

Resilience of athletes with physical disabilities: A cross-sectional study¹

Fernando Luiz Cardoso* and Cinara Sacomori*

RESILIENCE OF ATHLETES WITH PHYSICAL DISABILITIES: A CROSS-SECTIONAL STUDY

KEYWORDS: Psychological resilience, Athletes, Physical disabilities, Validation studies.

ABSTRACT: This study focused on evaluating the resilience of 208 athletes with a physical disability and on testing the Wagnild and Young Resilience Scale. The mean resilience scores, considered to represent moderate resilience, were similar for men ($X = 132.4 \pm 30.9$) and women ($X = 131.4 \pm 35.7$). Participants with spinal cord injuries and myelomeningocele were observed to have achieved higher resilience scores, while those with cerebral palsy obtained the lowest and those with amputations or polio obtained intermediate scores ($F = 3, p = .019$). The participants in this research study displayed a significantly lower mean resilience ($X = 132.13 \pm 32.25$) than those reported in other studies with the general population. A factor analysis showed multidimensional causes, with seven factors accounting for 61.27% of the total variation. Moreover, the research tool/questionnaire showed a good internal consistency ($\alpha = .88$). The moderate resilience scores indicate that there is potential for developing these athletes' resilience.

The concept of resilience can be defined as individual adaptation to stress, trauma or unpredictability (Windle, Bennett and Noyes, 2011). It can also be defined through understanding the consequences of exposure of adults and children to these factors: i.e. some may have trouble developing appropriate coping mechanisms, while others will overcome adversity adapting to the stress, trauma, or unpredictable environment (Ceconello and Koller, 2000). In psychology, this term is also used to describe the capacity of a person or group to push themselves forward, despite the adversities of life (Vinaccia, Quiceno and San Pedro, 2007), or the capacity of an individual to display healthy development even after going through particularly adverse experiences (Rutter, 1999).

There is a profound connection between resilience and the level of social integration of individuals with disabilities. The level of resilience can demonstrate to what extent such a person, with an altered physical status, is prepared to accept their disability, freeing themselves of prejudice in order to be integrated into society (White, Driver and Warren, 2008). Athletic activity, in spite of being intimately connected with health promotion, also places practitioners in potentially risky situations, involving psychological pressure and constant evaluation, which can contribute to the individual realistically reevaluating their limitations resulting in an increased determination to overcome or adapt to these limitations (Sanches and Rubio, 2010).

Recently it has been demonstrated that resilience has a significant positive correlation with sport achievement and psychological well-being (Hosseini and Besharat, 2010). Various authors (Anderson, 2009; Groff, Lundberg and Zabriskie, 2009) have commented on the positive effects of people with physical disabilities taking part in competitive sports because enhancing athletic identity is a manner to improve self-esteem and quality of life. Another study pointed that interventions to improve quality of life in adolescents with a mobility disability may focus on reducing life stress and developing resilience by enhancing a variety of personal and social resources (Alriksson-Schmidt et al., 2007).

The resilience scale developed by Wagnild and Young (1993) is one of the few research tools used to measure levels of positive psychosocial adaptation or resilience towards important life events. This scale possesses, a priori, validity of content, and initial investigations provided a good indication of reliability (Pesce, Assis, Avanci, Santos, Malaquias and Carvalhaes, 2005; Rodriguez, Pereyra, Gil, Jofré, De Bortoli and Labiano, 2009). This research tool/questionnaire has been used in Brazil with adolescents, schoolchildren and the elderly (Avanci, Assis, Oliveira, Ferreira and Pesce, 2007; Avanci, Assis and Oliveira, 2008; Castillo and Dias, 2009; Fortes, Portuguese and Argimon, 2009; Pesce, Assis, Santos and Oliveira, 2004). Gender does not seem to be a major source of difference in the resilience scores that have been described (Lundman et al., 2007; Rodriguez et al, 2009).

Correspondence: Fernando Luiz Cardoso. Rua Pascoal Simone, 358, Coqueiros, Florianópolis, SC, Brazil. CEP: 88080-350.
E-mail: fernandocardoso.ph.d.lagesc@gmail.com

¹ Financial support: Universidade do Estado de Santa Catarina, Brazil

* Health and Sports Sciences Center at Santa Catarina State University (UDESC).

Fecha de recepción: 25 de Junio de 2012. Fecha de aceptación: 19 de Septiembre de 2013.

There is a scarcity of research on the resilience of people who have traumatic physical injury (Quale and Schanke, 2010; White et al, 2008), and likewise among athletes with disabilities. The aim of our study was examine resilience in the specific subgroup of Brazilian competitive athletes with physical disabilities, as well as to test the validity of the Wagnild and Young (1993) *Resilience Scale* in Brazil for this population . Our hypothesis is that individuals with physical disability may develop good levels of resilience in response to the challenges presented by their athletic activity.

Method

Participants

The study participants were 136 athletes aged 18 or over with physical disabilities enrolled in regional and national

competitions who signed the informed consent of the ethics committee, involved in the following sports: track and field, table tennis, swimming, weightlifting, basketball, rowing and tennis. All participants presented with one of the following types of disability: spinal cord injury, amputation, poliomyelitis, cerebral palsy, myelomeningocele, congenital malformation, muscular dystrophy, progressive spinal amyotrophy, juvenile rheumatoid arthritis, total hip prosthesis, Ehlers Danlos syndrome, Larzen syndrome and dwarfism.

In general (Table 1), the groups of male and female participants presented similar mean age, socio-economic level, duration (time living with disability) of disability and index of resilience. Also, there were no significant differences in terms of marital status, schooling, the nature of the disability and the practice of physical exercise.

	Men (n = 150)		Women (n = 58)		t Test	p
	Mean	SD	Mean	SD		
Age (years)	29.86	7.45	30.53	10.38	-0.51	n.s.
Consumer items*	1.69	1.22	1.81	1.20	-0.66	n.s.
Duration of disability (years)	19.90	11.84	20.88	12.85	-0.51	n.s.
Index of resilience**	132.40	30.91	131.41	35.73	0.20	n.s.
	N1%	N	%	χ²	p	
Unmarried	88	59	37	65	2.44	n.s.
Schooling						
Primary school	25	22	11	19	6.22	n.s.
Secondary school	75	57	29	50	6.22	n.s.
Higher education	48	32	18	31	6.22	n.s.
Type of disability						
Congenital	28	19	16	28	4.76	n.s.
Acquired	122	81	41	71	4.76	n.s.
Engages in physical exercise	141	95	57	98	1.4	n.s.
Resilience						
Low	26	17	9	15	0.67	n.s.
Moderate	76	51	27	47	0.67	n.s.
High	48	32	22	38	0.67	n.s.

Note: n.s. = non-significant considering $p < .05$ * Mean of four possible items, ** Mean of resilience scores between 25 and 175 according to the WAGNILD and YOUNG Scale (1993).

Table 1. Characterisation of the Participants.

The mean resilience scores were also categorized by subdividing the participants in different groups based on schooling, age, marital status, time since injury and/or type of disability (Table 2). Overall, the participants between 28 and 37 years of age, who had completed high school, and were separated or widowed presented the highest mean resilience for both sexes.

Instruments

The questionnaire was developed by means of a qualitative study in the USA involving 24 adult women preselected for having successfully adapted themselves to the adversities of life.

Each one of them was asked to describe how they coped when faced with negative experiences. From their narratives five components were identified as factors for resilience: serenity, perseverance, self-confidence, meaning of life and self-sufficiency.

After statistical analysis the authors found two factors of resilience: the first, personal competence, is comprised of personal capacity, independence, self-control, and perseverance. The second factor, ability and acceptance of oneself and of life, is composed of the capacity to adapt and be flexible (Wagnild and Young, 1993).

Resilience of athletes with physical disabilities

	Male			Female		
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>
Schooling						
Primary school	22	120.55	41.84	11	108.55	51.82
Secondary school	72	136.61	29.84	28	138.18	23.70
Higher education	45	132.24	26.55	18	134.56	37.17
Total	139	132.65	31.32	57	131.32	36.04
Age						
16-27 years	51	129.82	31.85	19	128.53	35.02
28-37 years	62	136.08	27.33	17	135.53	34.37
Over 38 years	27	128.10	39.24	18	128.78	42.49
Total	140	132.26	31.51	54	130.81	36.91
Marital status						
Single	88	130.80	30.89	37	132.41	33.51
Separated/Widowed	4	146.50	19.62	2	137.00	14.14
Living with partner/Married	58	133.87	31.65	19	128.89	42.11
Total	150	132.40	30.91	58	131.41	35.73
Duration of disability						
1-15 years	53	133.50	27.63	20	129.85	36.54
16-29 years	56	134.05	29.51	20	131.45	35.55
Over 30 years	41	128.73	36.76	17	131.47	37.46
Total	150	132.40	30.91	57	130.89	35.82
Type of disability						
Spinal cord injury	20	123.12	20.19	1	126.20	-
Amputation	20	121.19	26.97	5	126.41	14.03
Poliomyelitis	19	130.53	22.88	8	130.11	12.85
Cerebral palsy	6	134.71	8.85	4	119.70	27.32
Myelomeningocele	5	117.14	10.60	5	117.14	10.60
Congenital malformation	5	137.60	13.14	3	79.33	70.54
Muscular dystrophy	1	152.00	-	1	141.00	-
Spinal amyotrophy	-	-	-	1	137.00	-
Juvenile rheumatoid arthritis	1	142.00	-	-	-	-
Total hip prosthesis	1	139.00	-	-	-	-
Ehlers Danlos Syndrome	-	-	-	1	139.00	-
Larzen Syndrome	-	-	-	1	153.00	-
Dwarfism	-	-	-	2	72.50	-
Total	115	131.60	31.50	45	133.62	32.59

Note: The total N is variable because there was some missed information.

Table 2. Mean Levels of Resilience as a Function of the other Variables.

The questionnaire consists of 25 items described in a positive manner with Likert-type responses varying from 1 (completely disagree) to 7 (completely agree). The scores ranged from 25 to 175 points, with high scores indicating greater resilience. Scores of over 147 indicate high resilience, between 121 and 146 moderate resilience and scores lower than 121 low resilience.

The psychometric properties of this questionnaire have previously been examined in distinct cultures (Table 3) through the three perspectives suggested by Pasquali (2005): theoretical, empirical, and analytical. The theoretical perspective makes explicit the theory of the construct and how the items operate, in Brazil (Pesce et al, 2005). The empirical perspective defines the

stages and techniques of the application of the questionnaire to determine the psychometric quality. Finally the analytical perspective establishes procedures for the carrying out of statistical analyses that will lead to a valid research tool/questionnaire or to the improvement of an existing one. This questionnaire has been used in Spain (Heilemann, Lee and Kury, 2003), Portugal (Pesce et al, 2005), Sweden (Lundman ,

Strandberg, Eisemann, Gustafson and Brulin, 2007), Colombia (Jaramillo-Vélez, Ospina-Muñoz, Cabarcas-Iglesias and Humphreys, 2005) and in Peru (Bulnes, Ponce, Huerta, Álvarez, Santiváñez, Atalaya et al., 2008).

Thus, the design of this study was very similar to earlier investigations and its primary objective was to test the variability of this scale in Brazil in a specific population.

Study	N	Population Type	Age		Relience of the sample			Psychometric properties
			Mean	SD	Mean	SD	α	
Wagnild and Young (1993) - USA	39	Female spouses and carers of individuals with Alzheimer's	71.5	7.9	138.4	8.6	.85	1. personal competence comprised of personal capacity, independence, self-control, perseverance and ability. 2. acceptance of oneself and of life comprising capacity to adapt and flexibility.
Klass (1989) - USA	58	Female graduate students	31.8	6.1	139.1	14.5	.86	
Cooley (1990) - USA	43	Female graduate students	33.4	6.6	138.8	14.1	.85	
Killien and Jarret (1993) - USA	130	Women in the post-partum period after birth of first child	30.7		141.7	14.9	.90	
Heilemann et al (2003) - USA	147	Women of Mexican origin	28.0		147.3	25.0	.90	
Pesce et al - (2005) - Brazil	997	Adolescents in secondary school	15.4	1.4	72.6		.80	1. personal realisation (20.6%) 2. self-determination (6.7%) 3. assertive adaptation (5.5%)
Lundman et al (2007) - Sweden	1719	Women 1248 men 471	59.0	19.2	141.0	17.7	.80	1. equanimity, 2. perseverance 3. meaningfulness 4. existential aloneness 5. self-reliance
Jaramillo-Vélez et al (2005) - Colombia	199	Battered women	35.5	10.0	147.3	25.0	.90	1. personal attitude 2. self-acceptance
Bulnes et al (2008) - Peru	394	Women and men	17.0		77.9	8.9	.70	1. discipline and order 2. realisation and autonomy
Rodriguez et al (2009) - Argentina	222	Women 152 men 70	30.9	12.1	135.6	13.0	.72	1. capacity for self-efficacy 2. capacity for decisions and meaning in life 3. cognitive avoidance (32.6% total)
Schumacher et al (2005) - Germany	2031	Women	48.2		133.7	22.5	.95	

Table 3. Comparison with other Validation Studies.

Procedure

This investigation was evaluated by an Ethic Committee and each participant received a questionnaire to be completed individually and anonymously, and then deposited in a sealed urn that was opened only at the end of data collection. Data were collected between the months of August 2007 and July 2008.

The study was submitted to and approved by the Ethics Committee of Santa Catarina State University (*Universidade do Estado de Santa Catarina - UDESC*) under reference n°: 03/2007 (July 9th, 2007). The original instrument in English was first translated into Portuguese and back into English in order to identify possible translation discrepancies. Participation in the investigation was initiated by two assistants at various competition venues and accommodation sites, inviting competing athletes to participate. Those who agreed to take part received a blank questionnaire to be individually and anonymously completed, folded, and placed in an envelope. The participant then deposited the envelope in a sealed urn, which was opened only at the conclusion of data collection.

Data Analysis

The data was tabulated and analysed through descriptive (frequencies, mean, median, standard deviation, distribution) and inferential tests using the statistics program SPSS. To investigate possible differences in terms of socio-demographic characteristics among the participants Student's *t* test and the X^2 test were applied. Student's *t* test was used to compare the resilience of men and women, while One-way ANOVA followed by Duncan's *post hoc* test was employed to compare the distinct groups of athletes with disabilities. The data from this study were compared with those of similar investigations in the literature by means of the One-Sample *t* test.

The internal reliability and dimensionality of the questionnaire were analysed, respectively, by calculating Cronbach's alpha and through exploratory factor analysis by extracting the main components using the *Varimax* method, which simplifies the factors.

Results

Resilience Scores as a Function of Sex and Type of Disability

The participants in this study presented a moderate index of resilience ($X = 132.13 \pm 32.25$). Of the 25 items on the scale, only three exhibited significant differences between men and women, with the men having higher scores on “I take things one day at a time” (X men = 5.21 ± 1.87 , X women = 4.52 ± 1.84 , $t = 2.32$, $p = .02$) and “I do not dwell on things that I can’t do anything about” (X men = 4.88 ± 1.81 , X women = 4.27 ± 2.05 , $t = 2.01$,

$p = .05$). Meanwhile, the women had higher scores on “In an emergency, I’m someone people can generally rely on” (X men = 5.97 ± 1.47 , X women = 6.44 ± 1.01 , $t = -2.12$, $p = .04$).

When the resilience scores among the types of physical disabilities with the greatest frequency in the group studied were compared (Table 4), it was found that the participants with myelomeningocele and spinal cord injury exhibited the highest levels of resilience and those with cerebral palsy the worst, with a significant difference being present between the best and the worst scores.

	<i>N</i>	Mean	<i>SD</i>	ANOVA
Spinal cord injury	33	137.2 ^b	18.9	
Amputation	35	133.4	25.8	$F = 3$
Poliomyelitis	44	135.5	24.4	$df = 4$
Cerebral palsy	19	113.7 ^a	52.6	$p = .02$
Myelomeningocele	12	145.8 ^b	13.7	

Note: a and b represent results of Duncan post-hoc test.

Table 4. Variation in the Index of Resilience by Physical Disability.

Comparison of Resilience of Athletes with Physical Disabilities with other Studies

Compared to other investigations that employed the same scale, the athletes with physical disabilities studied here had a mean resilience ($X = 132.13 \pm 32.25$) significantly lower than: Klass (1989) ($X = 139.1$, $t = -3.07$, $p = .002$), Cooley (1990) ($X = 138.9$, $t = -3.07$, $p = .002$), Killien and Jarret (1993) ($X = 141.7$, $t = -4.41$, $p \leq .001$), Heilemann et al (2003) ($X = 147.3$, $t = -6.65$, $p \leq .001$) and Jaramillo-Vélez et al (2005) ($X = 147.30$, $t = -6.65$, $p \leq .001$). However they had a mean resilience similar to that reported in other studies: Rodriguez et al (2009) ($X = 135.60$, $t = -1.73$, $p = n.s.$) and Schumacher et al (2005) ($X = 133.78$, $t = -.837$, $p = n.s.$).

Internal Reliability and Dimensionality of the Scale

The factor analysis (Table 5) generated 7 factors that together accounted for 61.27% of the total variation. The seven factors being: self-determination, assertive adaptation, independence from the environment, personal security, discipline, patience and perseverance. Despite the fact that the Resilience Scale applied to the athletes with physical disabilities is multidimensional, it produced a good α of .88.

Discussion

Resilience Scores as a Function of Gender and Type of Disability

The Resilience Scale used here did not distinguish between males and females with physical disability, in terms of overall score, as previously reported for general population of Argentina and Sweden (Rodriguez et al, 2009; Lundman et al, 2007) and

for Iranian athletes (Hosseini and Besharat, 2010). A recent review of the studies that used this scale indicated that, for most studies, there was no differences between genders (Wagnild, 2009).

With regard to specific aspects of the questionnaire, our data indicate that men are slightly less anxious about coping with difficulties, considering that men ranked better than women on: “I take things one day at a time” and “I do not dwell on things that I can’t do anything about”. At the same time, the women were found to show a higher capacity to cope with new problems. These findings are related to the explanation of Ben-Zur and Zeidner (1996) about gender differences in coping strategies. The authors demonstrated that, considering daily stressors, men tend to cope in the problem-focused model, tending to use strategies as planning and executing a course of action. The explanation for this is that men are socialized to be instrumental in their coping behaviours, and are discouraged from seeking emotional support (Ben-Zur and Zeidner, 1996). Meanwhile women tend to cope with life stressors using a emotion-focused model, involving efforts geared to modify the affective and physiological reactions (Ben-Zur and Zeidner, 1996).

The significantly greater resilience found among individuals with spinal cord injury and myelomeningocele as compared to the lower resilience seen in those with cerebral palsy may be explained by the extent of their functionality. This is because the first two conditions, in general, allow movement of the upper limbs and trunk, despite the limitation imposed by the use of a wheelchair in contrast to cerebral palsy which tends to impact at least partially the functionality of the upper limbs.

Item/Factor	1	2	3	4	5	6	7
10 – I am determined.	.78						
1 – When I make plans, I follow through with them.	.68						
21 – My life has meaning.	.65						
3 – I am able to depend on myself more than anyone else.	.60						
6 – I feel proud that I have accomplished things in life.	.57						
8 – I am friends with myself.	.55						
14 – I have self-discipline.	.44						
15 – I keep interested in things.		.82					
4 – Keeping interested in things is important to me.		.73					
19 – I can usually look at a situation in a number of ways.		.59					
18 – In an emergency, I’m someone people can generally rely on.		.45					
25 – It’s okay if there are people who don’t like me.			.70				
2 – I usually manage one way or another.			.55				
13 – I can get through difficult times because I’ve experienced difficulty before.			.53				
9 – I feel that I can handle many things at a time.				.78			
7 – I usually take things in my stride.				.68			
5 – I can be on my own if I have to.				.52			
11 – I seldom wonder what the point of it all is.				.50			
20 – Sometimes I make myself do things whether I want to or not.					.70		
22 – I do not dwell on things that I can’t do anything about.						.78	
12 – I take things one day at a time.						.68	
17 – My belief in myself gets me through hard times.							.76
16 – I can usually find something to laugh about.							.55
23 – When I’m in a difficult situation, I can usually find my way out of it.							.46
Number of items per factor	07	04	03	04	01	02	03

Note: Total Cronbach’s alpha = .88.

Table 5. Factor Analysis

Comparison of the Resilience of Athletes with Physical Disabilities with that in other Studies

Overall, the participants in this investigation presented indexes of resilience considered moderate in relation to those observed in studies of other populations. The athletes with physical disability studied in this research displayed a significantly lower mean resilience scores than those reported in other studies with samples of the general population (Heilemann et al, 2003; Lundman et al., 2007; Rodriguez et al., 2009) and with battered women (Jaramillo-Vélez et al., 2005). Alriksson-Schmidt et al (2007) assume that resilience acts as a protective factor in individuals with physical disability contributing positively to quality of life. The same authors showed that adolescents with mobility disabilities presented lower mean scores in quality of life compared to general adolescent sample. It has been demonstrated that increased levels of resilience in athletes is related to an increased probability of athletic achievement and positive psychological effects (Hosseini and Besharat, 2010).

Unfortunately, the research found on resilience in people with physical disabilities was theoretical (White et al, 2008) or used other forms of assessment (Quale and Schanke, 2010), making comparison of the results difficult. The latter study reported that optimists who had been exposed to an event which left physical repercussions/sequellae have greater resilience than pessimists (Quale and Schanke, 2010). According to Anderson (2009) the definition of “athlete” takes on meaning similar to that in ablebodied individuals and the development of an athletic identity is pivotal in improving social interactions and quality of life.

Internal Reliability and Dimensionality of Scale

In relation to the results of the factor analyses carried out in other studies, that of the present work showed itself to be spread over more factors, despite explaining a good percentage of the total variance (7 factors that explained 61.27%). Two studies (Bulnes et al, 2008; Jaramillo-Vélez et al., 2005) with relatively younger participants demonstrated, in part, the dimensional dichotomy proposed by Wagnild and Young (1993), of *personal*

competence and acceptance of oneself and of life. On the other hand, Bulnes et al (2008) named them *personal attitude* and *self-acceptance*, while Jaramillo-Vélez et al. (2005) called them *discipline and order* and *realization and autonomy*. Others (Pesce et al, 2005; Rodriguez et al, 2009) found three main factors, broadening the theoretical construct of resilience with Pesce et al (2005) calling them *personal realization*, *self-determination* and *assertive adaptation*, while Rodriguez et al. (2009) calling them *self-efficacy*, *capacity to make decisions and meaning in life* and *cognitive avoidance*. The study by Lundman et al (2007) was just as multidimensional as ours, with the five factors being named equanimity, meaningfulness, perseverance, existential aloneness and self-reliance.

In spite of the multidimensionality of the *Resilience Scale* when applied to the athletes with physical disabilities, it still produced a good α of 0.88, similar to those obtained in studies with adolescents (Table 1). This multidimensionality is probably related to cultural variation, since all of the investigations carried out with the scale have produced very good indexes of internal reliability. White et al (2008) consider resilience to be a multidimensional and dynamic construct consisting of behaviours, thoughts and actions that can be learned.

Conclusion

The athletes in this study presented a moderate index of resilience and were, on average, lower than those in studies on

able-bodied populations. Consequently, there appears to be clinical potential for the development of resilience in this population that, indirectly, could contribute to an improvement in sporting performance. What still remains in question is why individuals with physical disabilities tend to present lower levels of resilience compared to individuals without disabilities? Other questions also arise. Can resilience be learned through coaching or instruction? Can resilience be increased in those with lower levels by exposure and/or interaction with high resilience individuals?

The Wagnild and Young *Resilience Scale* (1993) would seem to be a valid instrument in measuring the dimensions of *personal competence and acceptance of oneself and of one's life* in athletes with or without physical disabilities. The multidimensionality found in this study may be explained by the etiological complexity of each disability studied here.

We suggest that this scale could be used to compare the resilience of athletes with physical disabilities with that of non-athlete individuals with disabilities. The limitations of this study lie in the fact that a large variety of physical disabilities were examined, without control of the level of functionality of the individuals. However, the strength of this study is its innovative look at resilience in a specific population that tried to overcome disability through engaging in athletic activity.

RESILIENCIA DE ATLETAS CON DISCAPACIDAD FÍSICA: ESTUDIO TRANSVERSAL

PALABRAS CLAVE: Resiliencia psicológica, Deportistas, Discapacidad física, Estudios de validación.

RESUMEN: El objetivo de este estudio fue evaluar la resiliencia de 208 atletas con discapacidades físicas y examinar la Escala de Resiliencia de Wagnild e Young. Las puntuaciones medias de la resiliencia fueron similares para los hombres ($X = 132.4 \pm 30.9$) y mujeres ($X = 131.4 \pm 35.7$), considerado como resiliencia moderada. Se observó que los participantes con lesión de la médula espinal y mielomeningocele mostraron mejores resultados en resiliencia, mientras que aquellos con parálisis cerebral presentaron los peores y los amputados y con la polio tenían puntuaciones intermedias ($F = 3, p = .019$). Los participantes en este estudio tenían una media de resiliencia ($X = 132.13 \pm 32.25$) significativamente menor que la reportada en otros estudios que evaluaban la población general. El análisis factorial se mostró multidimensional, con siete factores responsables por 61.27% de la varianza total. Además, el instrumento mostró buena consistencia interna ($\alpha = .88$). La moderada resiliencia encontrada en este estudio indica que existe un potencial para desarrollo de la resiliencia en estos atletas.

RESILIÊNCIA DE ATLETAS COM DEFICIÊNCIA FÍSICA: ESTUDO TRANSVERSAL

PALAVRAS-CHAVE: Resiliência psicológica, Atletas, Deficiência física, Estudos de validação.

RESUMO: O objetivo deste estudo foi avaliar a resiliência de 208 atletas com deficiência física e testar a Escala de Resiliência de Wagnild e Young. A média dos escores de resiliência foram similares para homens ($X = 132.4 \pm 30.9$) e mulheres ($X = 131.4 \pm 35.7$), considerados como resiliência moderada. Foi observado que os participantes com lesão medular e mielomeningocele mostraram melhores escores de resiliência, enquanto aqueles com paralisia cerebral apresentaram os piores e os amputados e com poliomielite tiveram escores intermediários ($F = 3, p = .019$). Os participantes deste estudo apresentaram uma média de resiliência ($X = 132.13 \pm 32.25$) significativamente menor que os relatados em outros estudos avaliando a população em geral. A análise fatorial mostrou-se multidimensional, com sete fatores responsáveis por 61.27% da variância total. Além disso, o instrumento demonstrou boa consistência interna ($\alpha = .88$). Os escores de resiliência moderados indicam que existe um potencial para desenvolvimento da resiliência nesses atletas.

References

- Alriksson-Schmidt, A. I., Wallander, J. and Biasini, F. (2007). Quality of life and resilience in adolescents with a mobility disability. *Journal of pediatric psychology*, 32(3), 370-9. doi:10.1093/jpepsy/jsl002
- Anderson, D. (2009). Adolescent Girls' Involvement in Disability Sport: Implications for Identity Development. *Journal of Sports and Social Issues*, 33(4), 427-449. doi: 10.1177/0193723509350608.
- Avanci, J. Q., Assis, S. G., Oliveira, R. V. C., Ferreira, R. M. and Pesce, R. P. (2007). Fatores Associados aos Problemas de Saúde Mental em Adolescentes. *Psicologia Teoria e Pesquisa*, 23(3), 287-294. doi: 10.1590/S0102-37722007000300007.
- Avanci, J. Q., Assis, S. G. and Oliveira, R. V. C. (2008). Sintomas depressivos na adolescência: estudo sobre fatores psicossociais em amostra de escolares de um município do Rio de Janeiro, Brasil. *Cadernos de Saúde Pública*, 24(10), 2334-2346. doi: 10.1590/S0102-311X2008001000014.
- Ben-zur, H. and Zeidner, M. Gender Differences in coping reactions under community. *Personality and Individual Differences*. 1996; 20(3):331-40.
- Bulnes, M. B., Ponce, C. D., Huerta, R. R., Álvarez, C. T., Santiváñez, W. O., Atalaya, M. P. et al. (2008). Resiliencia y estilos de socialización parental em escolares de 4to y 5to año de secundaria de Lima Metropolitana. *Revista de Investigación en Psicología*, 11(2), 67-91.
- Castillo, J. A. J. and Dias, P. C. (2009). Auto-regulação, resiliência e consumo de substâncias na adolescência: contributos da adaptação do questionário reduzido de auto-regulação. *Psicologia, Saúde & Doenças*, 10(2), 205-216.
- Cecconello, A. M. and Koller, S. H. (2000). Competência social e empatia: Um estudo sobre resiliência com crianças em situação de pobreza. *Estudos de Psicologia*, 7(1), 71-93.
- Cooley LL. *Exercise, hardiness and the stress-illness relationship*. Unpublished Master's thesis. University of Washington, Seattle, WA; 1990.
- Fortes, T. F. R., Portuguese, M. W. and Argimon, I. I. L. (2009). A resiliência em idosos e sua relação com variáveis sociodemográficas e funções cognitivas. *Estudos de Psicologia*, 26(4), 455-463. doi: 10.1590/S0103-166X2009000400006.
- Groff, D. G., Lundberg, N. R. and Zabriskie, R. B. (2009). Influence of adapted sport on quality of life: Perceptions of athletes with cerebral palsy. *Disability and Rehabilitation*, 31(4), 318-326. doi: 10.1080/09638280801976233.
- Heilemann, M. V., Lee, K. and Kury, F. S. (2003). Psychometric Properties of the Spanish Version of the Resilience Scale. *Journal of Nursing Measurement*, 11(1), 61-72.
- Hosseini, S. A. and Besharat, M. A. Relation of resilience whit sport achievement and mental health in a sample of athletes. *Procedia - Social and Behavioral Sciences* [Internet]. 2010 [cited 2012 Jan 27];5:633-8.
- Jaramillo-Vélez, D. E., Ospina-Muñoz, D. E., Cabarcas-Iglesias, G. and Humphreys, J. (2005). Resiliencia, Espiritualidad, Aflicción y Tácticas de Resolución de Conflictos em Mujeres Maltratadas. *Revista de Salud Pública*, 7(3), 281-292. doi: 10.1590/S0124-00642005000300004.
- Killien, M. and Jarrett, M. E. (1993). *Return to work: Impact on postpartum mothers health*. Unpublished raw data.
- Klass, M. C. Effectiveness of hardiness and sleep as resources against stress-related illness. Unpublished Master's thesis. University of Washington, Seattle, WA; 1989.
- Lundman, B., Strandberg, G., Eisemann, M., Gustafson, Y. and Brulin, C. (2007). Psychometric Properties of the Swedish Version of the Resilience Scale. *Scandinavian Journal of Caring Sciences*, 21(2), 229-237. doi: 10.1111/j.1471-6712.2007.00461.x.
- Pasquali, L. (2005). *Elaboração de instrumentos psicológicos*. [Elaboration of psychological instruments]. São Paulo: Casa do Psicólogo.
- Pesce, R. P., Assis, S. G., Avanci, J. Q., Santos, N. C., Malaquias, J. V. Y. and Carvalhaes, R. (2005). Adaptação transcultural, confiabilidade e validade da escala de resiliencia. *Cadernos de Saude Publica*, 21(2): 436-448. doi: 10.1590/S0102-311X2005000200010.
- Pesce, R. P., Assis, S. G., Santos, N. C. and Oliveira, R. V. C. (2004). Risco e Proteção: Em Busca de Um Equilíbrio Promotor de Resiliência. *Psicologia: Teoria e Pesquisa*, 20(2), 135-143.
- Quale, A. J. and Schanke, A. (2010). Resilience in the face of coping with a severe physical injury: a study of trajectories of adjustment in a rehabilitation setting. *Rehabilitation Psychology*, 55(1), 12-22. Doi: 10.1037/a0018415.
- Rodríguez, M., Pereyra, M. G., Gil, E., Jofré, M., De Bortoli, M. and Labiano, L. M. (2009). Propiedades psicométricas de la escala de resiliencia versión argentina. *Evaluar*, 9, 72-82.
- Rutter, M. (1999). Resilience concepts and findings: implications for family therapy. *Journal of Family Therapy*, 21, 119-144.
- Sanches, S. M. and Rubio, K. (2010). Reflexões sobre o conceito de resiliência: superando adversidades no contexto esportivo. *Polêmica*, 9(2), 92-98.
- Schumacher, J., Leppert, K., Gunzelmann, T., Strauss, B. and Brahler, E. (2005). The resilience scale - A questionnaire to assess resilience as a personality characteristic. *Zeitschrift Fur Klinische Psychologie Psychiatrie Und Psychotherapie*, 53(1), 16-39.
- Vinaccia, S., Quiceno, J. M. and San Pedro, E. M. (2007). Resiliencia em adolescentes. *Revista Colombiana de Psicologia*, 16, 139-146.
- Wagnild, G. (2009). A review of the resilience scale. *Journal of Nursing Measurement*, 17(2), 105-113.
- Wagnild, G. M. and Young, H. M. (1993). Development and psychometric evaluation of resilience scale. *Journal of Nursing Measurement*, 1, 165-78.
- White, B., Driver, S. and Warren, A. (2008). Considering resilience in the rehabilitation of people with traumatic disabilities. *Rehabilitation Psychology*, 53(1): 9-17. HYPERLINK "http://dx.doi.org/10.1037/0090-5550.53.1.9" \t "doilink" doi:10.1037/0090-5550.53.1.9.
- Windle, G., Bennett, K. M. and Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes* 9(8), 1-18. doi:10.1186/1477-7525-9-8.