

Hardiness and social context in young university athletes

Personalidad resistente y contexto social en deportistas jóvenes universitarios

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Abstract

Sport and the environments where people interact help to control stress, thus improving the emotional instability of athletes. The objective of this work is to identify the relationship between Hardiness variables and those of the social context in athletes. The sample is made up of 56 athletes from different sports, 29 men [51.8%] and 27 women [48.2%] participated, the age of the athletes ranged between 18 and 28 years, with a mean of 21.38 and a standard deviation of 2.37. The design of this research is non-experimental, cross-sectional and correlational. The instruments used were the Hardiness Questionnaire in Central American and Caribbean Athletes and the Questionnaire on Perception of Factors Related to Excellence in Sport. The results found showed adequate reliability for the sample and the presence of relationships between variables, highlighting that the Hardiness variables and the coach variable are significant and positive in their trifactorial and unifactorial form. Conclusion. Hardiness or resistance to stress is strengthened thanks to the contributions of figures such as the coach, the people who support their growth process such as administrators or leaders of sports institutes or sponsors, the support of a multidisciplinary group such as a psychologist and the athlete's own beliefs about his or her abilities.

Hardiness and social context in young university athletes

Objectives

Methodology

Contribution



Commitment, Control, Challenge, Sport

Resumen

El deporte y los ambientes donde las personas interactúan ayudan a controlar el estrés, por lo tanto, mejoran la inestabilidad emocional de los deportistas. El objetivo de este trabajo es identificar la relación entre las variables de la personalidad resistente y las del contexto social en deportistas. La muestra está conformada por 56 atletas de diversos deportes, participaron 29 hombres [51.8%] y 27 mujeres [48.2%], la edad de los atletas osciló entre los 18 y 28 años, con una media de 21.38 y una desviación típica de 2.37. El diseño de esta investigación es no experimental, transversal y correlacional. Los instrumentos utilizados fueron el Cuestionario de Personalidad Resistente en Deportistas Centroamericanos y del Caribe y Cuestionario sobre Percepción de Factores Relacionados con la Excelencia en el Deporte. Los resultados encontrados mostraron una fiabilidad adecuada para la muestra y la presencia de relaciones entre variables, destacando que las variables de la personalidad resistente y la variable entrenador son significativas y positivas en su forma trifactorial y unifactorial. Conclusión. La personalidad resistente o resistencia al estrés se fortalece gracias a los aportes de figuras como el entrenador, las personas que apoyan su proceso de crecimiento como administradores o dirigentes de institutos del deporte o patrocinadores, el apoyo de un grupo multidisciplinar como un psicólogo y las creencias propias del deportista de sus habilidades.

Personalidad resistente y contexto social en deportistas jóvenes

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Compromiso, Control, Desafío, Deporte

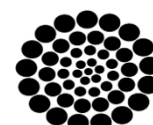
Area: Promotion of frontier research and basic science in all fields of knowledge

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Introduction

Stress today negatively affects the physical and mental health of the population [Pillajo et al., 2022; De Francisco et al., 2025], such as anxiety [González et al. 2022; Cano et al., 2024], depression, difficulty concentrating, worry, or risk of injury [Mata et al., 2023], and sleep problems. This is exacerbated if people do not engage in physical activity or sports [Cano et al., 2024], which would help regulate the community's emotional perceptions.

Even when athletes are stressed, thanks to the nature of sport and its characteristics and the various situations they face, such as competing against their opponents, they are better able to regulate the effects of stress [Galvez, 2022]. This ability to cope with stress is called hardiness [Jaenes, 2009]. This concept describes the characteristics that can push people to be more or less resilient to stress.

Scholars of Hardiness or hardiness establish that the concept arises from the curious research of a student of the authors Maddi and Kobasa [Maddi, 2002], where they observed that some subjects had chronic degenerative diseases caused by stress, but another part of the population, when faced with the stressful situation, somehow felt that they were in a learning process, believing that they had the ability to cope with and solve the situation, but with the understanding that this difficulty provided them with learning, turning the problem into an opportunity for growth and development, [Kobasa, 1979b; Kobasa, et al., 1982] which, as a result, minimizes the negative effects of stress [Godoy-Izquierdo and Godoy, 2002]. Hardiness has been studied in health contexts [Kobasa, 1979a], for example, in doctors and nurses, as well as in professions such as firefighters [Batres & Maiztegui, 2025], teachers and caregivers of sick relatives, sports referees [Ponce et al., 2024], and athletes [Jaenes et al 2009; Ponce-Carbajal et al 2020; Ponce-Carbajal, 2021; Tiscareño-Caldera, 2024].

Hardiness, is composed of three variables: control, commitment, and challenge. According to the literature, this concept can be used in a unifactorial or trifactorial manner, and when used in various studies, it normally shows adequate reliability for the sample, which facilitates its use and practicality for application [Jaenes, 2009]. This scale consists of 18 items, six for each variable.

The control variable is defined as a belief that each person has the ability to influence outcomes through their own efforts. In the case of the definition of commitment, it was found that personal involvement is when the individual actively and significantly engages with their goals even in the face of complications or adversity, and the challenge is represented by a positive attitude even in a surprising or changing environment, viewing challenges as opportunities for growth [Jaenes et al., 2008; Jaenes 2009; Jaenes et al., 2009].

Currently, hardiness has been used in research on athletes from various disciplines such as marathon running [Jaenes et al., 2009], long-distance running [De la Vega et al., 2010] in athletics, but also in sports such as judo [Ponce-Carbajal et al 2021a], swimming, taekwondo, diving [Ponce-Carbajal et al., 2023], field hockey, soccer [López-López, 2011], triathlon, gymnastics [Ponce-Carbajal, 2022], weightlifting [Ponce-Carbajal et al., 2023], high diving [Villareal -Aranda et al., 2022] and other sports [Ponce-Carbajal et al., 2017; Ponce, 2017; Ponce-Carbajal, et al., 2020; Ponce-Carbajal, et al., 2021a; Ponce-Carbajal, et al., 2021b].

On the other hand, the environments where people live together are accompanied by many significant learning experiences, since living in diverse social groups offers growth and diverse experiences that give them the possibility of making decisions that seem appropriate or familiar.

The first environment is the family, which has a great influence on learning processes [Mejía & Arrollo, 2022]. What they see and hear and they use it to advance their development as individuals, eager to achieve their goals. In the case of athletes, there are some differences, because those who do not play sports have fewer social interactions than those who do [Henriksen et al., 2010; Henriksen et al., 2010a; Henriksen et al., 2010a].

The daily life of athletes is perfectly connected to their basic nuclei where they have developed and where they have had the opportunity to learn not only manners but also more complex processes of behavior, personality, and character. Their social context is the environment in which they live and share their lives, which may include family, friends, classmates, training partners, opponents, the school principal, etc.

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The social context is the core of the information that athletes learn through meaningful experience, as Bronfenbrenner argues in his book “The Ecology of Human Development: Experiments by Nature and Design” [Bronfenbrenner, 1979].

In the model of ecological human development, this author comments that all individuals are in constant motion and interact every day in various roles. For example, when they wake up in the morning, they are children, and if they have siblings, they also take on the role of brother or sister. When they arrive at school, they are students, classmates, and friends, and if they go to training after school, they now have the role of being an athlete and at the same time are a training partner and also interact as a participant or member of a sports club, which in turn is an opponent of someone else in a competition, and so on. Bronfenbrenner summarizes this approach in concentric circles on four levels.

The first of which he described as the microsystem, the central level that summarizes the individual's interpersonal relationships, with their activities described as a pattern with personal characteristics that remains in dynamic communication with the environment, such as their family or school.

The second is the mesosystem, which refers to the individual's interactions with various microsystems, such as work or their social life.

The third, the exosystem, refers to one or more environments that do not actively include the developing subject but have an impact on them; for example, their parents' workplace; and the fourth, described as the macrosystem, is the most distant level, where the subject communicates or interacts with their culture, with entire societies, such as religion, various ideologies, or the politics of their country.

Henriksen [2010] carried out a study in which he proposed an adaptation of Bronfenbrenner's model, which he defined as the model of the athletic talent development environment [Krebs, 2009].

In terms of social context, Simón [2009] argues in his research that the proper development of an athlete is multifactorial [Lorenzo et al., 2015], establishing variables such as the coach, environment and available resources, family, athlete skills, nature of training, and training characteristics. The coach is of vital importance for the proper development of an athlete. They are the ones who apply the training dose, are the leader, the technician, who plans the tactics or strategy for each athlete and, in turn, helps the athlete to stay focused and committed so that they can achieve their goals [Foresto, 2022].

The environment and resources refer to all those who support athletes both financially and administratively, such as institute leaders, sponsors, and multidisciplinary team personnel such as a physiatrist or psychologist [García-Naveira, 2018].

The family is the closest nucleus to the athlete, guiding them in the development of bonds of collaboration and communication, as well as teaching values and ethics that moderate behavior [Carrillo et al., 2025].

Athlete skills are the abilities or talents that an athlete possesses, whether physical or psychological. The nature of training refers to the tasks that are designed to ensure the proper development of the athlete's potential, including the duration of rest, the number of repetitions, and sets. All of the above factors make up the questionnaire on Perception of Factors Related to Excellence in Sport [PFED; Simón, 2009] with 54 items and six factors that the athlete considers contribute to their sporting success.

Hardiness and social context are constructs that still need to be explored, as they offer the possibility of guiding family members, coaches, and resource managers on the support needs of young athletes for training or for the application of resources for physical activity and sport for the masses, and there is little material on this subject. The objective of this document is to identify the existence of relationships between the variables of hardiness and social context.

Methodology

The design of this research is quantitative, non-experimental, cross-sectional, descriptive, and correlational [Hernández, et al., 2006].

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Participants

The population for this study consisted of 56 athletes from various sports in the sports organization faculty. This sample was made up of 29 men [51.8%] and 27 women [42.8%]. The young athletes' ages ranged from 18 to 28, with a mean of 21.38 and a standard deviation of 2.37. The inclusion criteria were that participants were currently participating in a team representing the sports organization faculty, were over 17 years of age, and were currently studying. The exclusion criteria were those who did not complete the instruments properly, those who were currently not training due to injury, and finally those who decided to withdraw their participation for personal reasons.

Instruments

The first questionnaire is the Hardiness Questionnaire for Central American and Caribbean Athletes [PRDCC; Ponce-Carbajal et al. 2015], which measures hardiness or resistance to stress.

This questionnaire consists of 18 items, with three factors: commitment [6 items], control [6 items], and challenge [6 items]. This instrument has been used in its three-factor and single-factor forms, and the response scale is a Likert scale from 0 to 3, where 0 is "strongly disagree" and 3 is "strongly agree." Internal consistency properties are commonly adequate above .70.

The second is the questionnaire on Perception of Factors Related to Excellence in Sport [PFED; Simón, 2009], which measures the athlete's perception of the support received in their long process of preparation for a competition. This questionnaire includes variables such as the coach, the environment and resources, the family, the athlete, and the nature and characteristics of the training.

This instrument consists of 54 items and a Likert scale from 1 to 10, where 1 is the lowest contribution and 10 is the highest contribution to their current training as an excellent athlete. The reliability of this instrument is also normally adequate for samples above .70 on Cronbach's alpha.

Procedure

A Google Forms link was generated to have it ready for application once permission was granted.

The Universidad Autónoma de Nuevo León has always offered accessibility for sample collection among its sports teams, with the understanding that it contributes to the development of sports science and to society.

Therefore, data collection is always available.

The process followed was to request permission from the competent authority to contact the coaches. They were subsequently informed of the purposes of these instruments and the benefits of helping us distribute them to their athletes electronically via WhatsApp or any social media platform. This way, the athletes were sent the link with the coach's support, encouraging them to participate and raising awareness about the importance of their responses.

Once the athletes were informed, a remote meeting was held to inform them that all their responses were completely anonymous and that, if they wished, they could withdraw at any time, as their participation was completely voluntary and would take no more than 20 minutes.

Data analysis

Data analysis was performed using the statistical package SPSS version 25. Descriptive statistics such as frequencies, mean, and standard deviation were calculated, as well as reliability using Cronbach's alpha for the questionnaires, and Spearman's correlation analysis was performed.

Results

The results found in the descriptive analysis section are presented in Table 1, which shows the frequencies of the various sports, with 16 sports participating, both individual and team sports.

Box 1**Table 1**

Frequencies of sports participating in this research

	Deporte	Frecuencia
1	Cheerleading	9
2	Athletics	2
3	Basketball	2
4	Baseball	1
5	Bowling	3
6	Box	3
7	Diving	5
8	Fencing	4
9	Aerobic Gymnastics	1
10	Karate	2
11	kickboxing	2
12	Rugby	3
13	Taekwondo	4
14	Tochito	7
15	Triathlon	1
16	Volleyball	7
	Total	56

NOTE: self-authored table

Table 2 shows the mean Cronbach's alpha reliability values for the hardiness and social context variables, which are adequate for the sample.

Box 2**Table 2**

Cronbach's alpha reliability of the variables in the Hardiness in Central American and Caribbean Athletes questionnaire from the Perception of Factors Related to Excellence in Sport questionnaire.

	Variables	Cronbach's alpha
1	Control	0.85
2	Commitment	0.85
3	Challenge	0.85
4	Total Hardiness	0.94
5	Coach	0.94
6	Environment and resources	0.86
7	Athlete	0.91
8	Family	0.84
9	Nature of training	0.85
10	Training features	0.7

NOTE: self-authored table

The table 3 [See Annexe 1] shows the results of Spearman's correlations, confirming that the variables are related between total Hardiness and five of the six social context variables. It should be noted that family does not correlate with any of them; there is no relationship with any Hardiness variable, either unifactorial or trifactorial.

The Hardiness variables that correlated with the social context are: the coach and the three Hardiness variables, as well as total Hardiness; the environment and resources, the athlete, and the characteristics of the training; Internment; the nature of the training correlates with the variable of commitment, challenge, and total Hardiness. The only variable that had no relationship was family.

Conclusions

The importance of their performance, as it helps them reinforce their commitment to the proposed objectives or goals, as well as increasing their resistance to stress, teaching them to maintain control in the most difficult moments so that they are able to face the challenges that arise.

In terms of the environment, resources, and characteristics of the training, the athlete feels calm because they have the support of federation administrators or sponsors, and in this way, the athlete is able to flow better in their preparation for the next competitions.

Another aspect that gives them peace of mind is that they have a multidisciplinary group that helps increase their chances of success. This multidisciplinary group refers to a psychologist, a physiatrist, or a mechanic who helps them recover from strenuous training. In this study, it is noteworthy that family does not figure as a very important factor in the athlete's development. It is presumed that this is because they are young adults and most of them are already independent.

Declarations**Conflict of interest**

The authors declare no interest conflict. They have no known competing financial interests or personal relationships that could have appeared to influence the article reported in this article.

Author contribution

Ponce-Carbajal, Nancy. Supervision: general leadership of the research group

Ramírez-Nava, Rubén. Conceptualization: Formulation of the objectives and general goals of the research.

Morquecho, Raquel: Review and critique, comments and editing of the manuscript. Analysis and confirmation of results, methods and analysis of conclusions.

Availability of data and materials

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Annexes

Annexe 1

Box 1

Table 3

Spearman correlations of the variables in the Hardiness questionnaires for Central American and Caribbean athletes from the questionnaire on Perception of Factors Related to Excellence in Sport

Instrument	Variable	1	2	3	4	5	6	7	8	9
1	Hardiness in Control									
2	Central American-Caribbean Athletes	.699**								
3	Challenge	.654**	.594**							
4	Total Hardiness	.897**	.842**	.852**						
5	Coach Environment	.357**	.268*	.307*	.330*					
6	Perception of and Factors resources	.359**	0.156	.539**	.405**	.495**				
7	Related to Athlete	.304*	0.256	.439**	.434**	.413**	.555**			
8	Excellence in Family	0.242	0.084	0.136	0.179	.531**	.352**	.287*		
9	Sport questionnaire. Nature of training	0.258	.321*	.343**	.349**	.464**	.435**	.620**	.326*	
10	Training features	.369**	0.219	.300*	.361**	.408**	.414**	.547**	.270*	.551**

Nota: $p < .01^{**}$; $p < .05^{*}$; Total Hardiness [HT].