MOTIVATION, ANXIETY, DEPRESSION AND STRESS IN UNIVERSITY ATHLETES IN TIMES OF HEALTH RESTRICTIONS CAUSED BY THE COVID 19 PANDEMIC

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Abstract. In the return to face-to-face university activities after the strict and total confinement initiated in March 2020 in Chile, there is a need to know the state of psychological variables in university athletes, since the new adaptive process to face-to-face training, together with new health regulations and not being able to have competitive objectives yet, are a problem to be solved. The objective of the study is to evaluate the variables of motivation, anxiety, stress and depression in active university athletes in the return to face-to-face academic and sports activities, as well as to know if there is a relationship between motivation and the others. The methodology used is quantitative, with an exploratory cross-sectional design, with the participation of 135 subjects. The results presented in this study show through Spearman's correlation coefficient between motivation with depression (<.001) and anxiety (<.001), while not with stress (<.079), using a p value of .05. It is concluded that, although the relationship is low (Spearman's rho anxiety <.339, depression <.289 and stress <.152), it is also evident in the sample a high degree of self-determination in motivation (M 5.76) and how this has a favorable relationship with the other study variables, which present the score of a stable mental state in the population of athletes during the return to university sports and academic activities.

Keywords: motivation, anxiety, depression, stress, university.

MOTIVACIÓN, ANSIEDAD, DEPRESIÓN Y ESTRÉS EN DEPORTISTAS UNIVERSITARIOS EN TIEMPOS DE RESTRICCIONES SANITARIAS PRODUCIDAS POR LA PANDEMIA DEL COVID 19

Resumen. En el regreso a las actividades universitarias presenciales posterior al confinamiento estricto y total iniciado en marzo del año 2020 en Chile, surge la necesidad de conocer el estado de las variables psicológicas en deportistas universitarios, ya que el nuevo proceso adaptativo a entrenamientos de manera presencial, junto con nuevas normas sanitarias y no poder tener objetivos competitivos aún, son un problema a resolver. El objetivo del estudio es evaluar las variables de motivación, ansiedad, estrés y depresión en deportistas universitarios activos en

la vuelta a la presencialidad de actividades académicas y deportivas, así también conocer si existe relación entre la motivación y las demás. La metodología que se utiliza es de carácter cuantitativo, con un diseño exploratorio de corte transversal, con participación de 135 sujetos. Los resultados que se presentan en este estudio manifiestan a través del coeficiente de correlación de Spearman entre la motivación con la depresión (<.001) y la ansiedad (<.001), mientras que con el estrés no (<.079), usando un p valor .05. Se concluye que, si bien la relación es baja (rho de Spearman ansiedad <.339, depresión <.289 y estrés <.152), también se evidencia en la muestra un alto grado de autodeterminación en la motivación (M 5,76) y como esta tiene una relación favorable con las demás variables de estudio, los cuales presentan la puntación de un estado mental estable en la población de deportistas durante el regreso a las actividades universitarias deportivas y académicas.

Palabras clave: *motivación, ansiedad, depresión, estrés, universitarios.*

Introduction

The Covid-19 pandemic, which began in early 2020, has been one of the major health crises of the last decade, and as a result, the world population has been confined to a long period of time due to the rapid spread of the virus throughout the world. The year 2022 is a time when the so-called "new normality" begins to be restored, where health restrictions are less severe and allow the return to face-to-face activities in different social, labor, educational and sports contexts. Particularly the last two contexts mentioned are the ones that have suffered the greatest delay in the face-to-face return, and it is in the university field where the present research is focused.

Entering university by essence brings with it a series of processes of adaptation, maturation and growth on the part of individuals, both in the first year and in subsequent years, so the pandemic undoubtedly had negative and positive effects (increase in technological knowledge), creating situations difficult to cope with and generating a new awareness on different fronts of everyday life, such as virtual classes, health protocols, sports, among others (Vilca et al., 2022). It is at this point that it becomes interesting to know the mental state of university students who are part of the various sports disciplines in which they develop within their houses of studies.

The spread of the pandemic has caused feelings of fear in people due to the risk of dying from a biological agent; activating emotions that are difficult to control at the population level. Ruiz et al. (2022), that health measures, such as social distancing or quarantines, generate a sense of uncertainty and anxiety, causing a negative impact on people's mental health.

The world has been abruptly destructured in this social and contemporary daily life, the confinement has generated a confrontation of people with themselves, increasing a strange stress as the pandemic was prolonged, as González (2020) states, which significantly affects the academic, mental and social processes of the various groups of university students, not only in Chile, but in the vast majority of countries in the world. In this context, the student considers most of the situations he faces in his educational process as distressing, since he attributes that his coping strategies are insufficient or ineffective to cope with the demands of his school environment, which in turn favors the appearance of reactions such as physical exhaustion, anxiety, insomnia, poor academic performance, disinterest in his career, absenteeism and even dropping out of school. As Llédo (2014) rightly points out, the response to stress, for example, in the university setting depends on the student's willingness to cope with the demands imposed by the educational environment. It is important to highlight that coping strategies can be considered as effects and variables that modulate stress levels in the university and sports environment.

In countries such as Spain, researchers have currently implemented studies on the university population to understand how students have adapted their physical activity habits and lifestyle to the confinement situation, where they ratify information such as that provided by the World Health Organization (WHO), which is to maintain the recommendation of 150 minutes of moderate physical activity per week, translated into approximately 30 minutes per day (Andreu 2020; Bustamante et al., 2022). One of the benefits found is based on the fact that physical activity helps to reduce the pulmonary inflammatory process generated by this virus, as well as to reduce the levels of depression and anxiety. That is why Andreu (2020), says that the practice became something destined to the beneficial aspects that it has in favor of health, more than any other reason.

The sudden change to the distance education modality caused a certain lack of support that affects the previous levels of motivation and stress in the educational environment, which are added to the process already experienced by young people during this stage of university life. Studies such as that of Pajarito et al. (2020), shows as protective factors both the family and the support of teachers, being the facilitators in the students to face the academic context in pandemic in a better way.

As for academic stress (the stress that is present to a greater extent in the student stage), it has been defined as "the situation of physical and emotional tension linked to the demands of the academic world" (González, 2020). The student's perception of his or her ability to cope successfully with academic demands can generate negative thoughts and emotions, physical affectation such as sleepiness, headaches, anxiety, lack of concentration, disorganization and adaptation problems. Within the context of higher education, both in the first year and in subsequent years, there is also an increase or lack of control of anxiety levels, and it is usually part of everyday life, due to the responsibilities and demands generated by university life (Andrade et al., 2015). Along with this, there are times that are often more complex to deal with for many, such as the period of tests, papers, internships and final exams. The pandemic and adaptations in distance education has been a turning point in how to deal with these situations.

Another variable that is necessary to consider is anxiety, which usually manifests itself cognitively, limiting the possibility of attending and concentrating to face classes, practices or exams, having repercussions on academic performance (Trunce et al, 2020; Núñez and García, 2017). Although local universities usually have departments or units that support their students in psychological aspects, it is complex to favor a higher percentage of students for their attention, as described by Bustamante et al. (2020), mentioning that especially in times of pandemic, there has been a considerable increase in anxiety and other pathologies that are detrimental to academic performance.

Along with anxiety and stress, one of the pathologies associated with university students, is depression, which in Chile has a prevalence in its various symptoms with 14.4%, being an alarming figure considering that this is increasing (Rossi et al., 2019). The university process or stage, as has been expressed in previous paragraphs, is a moment in life where important aspects of life are defined and which are part of the identity that form the young person in his or her growth towards adulthood, reaching sufficient maturity for aspects such as personal independence. For those student athletes, depression is also often associated with sports dropout, which is why the pandemic has hit hard on many, but they have been able to resolve and have patience for the time of return to activity (Mendoza et al., 2022; Reche et al., 2018).

Another factor that affects university students is unquestionably motivation, which suffers as a result of facing the new academic methods adjusted to virtuality during the pandemic and the fact of not being able to practice sports due to confinement. Motivation is

understood as the energy, direction, persistence, and purpose of people's behaviors, which includes intentions and actions (Deci and Ryan, 2008; Stover et al., 2017). This is a factor strongly linked to people's emotional states, as shown in Bustamante's study (2020), that during the pandemic and under various health restrictions, university students presented a decreased level of physical activity and motivation towards movement.

For the above mentioned reasons, this study was carried out in order to know and evaluate these psychological variables of the university population in the return to on-site activity (even with health restrictions), who lost the possibility of practicing sports as they used to do. Also, the degree of motivation is related to the other variables of anxiety, depression and stress, essentially considering intrinsic motivation as the most self-determined in human beings.

Method

The methodology of the study is quantitative, exploratory and cross-sectional. The research was conducted during the month of July 2022.

Design

A study was developed by applying two psychometric scales by forms in virtual platforms, in order to evaluate four psychological variables in a population of university students practicing sports during the return to face-to-face activities after the increase in freedom of action due to the decrease in health restrictions and confinement. The data collection lasted four weeks, considering the corresponding permits from the authorities of each institution to carry out the research and the application of the instruments by two professionals, for their subsequent analysis.

The general objective of the study is to evaluate the variables of motivation, anxiety, depression and stress in active university athletes in the return to face-to-face academic and sports activities, even when the restriction measures are maintained due to the Covid-19 pandemic. The specific objectives are to analyze the data obtained in the university sample population through the IBM Spss version 29 software; to describe and identify the mental state through the variables of motivation, anxiety, depression and stress of the athletes in each of the dimensions of the applied instrument; to identify whether positive or negative orientations are presented related to the different study variables; to correlate the results between the variables of motivation, anxiety, depression and stress; to design tables that express the results obtained in the research.

Participants

The participants are from the city of Punta Arenas, capital of the Magallanes Region, Chile. Due to the distance that separates the area geographically, the customs are different and particular to the rest of the country, describing the community as a place of quiet people, with southern habits in the way of eating, dressing and sharing. The context of the sample population is located in a sports, academic and university environment. Information was collected in a total of 135 subjects enrolled in local universities, who maintain the practice of sports activities in the return to the presential.

The inclusion criteria for the study were: university students between 18 and 38 years of age, actively practicing sports according to attendance records at university training sessions, and enrolled in any of the 3 universities in the city. The exclusion criteria for the study were: suffering from some type of mental disorder, taking medications that alter mental states and

consuming illegal drugs. The elimination criteria for the study were: answering the scales and not being an active participant in any sport. Inconsistency and inconsistency in the answers provided under software analysis.

Instrument

For the measurement of the variables of anxiety, depression and stress, an existing instrument validated for the university context in Chile was chosen, known as the Depression, Anxiety and Stress Scale (DASS-21). This was translated and adapted in Chile by Vinet, Rehbein, Román and Saiz (2008), the latter version being the one used. The DASS-21 has 21 items, with four response alternatives in Likert format, ranging from 0 ("It does not describe anything that happened or felt to me during the week") to 3 ("Yes, this happened to me a lot, or almost always"). In order to answer the question, the question asks the respondent to indicate to what extent the sentence describes what happened or what he/she felt during the last week. This instrument has the advantage of being a self-reporting scale, brief, easy to administer and answer, and its interpretation is simple. The instrument was validated in the Chilean university context by Antúnez and Vinet (2011).

The measurement instrument that fits the present research to assess the motivation variable, corresponds to the Escala de Motivación en el Deporte 2 (EMD-2), adapted to the Chilean context (Vallejo et al., 2017). This study was validated in university athletes of various disciplines and categories, with ages between 18 and 38 years, which makes it relevant to apply in this study. The EMD-2 has 6 dimensions, which are: intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation and amotivation. In total there are 18 items to be answered by the athletes, and each dimension has 3 items.

Variables

The variables presented in this research are measured through psychometric scales that allow the assessment of the level of motivation, depression, anxiety and stress. All these variables tend to suffer variability in their levels, according to the different contexts in which they are manifested and how they are processed by each person. The pandemic has had an effect on life, and this study seeks to identify the implication and relationship between the levels of intrinsic motivation and the other variables mentioned above, also yielding data on their mental state. Below is a description of each:

Intrinsic motivation: continuous scale-type variable, obtained through the first dimension of the EMD-2.

Depression: continuous scale-type variable, obtained through the depression subscale in the DASS-21.

Anxiety: continuous scale-type variable, obtained through the anxiety subscale in the DASS-21.

Stress: continuous scale-type variable, obtained through the stress subscale in the DASS-21.

Hypothesis

In relation to the hypotheses proposed in this research, hypothesis 1 or alternative hypothesis and hypothesis 0 or null hypothesis are described below:

Hypothesis 1: the degree of intrinsic motivation is favorably related to the mental state (depression, anxiety and stress) of university student athletes after returning to the classroom.

Hypothesis 0: the degree of intrinsic motivation is not related to the mental state (depression, anxiety and stress) of university student athletes after returning to the classroom.

Data analysis

The processing of all the information collected in this research is carried out using IBM Spss v29 software, in which the corresponding analyses described in the following paragraphs are performed.

The Cronbach's Alpha coefficient test is used for the reliability of the instruments. To process the data collected, the Kolmogorov Smirnov normality test was initially performed to determine whether the random sample has a normal distribution, which provides guidance on whether parametric or nonparametric tests should be used. A descriptive analysis of each of the variables and dimensions that make up the scales applied to the sample population is applied. This included the mean, median and standard deviation of each one, together with the preparation of tables that favor their understanding.

To establish whether there is a relationship between the intrinsic motivation variable of the EMD-2 scale and the depression, anxiety and stress variables of the DASS-21 scale, Spearman's rho correlation coefficient was calculated with a significance of $< .05$.

Results

Tests of normality, descriptive statistics of means, medians and deviation of the data obtained from the instruments applied were performed, where tables are presented for their understanding. Spearman's correlation coefficient was used to identify and relate the variables.

The results of the analysis of the normality tests shown in Table 1, having a significance of $< .001$, below the $< .05$ level, establishes that: a normal distribution is not present, therefore the use of non-parametric tests was established in the subsequent analyses of the study.

Table 1

Kolmogorov-Smirnov normality test

	Kolmogorov-Smirnova		
	Statistic	gl	Sig.
Intrinsic motivation	.156	135	<.001
Depression	.158	135	<.001
Anxiety	.186	135	<.001
Stress	.152	135	<.001

The maximum score for each dimension of the EMD-2 is 7 points on a Likert scale from 1 to 7. With regard to the dimension of intrinsic motivation, which is considered the most self-determined, it presents a mean of 5.76 in Table 2, which expresses a high degree of self-determination, understanding the practice of sports as part of the pleasure of the activity itself, where the individual moves for personal reasons and not outside the context. Considering that the data were obtained when starting a semester in person, the high score is inferred as a need to return to the physical and social activity produced by sport.

Table 2

Descriptive analysis of intrinsic motivation.

Intrinsic motivation	
N valid	135
Lost	0
Average	5.76
Median	6
Rank	5
Minimum	2
Maximum	7

Within the DASS-21 instrument validated for the university population of Chile, a score between 5 and 6, shows a mental state which suffers from mild depression, and as shown in Table 3, it is possible to affirm the presence of this condition in the population of university athletes who are returning to sport and academic activity in a face-to-face manner. Isolation and restrictions caused by the pandemic are part of the problem that can generate arguments for the appearance of this variable in people.

Table 3

Descriptive analysis of depression.

Depression	
N valid	135
Lost	0
Average	5.36
Median	4
Rank	21
Minimum	0
Maximum	21

The mean score presented in Table 4.6, within the instrument used for its measurement, expresses that 4 points is the manifestation of mild anxiety in people, a state that can be variable, understanding the circumstances that it is possible to live daily to face the situations that may occur. The return to face-to-face presence may increase anxiety levels after a period of confinement, however, it is a score that it is possible to estimate as favorable.

Table 4

Descriptive analysis of anxiety.

Anxiety	
N valid	135
Lost	0
Average	4.03
Median	2
Range	20
Minimum	0
Maximum	20

Table 5 presents a description of stress with a mean of approximately 7, where according to the DASS-21, it is a score below the manifestation of mild stress, which is between 8 and 9 points. It is possible to infer that, in a period of return to face-to-face activities, after a long break of being locked up at home with many limitations, it is favorable for this mental variable, because of how liberating it is to return to a certain "normality" in daily life.

Table 5

Descriptive analysis of stress.

Stress	
N valid	135
Lost	0
Average	7.01
Median	6
Rank	18
Minimum	0
Maximum	18

Table 6 shows a p-value of <.001, less than .05, indicating that the null hypothesis is rejected and the alternative is accepted. Spearman's rho coefficient being negative -.289, indicating that the relationship between the variables is inverse and its degree is low. This expresses a low negative relationship, which is favorable in the sense that the higher the intrinsic motivation, the lower the levels of depression.

Table 6

Correlation analysis between intrinsic motivation and depression.

		Intrinsic motivation	Depression
Intrinsic Motivation.	Correlation Coefficient	1.000	-.289**
	Sig. (bilateral)	.	<.001
Rho of	N	135	135
Spearman Depression	Correlation Coefficient	-.289**	1.000
	Sig. (bilateral)	<.001	.
	N	135	135

Table 7 shows a p-value of <.001, less than <.05, indicating that the null hypothesis is rejected and the alternative is accepted. Spearman's rho coefficient being negative -.339, indicating that the relationship between the variables is inverse and its degree is low. This expresses a low negative relationship, which is favorable in the sense that the higher the intrinsic motivation, the lower the levels of anxiety.

Table 7

Correlation analysis between intrinsic motivation and anxiety.

		Intrinsic motivation	Anxiety
Intrinsic Motivation.	Correlation coefficient	1.000	-.339**
	Sig. (bilateral)	.	<.001
Rho of N	135	135	
Spearman Anxiety	Correlation coefficient	-.339**	1.000
	Sig. (bilateral)	<.001	.
	N	135	135

Table 8, which analyzes the correlation between intrinsic motivation and stress, shows a p-value of .79, a result greater than <.05, which indicates that there is no statistical relationship between the two variables.

Table 8

Correlation analysis between intrinsic motivation and stress.

		Intrinsic motivation	Stress
Intrinsic Motivation.	Correlation coefficient	1.000	-.152**
	Sig. (bilateral)	.	.079
Rho of N	135	135	
Spearman Stress.	Correlation coefficient	-.152**	1.000
	Sig. (bilateral)	.079	.
	N	135	135

Discussion

The results obtained within this research are highlighted as positive and expected, considering the context and the moment in which the information is sought to be collected is within a period of vulnerability in transition to an advance towards greater ¨freedom¨ of action in their daily lives as students, especially in the possibility of being able to return to practice sport, which brings implicit favorable effects on the body and mind of people with a high degree of motivation (González et al., 2020; Andrade et al., 2015; Pérez et al., 2015). In addition, it is not unusual to find, although low, levels of anxiety and mild depression in the study population, since during the development of the pandemic these variables were increasingly on the rise due to various moments of crisis, from economic to social and academic, where the latter two aspects usually have adverse effects if adaptation comes from a sudden change (Bustamante et al., 2020; Anicama et al., 2021).

According to the studies of Vilca et al. (2020), where it shows how the Covid-19 pandemic has evidently generated changes in the way of living, and attending to this study in the university area, where the main change was mostly noticed in the transition to virtual education, which generated high levels of stress and academic stress, it has been an adaptation that has not been fully achieved during the pandemic (Ruiz et al., 2022), therefore, the results obtained in the stress levels in this research show low, understanding that although they must now adapt from virtual to face-to-face, it is a situation that favors a better way to face the various areas of university performance (modules, sports, social service, practices, etc.), along with having recreational spaces different from confinement and quarantines caused by confinement (Barahona and Ojeda, 2019).

Studies that allude to the university population during the strict process of health restrictions, show an increase in the levels of anxiety and depression, and a decreasing motivation for academic and sporting activity from the plane of virtuality as the only resource of realization (Mendoza et al., 2022; Ruiz et al., 2022), which contrasts with the data obtained from the students upon returning to a new academic and sports semester after confinement, where they present a favorable mental state, with a high desire to practice sports (Huamán and Barrial, 2022), which allows them to face the university process in an optimal way, respecting and accepting the norms established in the new ¨normality¨ (Bustamante et al., 2020).

The correlative implication of motivation on the level of depression and anxiety, allows the possibility of exploration in research that inquires and ratifies the fact that this is so, since inferring this is subject to further scientific evidence and studies that are introduced in the university context as such in times after the problems caused by the pandemic (Lopez and Pineda, 2015; Caro et al., 2019).

Conclusions

University athletes, like the general population, had to experience adverse processes during the pandemic, and the psychological evaluation of the effects of this constant adaptation that they had and will have to face, allowed us to see and deduce in this study that the transition from confinement to greater freedom, yielded balanced mental states with a motivational tendency towards sports practice that is related to the enjoyment of being able to do it, outside of the need to have competitive events to train or participate in any discipline. This reinforces the ideas of sport as a useful tool for the general welfare of people, even in adverse times.

When describing and identifying in the population the parameters of the psychological variables investigated, a positive orientation of the results obtained is reflected, where the hypothesis expressed that high intrinsic motivation was a factor to be considered when related to the other variables of stress, anxiety and depression. In this case, intrinsic motivation is present to a high degree, correlated with a lower degree of anxiety, depression and stress. This result is a determining element to understand, since there may be tools or means of intervention to work particularly on the intrinsic motivation of student-athletes to improve other mental conditioning factors.

The high levels of intrinsic motivation in the return to the sport activity, allows us to realize that it is a need in university students, where returning to practice their sport is not due to the search for recognition or external stimuli, but rather for the pleasure of wanting to do it, to feel fulfilled, being a protective factor against the development of pathologies such as anxiety and depression in particular. It is important to mention in a special way that the results of the study showed the relationship that the higher the intrinsic motivation, the lower the pathological manifestation of these two variables, therefore, understanding that during a long period of time they were confined with an unfavorable mental, social and sporting implication, returning to the classroom had a positive impact, and the students who practice sports were able to see a stable mental state to return to face the university stage.

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