em Cadeira*] (ABRHACAR), so that we could reach out to those responsible for each team registered to compete in the Brazilian WCH Championship. During the technical conference, the research objectives were presented, and the coaches were asked permission for the study to proceed. Then, the research was presented to the athletes, who were invited to individually answer the questionnaires anonymously. On the first day of the games, the athletes answered the questionnaires 30 minutes before the match. Those who agreed signed the Free and Informed Consent Form (FICF). This study was approved by the Research Ethics Committee of the Paraná University [*Universidade Paranaense*], under number 1.903.297.

Statistical analysis

The Shapiro-Wilk test and the asymmetry and kurtosis analysis (values between -2.0 and 2.0) showed that the normal distribution of the data was not violated. Thus, measures of central tendency (mean) and dispersion (minimum, maximum and standard deviation) were used to describe the study variables. Pearson's correlation was used to verify the association between the motivation and anxiety subscales. Three multiple linear regression models were conducted using the backward method for the input of variables (removal criterion $F=0.10$) to check the impact of the intrinsic motivation subscales (Pleasure/Interest, Competence, Perceived exertion, and Pressure/Tension) (independent variables) on the scores of the Competitive anxiety subscales (dependent variable): Somatic anxiety (Model 1), Concern (Model 2), and Disturbance of concentration (Model 3). Although the sample is considered small for multiple regression models, Knofczynski and Mundfrom²⁶ ensured that a minimum of two subjects is already acceptable for this model to have a good level of prediction. The Variance Inflation Factors (VIF) were calculated, and no variable showed indicators of multicollinearity ($VIF < 5.0$). All analyses adopting a significance level of $p < 0.05$. In addition, a *post hoc* statistical power analysis in the G * Power 3.1.9²⁷ software revealed that our statistical power was 62%, based on our sample of 37 participants, a medium effect size (0.25), in accordance with Cohen's f^2 criteria (1988) and a p value of 0.05.

Results

The participants' descriptive parameters indicated an age mean of 34.18 ± 9.32 years, and most athletes had completed high school (52.7%). When the characteristics related to the type of injury were verified, 52.7% had spinal cord injury, with an average time of injury acquisition of 4.81 ± 3.12 years. As for sporting characteristics, their practice time was 4.76 ± 3.10 years, with a weekly training frequency of 2.58 ± 1.22 days, an average length of 5.95 ± 3.97 hours, and with 44.7% and 23.7% acting at national and international level, respectively.

The findings revealed that the athletes presented high scores both on the subscales that contribute positively to intrinsic motivation (Pleasure/Interest, Competence and Perceived exertion) and on the subscale that contributes negatively (Pressure/Tension). As for competitive anxiety, the athletes were found to feel not much nervous (somatic anxiety), do not worry too

much (concern), and do not lose concentration (disturbance of concentration) before or during the competition, as the scores were not high.

Table 1. Descriptive statistics (minimum, maximum, mean, standard deviation, asymmetry and kurtosis) and correlations between the study variables

VARIABLES	1	2	3	4	5	6	7	8
1. Age		0.18	0.14	0.07	-0.08	-0.19	-0.10	-0.10
Intrinsic motivation								
2. Pleasure/Interest			0.41*	0.27*	0.06	-0.29*	-0.22	-0.23
3. Competence				0.22	0.03	-0.41*	-0.28*	-0.15
4. Perceived exertion					0.23	0.12	0.09	0.33*
5. Pressure/Tension						0.150	0.40*	0.38*
Competitive anxiety								
6. Somatic anxiety							0.57**	0.69**
7. Concern								0.66**
8. Disturbance of concentration								
Minimum	19.0	3.0	1.4	2.2	2.0	9.0	7.0	5.0
Maximum	52.0	5.0	4.4	4.8	5.0	27.0	26.0	16.0
Range	-	1-5	1-5	1-5	1-5	9-36	7-28	5-20
Mean	34.70	4.51	3.37	3.34	3.18	16.21	15.32	8.32
Standard deviation	8.88	0.53	0.74	0.52	0.73	5.27	5.31	3.01
Asymmetry	0.150	-0.964	-1.005	0.183	0.380	0.325	0.025	0.829
Kurtosis	-0.547	0.261	0.793	0.695	-0.275	-0.959	-0.829	-0.027

Note: *p < 0.05; **p < 0.01; (Pearson's correlation)

Source: The authors

Table 1 also shows the correlation between the variables, revealing the following significant correlations ($p < 0.05$): Pleasure/Interest and Somatic anxiety ($r = -0.29$); Competence with Somatic anxiety ($r = -0.41$) and Concern ($r = -0.28$); Pressure/Tension with Concern ($r = 0.40$) and Disturbance of concentration ($r = 0.38$). To check the impact of motivation on competitive anxiety, three backward multiple linear regression models were conducted, having the scores of the competitive anxiety subscales as the dependent variable. All intrinsic motivation subscales (independent variables) were initially incorporated into the estimated models, so the method used only defined as predictive variables those that best fit the model and explained the highest percentage of variance.

Table 2. Multiple linear regression using the motivation subscales as explanatory variables for the variance of Somatic anxiety

Models	Non-standardized coefficient		Standardized beta coefficient	Adjusted R ²	P
	B	95% C.I.			
Model 1^a					
Competence	-2.727	-5.13 – -0.32	-0.382	0.17	0.027*
Pleasure/Interest	-2.037	-5.43 – 1.36	-0.204		0.232
Pressure/Tension	0.883	-0.98 – 5.60	0.122		0.163
Perceived exertion	2.309	-1.38 – 3.15	0.229		0.434
Model 1^b					
Competence	-2.748	-5.13 – -0.36	-0.384	0.18	0.025*
Pleasure/Interest	-2.024	-5.40 – 1.35	-0.203		0.232
Perceived exertion	2.596	-0.59 – 5.79	0.257		0.108
Model 1^c					
Competence	-3.284	-5.51 – -1.05	-0.459	0.17	0.005*
Perceived exertion	2.217	-0.93 – 5.36	0.220		0.161
Model 1^d					
Competence	-2.939	-5.14 – -0.74	-0.411	0.15	0.010*

Note: *Significant association ($p < 0.05$) - Multiple linear regression

Source: The authors

Table 2 displays the regression models of the association between motivation and Somatic anxiety. Model 1^d presented the best percentage of explanation ($F = 7.325$; $p = 0.010$), evidencing that the competence subscale was significantly associated with somatic anxiety, indicating that the athlete feeling competent inversely explains 15% ($R^2=0.15$) of the variance of somatic anxiety, that is, the more competent the athlete feels, the lower their somatic anxiety.

Table 3. Multiple linear regression using the motivation subscales as explanatory variables for the variance of the Concern subscale

Models	Non-standardized coefficient		Standardized beta coefficient	Adjusted R ²	P
	B	95% C.I.			
Model 2^a					
Competence	-1.724	-4.135 – 0.68	-0.239	0.18	0,155
Pleasure/Interest	-1.682	-5.091 – 1.72	-0.167		0.323
Pressure/Tension	2.897	0.62 – 5.17	0.397		0.014*
Perceived exertion	0.964	-2.34 – 4.27	0.095		0.557
Model 2^b					
Competence	-1.63	-4.00 – 0.73	-0.22	0.20	0.169
Pleasure/Interest	-1.49	-4.80 – 1.81	-0.14		0.366
Pressure/Tension	3.04	0.85 – 5.23	0.41		0.008*
Model 2^c					
Competence	-2.07	-4.22 – -0.98	-0.28	0.20	0.048*
Pressure/Tension	2.99	0.81 – 5.17	0.41		0.009*

Note: *Significant association ($p < 0.05$) - Multiple linear regression

Source: The authors

Table 3 illustrates the regression model that used the Concern subscale as dependent variable. Model 2^c was the most explanatory and remained statistically significant ($F = 5.620$; $p = 0.008$). The model showed a significant association for Competence and for Pressure/Tension, showing that the athlete feeling competent and pressured to perform well has an explanatory power of 24% ($R^2=0.24$) of the variance of anxiety related to Concern. Specifically, competence

had a negative impact ($\beta = -0.28$), and Pressure/Tension had a positive impact ($\beta = 0.41$) on the Concern subscale.

Table 4. Multiple linear regression using the motivation subscales as explanatory variables for the variance of the Disturbance of concentration subscale

Models	Non-standardized coefficient		Standardized beta coefficient	Adjusted R ²	P
	B	95% C.I.			
Model 3^a					
Competence	-0.50	-1.81 – 0.81	-0.12	0.24	0.442
Pleasure/Interest	-1.68	-3.54 – 0.17	-0.29		0.074
Pressure/Tension	1.32	0.08 – 2.56	0.31		0.037*
Perceived exertion	2.06	0.26 – 3.86	0.35		0.026*
Model 3^b					
Pleasure/Interest	-1.95	-3.6 – -0.24	-0.34	0.25	0.027*
Pressure/Tension	1.33	0.10 – 2.56	0.32		0.034*
Perceived exertion	1.97	0.20 – 3.75	0.34		0.030*

Source: The authors

In its turn, the regression model using the Disturbance of concentration subscale as dependent variable is shown in Table 4. Model 3^b, containing the Pleasure/Interest, Pressure/Tension and Perceived Exertion subscales was the most adequate ($F = 5.150$; $p = 0.005$), explaining 31% of the variance of anxiety related to Disturbance of concentration. This finding indicates that the greater the perception of pleasure with the practice, and the greater the perception of effort towards the tasks, the less disturbance in concentration the athlete experiences. It is also noteworthy that the higher the pressure/tension score (lower perception of pressure), the greater the disturbance in the athlete’s concentration.

Discussion

This study aimed to verify the association between intrinsic motivation and anxiety in wheelchair handball athletes in competition. The main results showed a positive influence of motivation on anxiety, indicating that motivation contributes to controlling the competitive anxiety of WCH athletes, thus preventing them from feeling anxious during the matches.

Motivation has been constantly pointed out as one of the main success factors for athletes. When it comes to sports, motivation is one of the most significant factors for the insertion and permanence of athletes in a certain modality²⁸, and it can determine both entry and continued compliance with training⁷.

This finding may partly explain the results of this study, since the sample is composed of athletes who participated in national and non-international competitions and, although these players practice regularly, they still do not experience the requirements of a Paralympic competition. Moreover, these results strengthen the understanding of engagement in sports by people with disabilities being linked to psychosocial factors that go beyond the search for competitive results. Feeling part of a group, acting as an athlete, even if not victorious, and establishing relationships with other participants in competition events can be facts that, at the beginning of competitive practice, are enough to motivate an athlete with a disability in their practice and reduce anxiety levels. Corroborating with this argument, Faria et al.²⁹ identified that the main factors that lead athletes to stay in sports are the pleasure derived from practicing,

promoted by a feeling of competence, the fact that they like to compete, and the possibility of making friends.

Another study³⁰ found that elite German athletes in sports for people with disabilities are engaged in their practice to experience pleasure and improve their athletic level, while material incentives, such as career opportunities, traveling and making money proved, at best, to be just a minimum incentive.

On the other hand, with an athlete's professionalization, as it occurs in official Paralympic competitions, this initial phase of socialization becomes more discreet, with an increase in the goals related to high sport performance, which may be related to increased anxiety to achieve this performance¹⁷.

The results of this study referring to the statistical analysis of multiple linear regression allow us to verify that the "Competence" subscale had a significant and positive impact of 15% ($R^2 = 0.15$) in relation to the Somatic anxiety subscale, indicating that the more competent the athlete feels, the fewer somatic reactions they will feel during competitions. However, other factors such as Self-confidence and Emotional control can also lead an athlete to feel able or not to perform a certain task, that is, when athletes present high self-confidence scores, they usually have low levels of cognitive and somatic anxiety, and when the athletes perceived their anxiety as a hindrance to performance, they showed a decrease in the occurrence of thoughts related to self-confidence³¹. In this sense, competence allows or makes one capable of mobilizing knowledge in order to face a given situation, would be made up of several skills and, ultimately, can impact their performance in a match.

Studies point out that the main motivational stimulus for sports participation is the development and learning of new skills, and challenges, action, winning, competing or playing sports seem to be intrinsic to competition^{6,7}. In this context, sports, when seen from the perspective of accomplishment, promote an involvement by which individuals make an effort to carry out tasks, which can be measured further in terms of success or failure by their practitioners³².

The results concerning the Competence and Pressure/Tension subscales showed a significant association related to the Concern subscale, evidencing that the more competent and less pressured/tense the athlete feels, the lower the symptoms of competitive anxiety related to concerns about the tasks. Nervousness, concern and body agitation indicate a high level of anxiety that, if not controlled, can harm the athlete. On the other hand, "concern" can be useful when it maintains a logic and healthy relationship with everyday situations. However, when it becomes something persistent and permanent, without presenting any real danger, it can cause serious problems and keep the individual in a constant state of anxiety¹².

Investigations^{32,33} have noted that sports demand athletes to comply with a wide range of requirements so that they can achieve their goals. Depending on the level at which this athlete is, be they amateur or elite, one major demand is the competition pressure to which they are often subjected.

Finally, analyzing the results referring to the Pleasure/Interest, Pressure/Tension and Perceived exertion subscales, with the Disturbance of concentration subscale as dependent variable, the latter was the best regression model with result ($F = 5.150$; $p = 0.005$), explaining 31% of the variance for anxiety.

Perceived exertion is essentially related to a heavy muscle work that involves a relatively high tension on the musculoskeletal, cardiovascular and respiratory systems. In this sense, the multifactorial influence of perceived exertion is defined as a type of Gestalt, considering that different sensations are present, such as: tension, pain, fatigue of the peripheral muscles and of the respiratory system, in addition to other sensory cues, such as behavior, as well as emotional and psychological factors¹².

Furthermore, our findings suggest that feeling pleasure favors the control and reduction of symptoms related to concentration disturbances, while lower pressure/tension and greater perceived exertion seem to favor these symptoms of competitive anxiety. That is, the less pressure this athlete feels and the greater their effort, the more these sensations may be present, and, on the other hand, the more pleasant their practical experience, the fewer unpleasant sensations related to somatic anxiety they will feel. In an investigation with Korean and non-Korean athletes, the results showed that veteran wheelchair athletes tend to have a positive self-concept and accept their disability compared to beginners in wheelchairs³⁴. It is interesting to note that anxiety caused by a lack of experience using a wheelchair peaks in the first year after the diagnosis or injury.

The results of this study have some limitations that should be taken into account. First, being cross-sectional, the data obtained only allow inferences of association between the variables, but not inferences of causality. Moreover, the number of participants did not enable some comparisons, such as performance levels, sex and age group. Therefore, further research should conduct longitudinal studies able to perform several assessments of motivation and competitive anxiety in different moments and situations, in addition to observing correlations with other variables, such as resilience and wellbeing. Thus, future investigations should seek to build samples with greater representativeness of the sporting context for people with disabilities, including players at different levels of competition and of different genders, as well as wheelchair athletes from other sports. Despite the limitations presented, this study stands out insofar as it brings to light the advantages and importance of developing investigations that allow organizing a database with factors that interfere with the motivation of athletes with disabilities, especially by clarifying the direct relationship between anxiety and its effects on results in competitions, as well as specific techniques for working with each one of them.

Conclusion

From the results, it can be concluded that intrinsic motivation is a determining factor for the control of competitive anxiety in WCH athletes. It is noteworthy that an increase in intrinsic motivation favors a decrease in and the control of anxiety symptoms during training sessions and competitions. From a practical point of view, the importance of coaches and sports professionals promoting a pleasant environment during training sessions and working so that athletes with disabilities develop a pleasure for sports practice is worth stressing, since intrinsic motivation seems to be a factor that intervenes in the symptoms of competitive anxiety, which directly interfere with individual and collective performance. Furthermore, being attentive to the characteristics inherent to each player's disability, considering previous experiences, associated pathologies, and emotional state can favor and promote effective interventions.

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