

Gender Differences in Self-Determined Motivation and Subjective Well-Being of Adapted Sport Athletes Members of the Special with Intellectual and Developmental Difficulties Members

Diferencias de género en la motivación autodeterminada y el bienestar subjetivo en deportistas de deportes adaptados con dificultades intelectuales y de desarrollo Miembros de Olimpiadas Especiales

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Abstract. The Theory of Self-Determination has been used as a theoretical model of support in several studies on motivation in Sport. In this sense, we realize that motivation is a topic to which researchers have devoted much of their time, however, when researching adapted sports, and the person with Intellectual and Developmental Difficulty we observe a shortage in research. This study aimed to verify the levels of self-determination and subjective well-being of athletes members of the Special Olympics of Portugal, and ii) to compare the variables under analysis according to gender. In this quantitative study participated 94 athletes of Adapted Sports, aged between 11 and 63 years ($\bar{x}=32.61 \pm SD=13.8$) of both genders, competitors of individual and collective sports. The monitoring instruments used were Behavioral Regulation in Sport Questionnaire (BRSQ), Basic Psychological Needs Exercise Scale (BPNES), Life Satisfaction Scale (SWLS) and Positive and Negative Attachment Scale (PANAS). Data analysis was based on the verification of the internal consistency of the scales applied through the calculation of alpha and Cronbach, descriptive analysis of data and application for gender comparison through the nonparametric test U Mann-Whitney, as well as a linear regression, meeting a significance level of 0.05. As a result, we observed that the satisfaction of basic psychological needs and motivation predict good levels of life satisfaction also of positive attachment. We also found statistically significant differences in life satisfaction and negative attachments when comparing gender outcomes.

Key words: Adapted Sport; Intellectual and Developmental Difficulty; Theory of Self-Determination; Subjective Welfare; Special Olympics of Portugal.

Resumen. La Teoría de la Autodeterminación se ha utilizado como modelo teórico de apoyo en varios estudios sobre la motivación en el Deporte. En este sentido, nos damos cuenta de que la motivación es un tema al que los investigadores han dedicado gran parte de su tiempo, sin embargo, a la hora de investigar deportes adaptados, y la persona con Dificultad Intelectual y de Desarrollo observamos una escasez en la investigación. Este estudio tuvo como objetivo verificar los niveles de autodeterminación y bienestar subjetivo de los atletas miembros de las Olimpiadas Especiales de Portugal, y ii) comparar las variables bajo análisis según género. En este estudio cuantitativo participaron 94 deportistas de Deportes Adaptados, con edades entre 11 y 63 años ($\bar{x}=32,61 \pm DE=13,8$) de ambos sexos, competidores de deportes individuales y colectivos. Los instrumentos de seguimiento utilizados fueron el Cuestionario de Regulación Conductual en el Deporte (BRSQ), la Escala de Ejercicio de Necesidades Psicológicas Básicas (BPNES), la Escala de Satisfacción con la Vida (SWLS) y la Escala de Apego Positivo y Negativo (PANAS). El análisis de los datos se basó en la verificación de la consistencia interna de las escalas aplicadas mediante el cálculo de alfa y Cronbach, análisis descriptivo de los datos y aplicación para la comparación de género mediante la prueba no paramétrica U Mann-Whitney, así como una regresión lineal, cumpliendo un nivel de significancia de 0.05. Como resultado, observamos que la satisfacción de las necesidades psicológicas básicas y la motivación predicen buenos niveles de satisfacción con la vida también del apego positivo. También encontramos diferencias estadísticamente significativas en la satisfacción con la vida y los apegos negativos al comparar los resultados de género.

Palabras clave: Deporte Adaptado; Dificultad intelectual y de desarrollo; Teoría de la autodeterminación; Bienestar subjetivo; Olimpiadas Especiales de Portugal.

Introduction

Sports are an activity that follows a structure that is perfectly defined by technical, tactical and psychosocial rules and dimensions, where coaches play a fundamental role for athletes who view them as leaders and experts (Conroy & Coatsworth, 2006). In this respect, the coach's role is to optimize and maximize the potential

of the team and/or the athlete (MacDonald, Beck, Erickson & Cotê, 2014). In the context of adapted sport, coaches have to adapt their knowledge and skills using a combination of innovation, intuition and creativity in order to adjust training to the specific needs of the athletes.

We see sport as a social factor, in a society that seeks to be more and more just and egalitarian, being an important catalyst for the promotion of equality and social inclusion of individuals. In its adapted aspect, it contributes to significant improvements in the functionality, social autonomy, and quality of life of

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individuals with disabilities (Almeida & Tonello, 2007). Being adapted sport represents one of the most important factors promoting educational success, inclusion, and psychosocial development.

According to Special Olympics (2019), The Special Olympics of Portugal (SOP) has a global organization that serves athletes with Intellectual and Developmental Difficulty (IDD) providing year-round sports training and athletic competition in a variety of Olympic sports for children and adults with IDD, giving them continuous opportunities to develop fitness, show courage, experience joy, and participate in sharing gifts, skills and friendship with their families, other special Olympians and the community. The current definition of IDD reflects the change in the construct proposed by the American Association on Intellectual and Developmental Disabilities (AAIDD) (2010), and in collaboration with the World Health Organization (WHO) and, considers, together, the determination of intellectual difficulties, measured at the level of the Intelligence Quotient (IQ) (significant limitations when the value that is two standard deviations below the average – $IQ < 70/75$) and the adaptive behaviors demonstrated by each individual (when their evaluation reveals results two standard deviations below the average). IDD is then understood as a «general functioning resulting from the existence of significant limitations in intellectual functioning and adaptive behavior, which are expressed in the conceptual, social and practical domains, and this diagnosis is made before the age of 18» (Shalock et al., 2007, Schalock et al., 2010).

According to Santos (2020), the personal or integral development of the individual should focus on cognitive, social and intellectual aspects, so it is essential not to neglect the role of PA and sport, as a means of developing these same aspects. In this sense, it is important to study motivation, because Silva (1991) tells us that motivation for sports is perhaps the most important aspect for obtaining good performances (by being motivated for sports practice the therapeutic and psychological value is implicit). The Theory of Self Determination (SDT), developed by Richard Ryan and Edward Deci around the 1980's (Deci & Ryan, 2000, 2002) is a macro theory of human motivation, personality development and well-being and states that all human beings have a natural tendency towards personal growth and psychological integration (Ryan, 2009). Embedded within SDT is basic psychological needs theory, which asserts that humans have three basic psychological needs (BPN); autonomy, competence, and relatedness, and environments that

promote the satisfaction of these needs are more likely to facilitate the internalisation of motivation (Vansteenkiste, Ryan and Soenens, 2020). On the other hand, Subjective well-being is the degree to which an individual judges the total quality of his life in a favorable way (Diener, Emmons, Larsen & Griffin, 1985). For this, the individual uses two components: one affective and the other cognitive. The affective refers to their emotional reactions that can be described as positive or negative; and cognitive concerns life satisfaction or cognitive assessment of life circumstances (Santos, 2012; Diener, Lucas & Oishi, 2018).

Several authors have studied SDT in a sports context. In the study by Hutzler and Korsensky (2010), they analyzed the motivation in the practice of physical activity in people with intellectual disabilities. Also the study by Moltó and Bruna (2017), investigate 74 individuals with intellectual disabilities, investigating their relationship with sport, satisfaction with life and self-determination. In his study, Serra (2010) evaluated motivation and fitness in gyms. However, despite the existence of several studies on the discipline, more research is still needed to clarify descriptively and sufficiently exhaustively the importance of motivation in the practice of adapted sports, thus presenting athletes with IDD, where studies are scarce.

In this sense, the objectives of the study were to verify the levels of self-determination and subjective well-being of athletes who are members of the PCOS and to compare the variables under analysis according to gender. According to the existing literature, we hope to find a positive relationship between basic psychological needs and motivation with life satisfaction, a positive relationship between basic psychological needs and motivation confronting positive attachment and also significant differences between genders.

Methodology

The variables used in this research are quantitative in nature (responses given in the questionnaires during the signals), data collection was done only once and thus characterized this study as transverse and quantitative (Minayo, 2017).

Participants were selected for convenience. A total of 94 participants aged between 11 and 63 years ($M=32.6 \pm SD=13.8$), of which 71.3% were male and 28.7% female, with a number of hours of weekly practice, up to two hours of training (36.2%), 3 to 5 hours of training (39.4%), 6 to 8 hours of training (19.1%) and 9 hours or

more of training (5.3%), with $\leq 5.23 \pm SD=4.60$ years of practice, competitors of various individual sports (42.6%), collective modalities (16%), and individual and collective modalities (41.5%). Only athletes with DID were used for data analysis. Participants were recruited from institutions/schools with aggregation to the SOP. Only participants were able to answer the questionnaires, even if, with the support of a significant one. All participants were informed about the objectives of the study and gave their informed consent to participate in the study.

Procedures

For data collection, the Portuguese versions validated the Basic Psychological Needs Exercise Scale (Monteiro, Marinho, Moutão, Couto, Antunes & Cid, 2016), the Behaviour Regulation Sport Questionnaire (Monteiro, Moutão & Cid, 2018), the Satisfaction with Life Scale (Neto, 1993) and the Positive and Negative Scale (Galinha & Pais-Ribeiro, 2005) were used. The application of the scales was made in the presence of a significant one for the athlete, given his condition of intellectual and developmental difficulty.

Statistical procedures

After the data collection, we proceed to its treatment using the SPSS statistical software (Statistical Package for Social Science) version 21 where we conducted a descriptive and inferential statistical. The internal consistency analysis of the scales applied was performed by calculating the alpha and Cronbach and Kolmogorov-Smirnov Test, as well as the descriptive analysis of the data and the application for gender comparison of the nonparametric Test U Mann-Whitney, attending a significance level of 0.05. Subsequently, we applied the linear regression test with the variables of self-determination (independent variable), which allowed us to know if these are predictors of better life satisfaction indexes and positive affects (dependent variables).

Results

Table 1 shows a general characterization of the results in relation to the variables evaluated, where the minimum, maximum, mean, standard deviation, cronbach alpha values of each category and the respective values of the Kolmogorov Smirnov normality test are presented. As for the results of the Kolmogorov Smirnov test, we can see that only the variable l of

positive attachment (0.070) to assume and a normal distribution of the data (Sig.>0.05). On the other hand, the remaining variables assumed non-normal distribution. According to Murphy and Davidshofer (1988), we can see that Cronbach's Alphas of variables with a value greater than and equal to 0.80 consider themselves «moderate to high», while variables with values between 0.70 and 0.60 are reputed to be «low level», thus the values allow us to ensure that the questionnaire has obtained an appropriate reliability. Satisfaction with life and the size of negative attachment, were the variables that reached the highest reliability index, presenting an alpha value of 0.84, followed by the autonomous motivation with 0.81, the controlled motivation and the dimension of the relationship (BPN) with 0.80, the dimension of competence (BPN) and the positive affects with 0.70 and finally the motivation and autonomy dimension (BPN) with 0.62 and 0.60, respectively. According to Murphy and Davidshofer (1988), variables with a value greater than and equal to 0.80 are considered «moderate to high», while variables with values between 0.70 and 0.60 are reputed as «low level».

Table 1
Descriptive and normality statistics of motivation variables, Basic Psychological Needs, Satisfaction with Life, Positive and Negative Attachment of athletes with DID participating in SPO

Variables	a Cronbach	KS	Mean	Minimum	Maximum	SD
Autonomy	0.581	0.000*	4.43	2.00	5.00	0.73
Competence	0.689	0.000*	4.77	3.67	5.00	0.36
Relation	0.774	0.000*	4.84	3.67	5.00	0.35
M. Autonomous	0.811	0.000*	6.70	4.36	7.00	0.51
M. Controlled	0.780	0.001*	2.04	1.00	6.00	1.23
Amotivation	0.616	0.000*	1.90	1.00	6.00	1.20
Satisfaction with Life	0.842	0.000*	6.34	1.75	7.00	1.06
Att. Positives	0.688	0.070	4.30	2.67	5.00	0.60
Att. Negatives	0.838	0.027*	1.90	1.00	4.00	0.80

In order, to perceive the main differences in results as a function of gender, we present table 2. At first we performed a normality test, in which we were able to assess that our data do not present a normal distribution, so we applied the Mann-Whitney U nonparametric test. By analyzing the table we can verify the mean values and standard deviations obtained in the different variables of our research, where we can assume that, in general, the female gender presents higher values. In addition, in relation to the values of significance levels, all variables, except for life satisfaction and negative attachment, have significance values greater than 0.05. Thus, life satisfaction and negative affects show statistically significant differences between genders.

Similarly, we performed a linear regression test, in the first block we intend to know if the satisfaction of the dimensions of basic psychological needs (independent variable or predictor) predicts good levels of satisfaction

Table 2

Significance level of the differences for the variables of Motivation, Basic Psychological Needs, Life Satisfaction, Positive and Negative Attachment of athletes with DID participating in SPO as a function of gender

Variables	Female Gender		Male Gender		Sig.
	Mean	SD	Mean	SD	
Autonomy	4.44	0.73	4.43	0.73	0.93
Competence	4.74	0.34	4.80	0.40	0.40
Relation	4.74	0.44	4.90	0.30	0.12
M. Autonomous	6.70	0.60	6.70	0.50	0.43
M. Controlled	2.25	1.30	2.00	1.21	0.40
Amotivation	2.04	1.40	1.84	1.11	0.80
Satisfaction with Life	6.00	1.34	6.50	0.90	0.03*
At. Positives	4.30	0.70	4.30	0.60	0.97
At. Negatives	2.40	0.81	1.70	0.70	0.00*

with life (dependent variable). The results indicate that the first block explains 16% ($R^2=0.16$), and autonomy has a value of $Beta=-0.07$, presenting a negative value, and this result is expected because the Beta when negative refers to an inverse relationship. However, the dimensions of competence and relationship present positive values (0.30 and 0.22, respectively), which allows us to infer that the Beta value is both better and closer to zero, as this means that there are fewer theoretical risks. Also in the table we observed a second block – of motivation, which explains 13% of life satisfaction, being $R^2=0.13$. The autonomous motivation variable shows a Beta value of 0.30, whereas the controlled motivation variable has a value of 0.09, and finally, we return to a reverse relationship in the unmotivation variable with beta value of -0.20. Therefore, the results are abonatory that the satisfaction of Basic Psychological Needs is a predictor for life satisfaction in sports athletes adapted with DID.

Table 3

Linear regression for the variables of Motivation and Basic Psychological Needs with the Satisfaction with the Life of athletes with DID participating in the SPO

Satisfaction with Life					
Variables		Beta	t	p	R2
Block 1 - Basic Psychological Needs	Autonomy	-0.07	-0.60	0.55	0.16
	Competence	0.30	2.14	0.04*	
	Relation	0.22	1.93	0.06*	
Block 2 - Motivation	M. Autonomous	0.30	2.71	0.01*	0.13
	M. Controlled	0.09	0.63	0.53	
	Amotivation	-0.20	-1.42	0.20*	

In accordance with the previous results, we observed in the table a new linear regression test to understand, in the first block, whether the satisfaction of basic psychological needs predicts good levels of positive attachment. Thus, the results reveal that this first block accounts for 23% ($R^2=0.23$), where the Beta values in the ratio are 0.30, in autonomy 0.22 and in competence 0.08. On the other hand, the second block of motivation, which elucidates 21% of the positive attachment, being $R^2=0.21$. The autonomous motivation variable has a value of 0.50, while the variables of controlled motivation and amotivation both have a Beta value of 0.02. From the above, we again found that the satisfaction of Basic Psychological Needs is a predictor for positive

affects in athletes of sports adapted with DID.

However, it is worth noting the findings of some studies, in which motivational orientation in physical and sports activities may fluctuate due to years of experience, where more experienced practitioners tend to have higher levels of extrinsic motivation, guided by external bonuses, while the less experienced tend to base their motivated conduct more intrinsically (Zarceño, Boix, Serrano, and López, 2017; Navarro-Patón, Lago-Ballesteros, and Arufe-Giráldez, 2021; Batista, Santos, Honório, Mesquita, Serrano and Petrica, 2021).

Table 4

Linear Regression for the variables of Motivation and Basic Psychological Needs with the positive affections of athletes with DID participating in the SPO

Attachment Positives					
Variables		Beta	t	p	R2
Block 1 - Basic Psychological Needs	Autonomy	0.22	2.09	0.04*	0.23
	Competence	0.08	0.67	0.50	
	Relation	0.30	2.79	0.01*	
Block 2 - Motivation	M. Autonomous	0.50	4.80	0.00*	0.21
	M. Controlled	0.02	0.11	0.91	
	Amotivation	0.02	0.20	0.90	

Discussion of Results

Regarding the analysis of BPN, we found that the mean values are more positive in the relationship, followed by competence, with autonomy being to occupy the last position. Similar results were found in the study by Fernandes (2017) when studying self-determined motivation and satisfaction with the life of adapted sports athletes in handball. Also in the study by Ferreira, Petrica and Batista (2018) we found similarities in the results by presenting moderate and high values in the same dimensions except for autonomy, positive attachment and satisfaction with life. In view of the results, we observed that BPN explain 16% of life satisfaction, since competence and relationship have positive values. Thus, we tend to agree that the more competent the athletes feel in the modality they practice, and the more socially integrated they are, the greater positive influence these dimensions will have so that the athlete can feel a better satisfaction with life. On the contrary, autonomy has a negative value, which is not a normal value, but the population with DID may present some dependence on external caregivers, explaining the lower satisfaction with life, probably to perceive the need for help for better integration. Our results also meet the study of Batista, Lercas, Santos, Honório, Serrano and Petrica (2019), to analyze the satisfaction of BPN predicting good levels of satisfaction with life as the present study also indicates. Furthermore, we intend to understand whether the satisfaction of BPN predicts good levels of positive attachment, which presented us with favora-

ble results. Also in the study by Batista, Jiménez, Lobato, Leyton and Aspano (2017), it is concluded that the athletes show good levels of self-determined motivation when practicing sports. Some studies have highlighted the importance of supporting BPN in the context of training to asin generate a predisposition and motivate athletes (Juan, Martínez and Valero, 2021).

Regarding motivation, the mean values present better results in autonomous motivation, followed by controlled motivation and motivation. Deci and Ryan (2002), tell us that controlled motivation is when the subject is driven by essentially external factors, that is, external and introjected regulation; while in autonomous motivation, the factors internal to the individual are the predominant in their motivation, which are the identified, intrinsic and integrated regulation, in turn, the absence of motivation is called amotivation. When we observe motivation as a predictor of life satisfaction, it explains 13%, with an inverse relationship in the variable of motivation in athletes with DID, which leads us to verify that no variable is significant except for controlled motivation. Similarly, the second block of motivation, it explains that motivation accounts for 21% of positive attachment, these variables of controlled motivation and amotivation both present approximate values of zero. From the above, we returned to a good satisfaction of BPN as a predictor for positive affects in athletes of Adapted Sports with DID. It is important to emphasize the importance of our results, because according to Cid, Teixeira, Bento, Vitorino, Rodrigues and Monteiro (2020) the fact that athletes feel pleasure in the practice of their modality can constitute a positive predictor in self-determined motivation, which can therefore influence subjective well-being levels. In the same context, Menêzes (2019) present identical values, although higher, which may have an explanation since the study focuses on motivation, BPN and subjective well-being in wheelchair handball athletes, that is, athletes with motor and non-intellectual disabilities as our study. Our results are in line with studies such as that of Carrón, Muñoz, Batista, Román and Castuera (2017), when studying the motivational variables and healthy lifestyles that predict the intention of being physically active, using TAD. In general, subjective well-being, that is, satisfaction with life and positive and negative attachment show us high results in their values. The Adapted Sports athletes participating in the SOP showed a high satisfaction of basic psychological needs, as well as a high autonomous motivation for competitive practice, presenting low values of controlled motivation

and motivation. This collective of athletes showed a high subjective well-being, expressed by satisfaction with life and production of positive attachment.

Regarding the comparison of variables according to gender, the main results of our study show that statistically significant differences in life satisfaction and negative attachment are verified, because the significance value is less than 0.05, which leads us to verify that this probability is very small. Overall, although descriptive, female athletes presented higher values. Thus, we can observe that there are no differences in the motivation of athletes with DID as a function of gender, observing only differences in subjective well-being (life satisfaction and negative attachment) with values more distant from each other. Also in the studies of Ferreira, Petrica and Batista (2018) and Batista, Lercas, Santos, Honório, Serrano and Petrica (2019), we have made these differences as a function of gender, although both studies also report regular sports results. Thus, we tend to agree that motivation in athletes with DID does not depend on the male or female gender, because the gender variable did not demonstrate explanatory power of the variation of motivation, being almost egalitarian, while the negative attachment and satisfaction that the athlete has of his life is different when we differentiate the gender.

And this research can be useful for researchers and professionals in the areas of Sports Sciences, Psychology and Health, which should reinforce the importance of preserving or improving the motivation of their athletes in the practice of their modalities and can be a good tool for coaches and for the potentiation of athletes with DID, not only in their practice but also in their daily lives. With this study, we can mention some strategies that may be good tools to help coaches, starting by mentioning that the coach should bet on the promotion i) of the autonomy of his athlete at the time before, during and after training, implementing situations and tasks necessary for training; (ii) the athlete's competence, showing you the importance it has in training and, iii) relationship, promoting social interactions between all athletes and also with the coach himself and/or multidisciplinary team, which will translate into a direct impact on satisfaction with the life and positive affections of the athlete himself, which in a statement, are the results concluded in this study, when we measure that the Basic Psychological Needs of autonomy, competence and social relationship predict satisfaction with life and affections.

Conclusions and Recommendations

Gender was not associated with differences in self-determined motivation and subjective well-being, showing only differences in life satisfaction and negative attachment. However, it is important to note that the number of female participants is very low compared to the male gender, which does not allow us to obtain reliable and concrete values.

In conclusion, our results reinforce the importance of athletes with DID to present a self-determined motivation, which is based on three BPN that assist athletes in decision making, these being skills, autonomy, and relationship. From the above, having the athlete with DID considerable values in motivation and BPN his subjective well-being will tend to obtain similar results.

This study has some limitations. First, the cross-sectional study does not allow us to draw causal conclusions. The use of questionnaires is also limited, and we are studying athletes with DID, that is, they show some dependence on external caregivers, although there was, in case of need, an assistant during the completion of the questionnaires. And finally, the scarcity of information on the subject Adapted Sport as well as the lack of studies applied to the population with DID.

In future investigations it would be interesting to study, in addition to the athlete, the type of coach, consider representative samples, as well as it would be pertinent to conduct longitudinal or experimental investigation for a more in-depth understanding of the theme.

Acknowledgments and filications

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