


## Original Article

# Critical incidents which limit performance of Chilean University rowers who won a medal in the Pan American Games of Lima 2019

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### ABSTRACT

Main objective of this study was to provide a basis for the comprehension of the main critical incidents (i.e. obstacles) that Chilean rowers who were medallists in the Pan American Games of Lima 2019 have to face within the academic, socioeconomic and sports processes. 19 athletes were selected through a non-probabilistic sampling. A content validated questionnaire and an in-deep interview were used. Higher levels of consistency were observed. Through the inferential analysis (ANOVA) it was possible to conclude that athletes are concerned with some academic and social crisis within their sporting career. This fact does not allow them to concentration and integral tranquillity to be focused and achieve proper results in academic and sports areas. Results presented in this study may contribute to the improvement of public policies and, specifically, contingency and innovation plans for improvement within higher education institutions. This study is framed within the context of social transformation that Chile is currently living.

**Keywords:** Sports performance; Olympism; Elite sports; Higher education; Society; Grants.

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## INTRODUCTION

Understanding of high-performance sport in multiple disciplines and contexts entails a frame of matters that should be addressed from a scientific point of view. Generally, an athlete has to deal with a myriad of factors which surround performance, and which will determine his or her level of achievement (Arias, 2009; Jacques et al., 2016; Lorenzo y Sampaio, 2005). Previous experiences in high-level sports, specifically in rowing, have shown that around twelve years are needed to “create” a high-performance athlete. This is an emerging issue in Chile which is slowly creating awareness within politic, sportive and academic authorities.

During his or her lifetime, an athlete has to face and overcome certain sportive, professional and/ or personal barriers (López-Aguilar y Álvarez-Pérez, 2019). This concept of dual career entails sacrifice, postponements and withdrawals; and this may affect harmonic development of subjects (Álvarez et al., 2014; López et al., 2014). So much so that succeeding in other ambits different than sport, as for example the academic field, is considered in many cases as an act of bravery (Pérez et al., 2004). Looking forward to developing high performance sports together with higher education, it is necessary to understand athlete’s motivations, goal setting and living environment (Sánchez-Pato et al., 2016, 2018). Previous research (Gómez et al., 2018; López et al., 2010) question that point of view which focus only in athlete’s performance and forgets about other aspects that are necessary for a holistic development. In this context, there are many international organizations which promote public policies in the field looking forward to synchronizing Universities and elite sports. This may allow athletes not being forced to choose between University studies or a sports career (Fernández, 2017). Institutions have developed standards, regulations and laws in order to accompany athletes’ sports development altogether with higher education studies (Cevitanes, 2010; Navarro, 2008; Olmos, 2004).

Chilean rowing has been notably voiced and has consolidated its presence in different international events with many triumphs. So much so that rowing is one of the main strategic sports in the nation. Many national rowing athletes devote their lives to high yield sport. However, they find some difficulties when trying to combine University studies and sport (López et al., 2015). Due to this fact, it becomes relevant creating a system which allow mapping the development of their athletes in a multidimensional manner. While it is true that University system offers services that allow combining studies and sport practice, such as PRODAR scholarships (a fellowship program aimed at high performance athletes), many times this emerging legal regulation does not result in an actual operational support (Álvarez y López, 2013; Guardia, 2004).

The research to date has tended to approach this matter either from a quantitative perspective (Alfermann et al., 2004; Erpic et al., 2004) or from a qualitative perspective (Kerr y Dacyszyn, 2000; Torregrosa et al., 2004). Nevertheless, studies combining both approaches are not common. Bearing in mind all the aforementioned facts, the main objective of this research was to identify and analyse main critical incidents of the academic, sports, and socio-familiar areas that affect Chilean rowers who were medallists in the Pan American Games of Lima 2019.

## METHODS

This cross-sectional, descriptive, observational study consider a qualitative-quantitative mixed approach (Ramos, 2015). This methodology allows achieving further comprehension of the study’s phenomenon (Hernández et al., 2006) through the holistic analysis of the factors related to the socioeconomic, academic and sports ambits looking forward to improving subjects’ quality of life.

### Participants

Through a non-probabilistic, convenience sampling (Thomas y Nelson, 2007), and based on the inclusion criteria, 19 rowers (13 males and 6 females) who won a medal in the Pan American Games of Lima 2019 with a mean age of  $26.9 \pm 5.7$  years were recruited. All athletes were members of the Chilean Federation of Rowing. Table 1 shows demographic characteristics of the participants.

Table 1. Demographic characteristics of the sample.

		Gender					
		Male		Female		Total	
		n	%	n	%	n	%
Region	Valparaíso	2	10.5	1	5.3	3	15.8
	Bío - Bío	5	26.3	3	15.8	8	42.1
	Los Ríos	5	26.3	2	10.5	7	36.8
	Los Lagos	1	5.3	0	0.0	1	5.3
	Total	13	68.4	6	31.6	19	100.0
Age range	< 19 years old	0	0.0	2	10.5	2	10.5
	20 – 30 years old	10	52.6	3	15.8	13	68.4
	31 – 40 years old	3	15.8	0	0.0	3	15.8
	> 41 years old	0	0.0	1	5.3	1	5.3
	Total	13	68.4	6	31.6	19	100.0

*Values are expressed as frequencies (n) and percentage of subjects in each group (%).*

### Measures and procedures: data collection

Study was conducted under strict ethic and scientific criteria. Approbation of the Chilean Federation of Rowing and the Head Coach of the institutions was obtained. All the subjects were informed of the nature and subject matter of the study and the methodology. They signed the informed consent following the Declaration of Helsinki, Finland, of the World Medical Association of 1964 and posterior modifications. According to the study design and objectives, subjects were given a questionnaire and then an in-deep interview was carried (Canales, 2006). Both instruments were structured in three analysis blocks: academic, sports and socio familiar. Instruments were validated through experts in the field of high-performance sports and higher education. Furthermore, a high internal consistency of the instrument was observed (Cronbach's  $\alpha = .81$ ) (George y Mallery, 2003, p. 231).

### Data analysis

Firstly, for the quantitative analysis, normality of distribution was determined through Saphiro-Wilk testing. All variables showed a normal-gaussian distribution. Thereafter, descriptive statistics of central tendency and dispersion were calculated. In regard inferential statistics, an analysis of variance (ANOVA) with post-hoc Tukey tests was carried to assess significance in the differences between variables that represented main obstacles for the athletes in their academic and sports development. Level of significance was uniformly established at  $p < .05$ . All analyses were carried out using statistic software SPSS 23.0 for Windows.

The information obtained from the interview was analysed looking forward to complementing quantitative procedures. Qualitative information was transcribed and codified in order to create categories that conducted to the identification of the main critical incidents which limit the performance of the subjects.

## RESULTS

Results are structured in two sections. In first instance, descriptive and inferential aspects from the socioeconomic, academic, sportive and projection towards improvement are considered from a qualitative perspective. Subsequently, critical incidents are identified from the qualitative paradigm.

### **Socioeconomic field**

From a general point of view, it is worth mentioning that most of surveyed athletes are students, only a 21% of the participants are graduated or workers; and a 5.3% do not work or study. Table 2 presents descriptive data concerning socioeconomic area (i.e. marital status, dependent children, healthcare system and benefit of PRODDAR scholarships).

Table 2. Descriptive data of the socioeconomic area.

		Gender					
		Male		Female		Total	
		n	%	n	%	n	%
Marital status	Single	13	68.4	6	31.6	19	100
	Married	0	0	0	0	0	0
	Total	13	68.4	6	31.6	19	100
Dependent children	No sons	11	57.9	5	26.3	16	84.2
	1 son	2	10.5	0	0.0	2	10.5
	2 sons	0	0.0	1	5.3	1	5.3
	> 3 sons	0	0.0	0	0.0	0	0.0
	Total	13	68.4	6	31.6	19	100
Healthcare system	ISAPRE	10	52.6	3	15.8	13	68.4
	FONASA	1	5.3	3	15.8	4	21.1
	No prevision	2	10.5	0	0.0	2	10.5
	Total	13	68.4	6	31.6	19	100
PRODDAR scholarships	PRODDAR	13	68.4	5	26.3	18	94.7
	Potential PRODDAR	0	0.0	1	5.3	1	5.3
	Total	13	68.4	6	31.6	19	100

Values show frequencies (n) and percentages of subjects in each group. Being ISAPRE: Instituciones de Salud Previsional (Previsional Healthcare Institutions), private nature; FONASA: Fondo Nacional de Salud (National Healthcare Fund), public nature; PRODDAR: Programa de Becas para Deportistas de Alto Rendimiento (Scholarship Program for High Performance Athletes).

### **Academic field**

In this area, most of athletes (78.9%) are completing their studies on higher education. This fact of being able to study or work alongside with the sports practice is in accordance with the ideals of the Head Coach and the Technical Team of this sports discipline. Figure 1 shows in graph the academic development of participant athletes through basic, medium and higher education.

Structure of the curriculum is identified by the participants as the main obstacle, although non-significant differences were observed with the rest of the variables ( $F(6,133) = 2.05$ ,  $p > .05$ ). This is also reflected in a low percentage of received scholarships (9.9%) and absence of safeguards policies for sports in terms of academic regulation (11.3%). Results are illustrated in Figure 2.

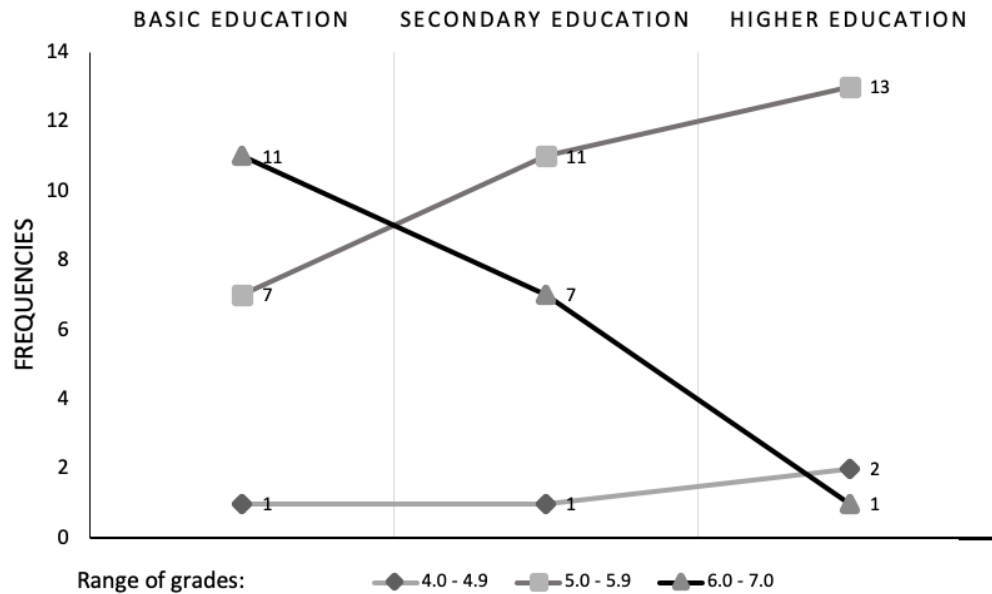


Figure 1. Academic development of the athletes measured in grades. In Chile a 7 equates to the maximum grade and above 4 is considered approved.

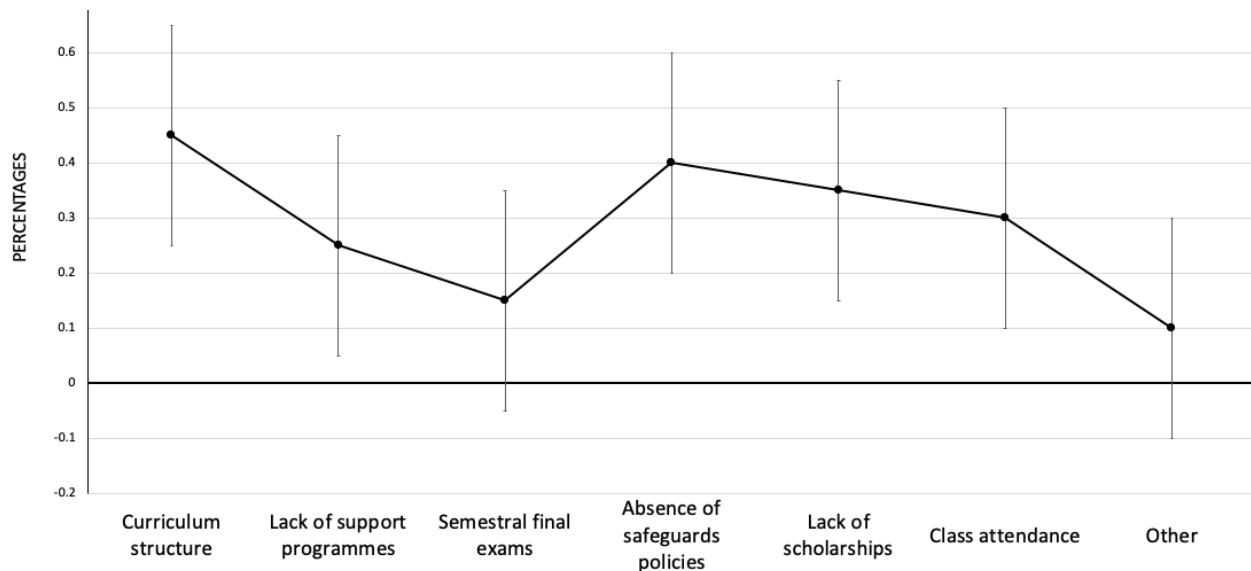


Figure 2. Main obstacles identified by the athletes in the academic field. Results are shown as percentage and confidence interval at 95%.

Figure 3 presents the results in terms of the implementation of the support for a proper academic development of the athletes from educational institutions. Statistically significant differences are observed between means ( $F(2,54) = 4.28, p < .05$ ). Post-hoc analysis revealed significant differences between the institutions which actually give support to the athletes and those which do not ( $p < .05$ ). No differences were observed with those institutions which partially give support to the athletes.

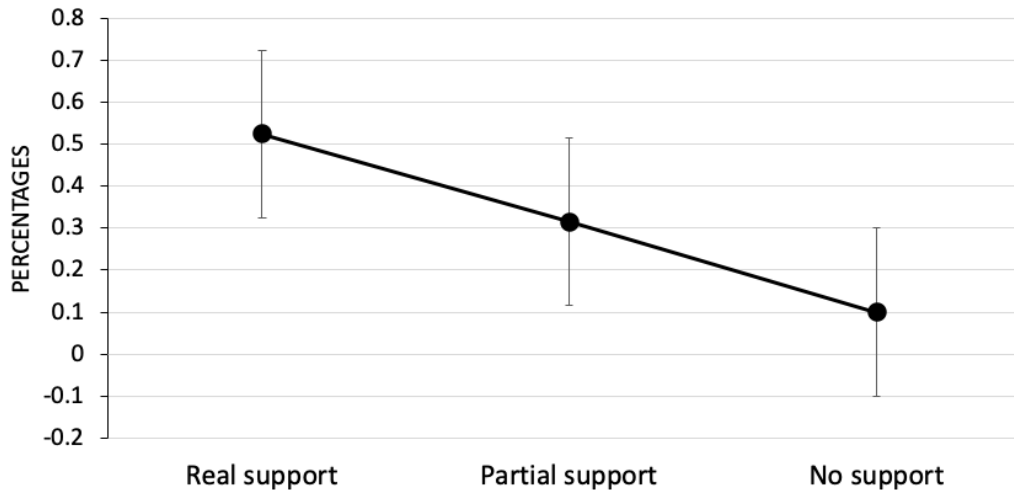


Figure 3. Implementation of the support for the proper academic development of the athletes from educational institutions.

The relative nature of the support that academic institutions give to the athletes is observed in the academic benefits that higher education institutions promote (Figure 4). It is worth highlighting tariff grants (30%) and low academic load (23.3%). Also, the percentage of athletes who do not enjoy academic benefits stand out among the rest of the variables (16.7%).

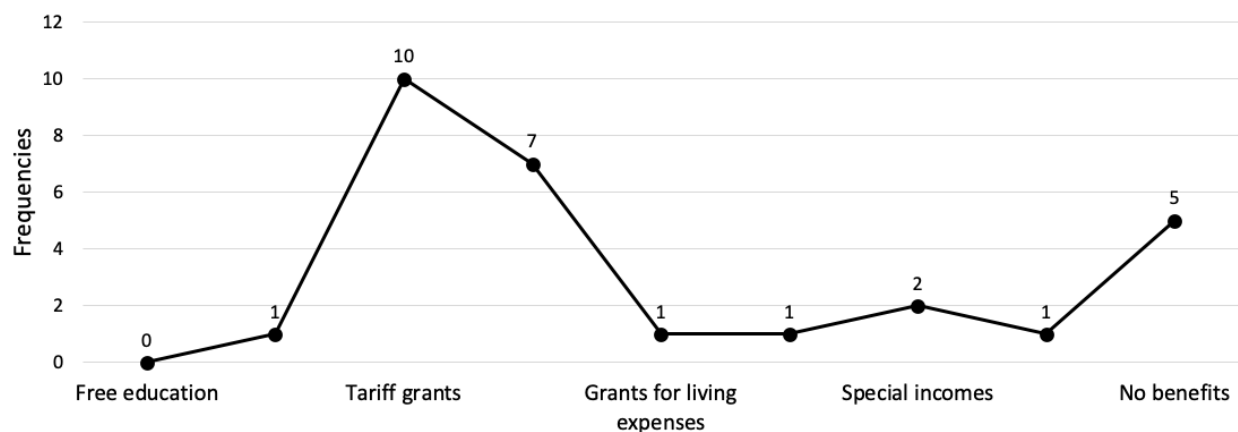


Figure 4. Benefits received by the athletes in relation to higher education.

**Sports field**

Main factor to bear in mind is the training volume the athlete needs to combine with the studies (Figure 5). In this regard, all subjects reported training 11 hours per week and above.

Statistically significant differences ( $F(6,112) = 4.87, p < .05$ ) between the difficulties reported by the athletes are displayed in Figure 6. Most notable identified obstacles were training schedule, insufficient sports grants and lack of multidisciplinary teams. These factors were statistically superior to the rest ( $p < .05$ ).

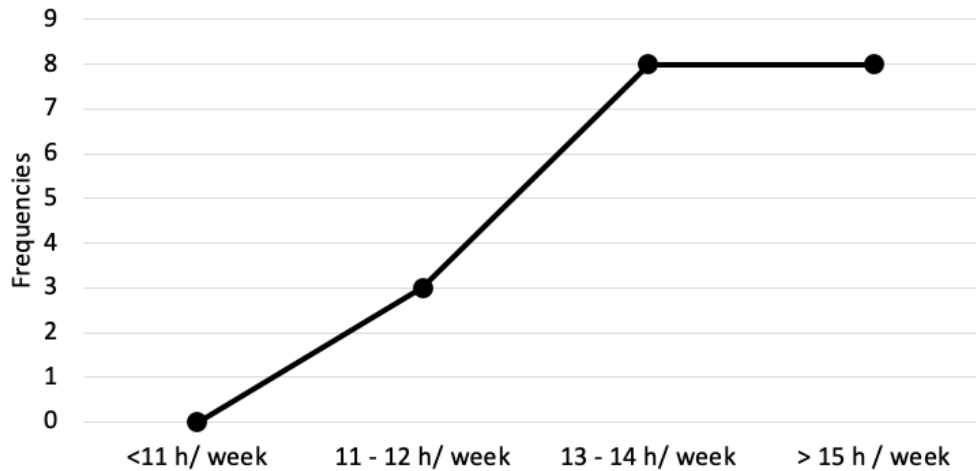


Figure 5. Weekly training volume of surveyed athletes.

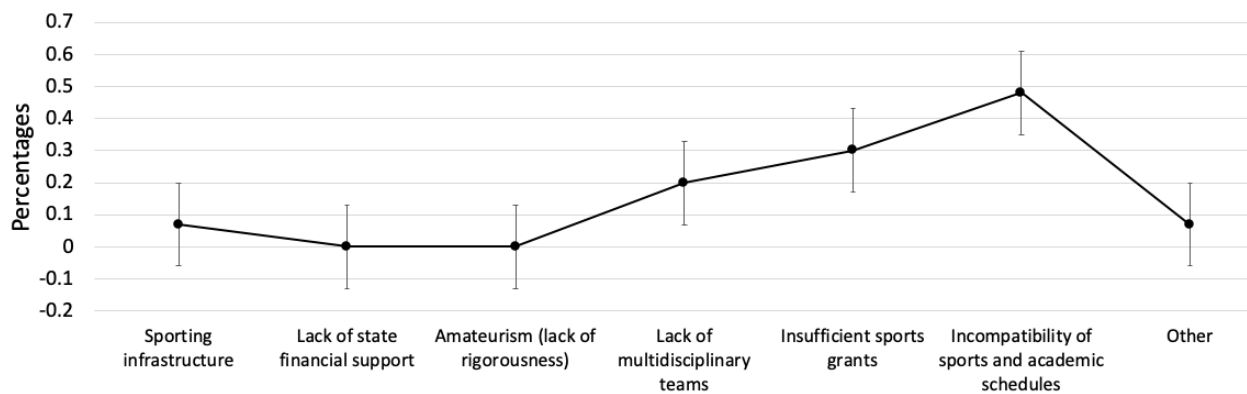


Figure 6. Main obstacles identified by the athletes in the sports area.

**Projection towards improvement**

Looking forward to improving sports performance and optimize academic learning, athletes do additional efforts which allow expanding their knowledge and gaining new skills. Through these skills athletes may navigate their own globalization-inspired contexts. In this respect, results show that all the participants master the English language at least in a basic level; being German the second more known language (36.8%) and followed by others (15.7%) as French (Figure 7).

An analysis of the frequencies with the suggestions made by the athletes showed that main actions looking forward to improving the academic field lie in a flexible curriculum (22.5%), and an academic regulation which allows the students registering in different subjects depending on their sports life (16.3%). Another important point revealed by the subject was receiving a special incoming for being an athlete (21.7%). Results are shown in Figure 8.

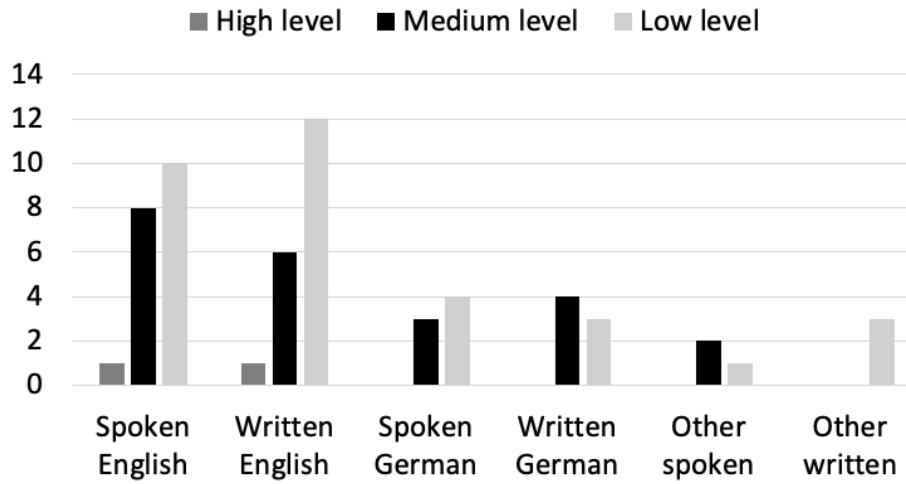


Figure 7. Language skills of the athletes.

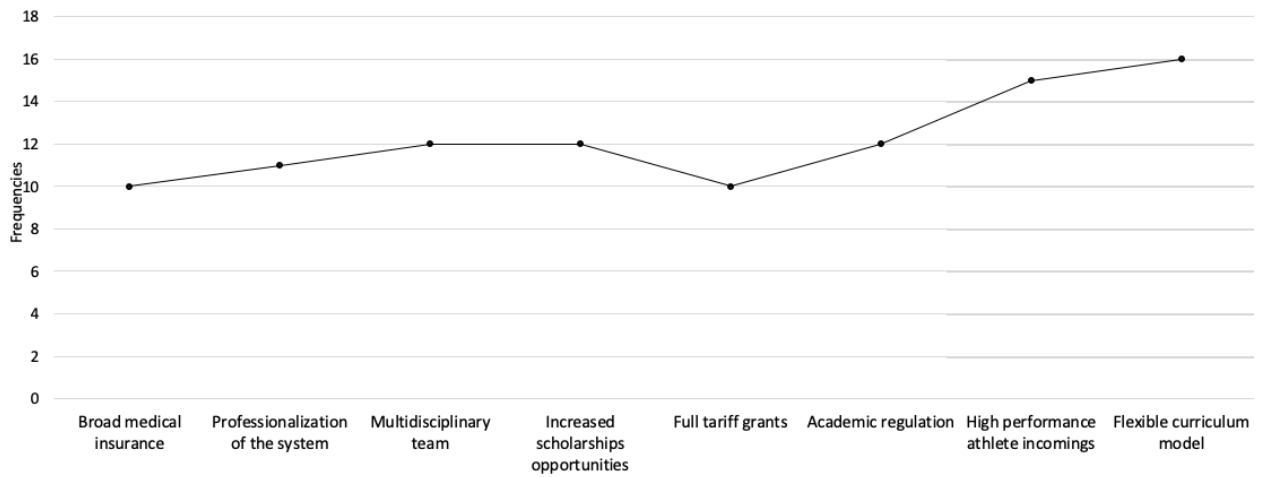


Figure 8. Suggestions to improve duality of sports and academic field.

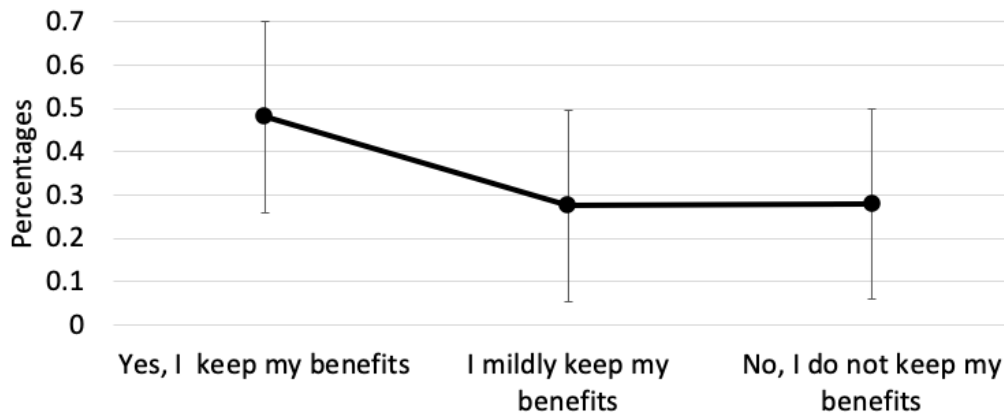


Figure 9. Institutional support to keep scholarships and/or benefits during off season period.



Finally, in regard to the sports area, the athletes were asked if the support received from trainers or sports Federation among off season periods allowed them to keep their scholarships and benefits. Results are displayed in Figure 9. No significant differences were observed between the athletes who keep their benefits during off season periods and those who do not keep their benefits ( $F(2,54) = 1.25, p > .05$ ).

### **Critical incidents**

Qualitative information presented in Tables 3, 4 and 5 emerge from the in-deep interview. This information is processed in line with the quantitative proceedings looking forward to further understanding the main obstacles reported by the athletes.

Table 3. Critical incidents detected in the socioeconomic area.

<b>Category</b>	<b>Critical incident</b>	<b>Speech</b>	<b>How to improve</b>
Social	Emotional instability	"I was full of doubts. I felt I had to choose between studies or training. There was a time when I got really stressed and everything around me collapsed. Due to this, between 2012 and 2014 both my academic and sports performance considerably worsened."	Multidisciplinary teams from early stages
Social	Lack of communication	"I believe is not that difficult, there is only a lack of communication. I am missing someone to speak with in both institutions, sport and University."	Contact person, counsellor, guide
Economic	Social and media recognition with no economic benefit	"Yes, it would be necessary to have some more support. I mean, if you are an elite athlete it is assumed that you represent not only your region but your whole country as well. You should not be paying tariff. I had to pay tariff while I was not receiving any money; everything was on my own."	Marketing, publicity, comprehensive advice
Economic	Social and media recognition with no economic benefit	"I mean everyone is proud because Chile won a medal. However, if one meets that athlete and knows his/her real history there is a lot of sacrifice. And most of times it is a non-rewarded sacrifice."	Restructure grants or scholarships, increase benefits for athletes
Social	Stress, burden, mental health	"Yes, I find psychological work very important. There are many times which one feels collapsed. There are a lot of crisis periods, and enormous amounts of stress. One is susceptible to crumble."	Multidisciplinary team

*Statements made by the athletes are shown. Critical incidents are identified and organized in areas (social and economic). Proposals for improvement are raised after the qualitative analysis.*

Table 4. Critical incidents detected in the academic area.

Category	Critical incident	Speech	How to improve
Curriculum structure	Absence of regulation	"There were no academic policies to support high-performance athletes. I went to the Olympics and I had to miss classes during my first years as undergraduate."	Flexible curriculum
Curriculum structure	Absence of regulation	"I believe I missed a regulation. One needs support in terms of: <<I should not be doing this exam today; I need more time due to my specific circumstances>>."	Academic regulation taking into account the athletes
Lack of support programs	Academic counselling	"Being able of chatting with someone not only the undergraduate course coordinator. Knowing and adapting the academic load to the circumstances. Being told: <<these subjects are more likely to be coordinated with your training schedule, so take them. This way you can attend to classes and go back to trainings>>."	Support programs
High % of class attendance	Non-continuous academic flexibility	"The matter of flexibility when it comes to study for the exams. I find attendance to classes essential. It would be great to be able to study while being a professional athlete."	Curricular adaptations
Adaptation of Student Academic Regulation (RAE)	Low level of understanding from institutions	"Low level of understanding and support from institutions was the most frustrating factor for me as an athlete. That largely diminished my motivation. There are many times when one literally cannot go on; it is not about will."	Support programs

Statements made by the athletes are shown. Critical incidents are identified and organized in areas. Proposals for improvement are raised after the qualitative analysis. RAE: Reglamento Académico Estudiantil.

Table 5. Critical incidents detected in the sports area.

Category	Critical incident	Speech	How to improve
Lack of multidisciplinary teams	Relevant professional advice	"Psychological work is very important. When stress levels are too high and crisis comes into scene, it is necessary to work on psychological aspects with a professional team."	Transdisciplinary perspective
Incompatibility of training schedule	Academic loading and stress produce a diminishment on sports performance	"The aggregate of all the stress affects the sports performance. I performed my best this year 2019 because I graduated, and I was able to focus on my training."	Curricular flexibility

Statements made by the athletes are shown. Critical incidents are identified and organized in areas. Proposals for improvement are raised after the qualitative analysis.

A summary of the main critical incidents identified, and their frequencies are presented in Figure 10.

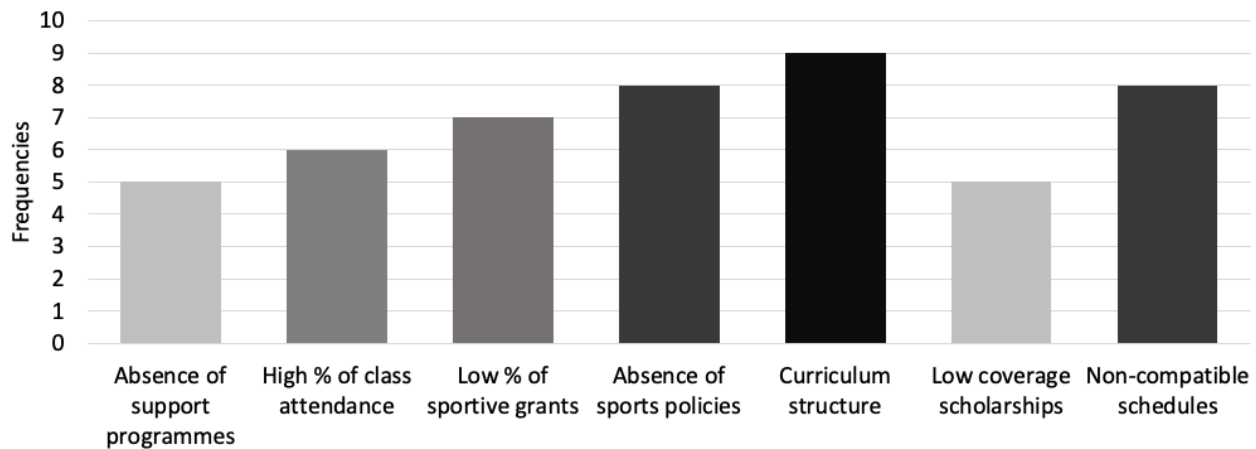


Figure 10. Main critical incidents reported by the interviewed athletes.

## DISCUSSION

Data presented in this study highlight the difficulties that athletes experience when trying to combine academic, social and sport processes. Under the light of this fact, higher education institutions may bring changes through sports policies intended for supporting and promoting the sport and the academic careers of an athlete. For this reason, it becomes necessary to analyse the main critical incidents and obstacles an athlete has to face from different perspectives. Our results emphasize the importance of being aware of the obstacles an athlete may find among his/her academic and sports development (Gómez et al., 2018). In this line, previous research underline the usefulness of a teacher being responsible of negotiating the academic barriers that an athlete may find in higher education (Santesmases, 2015). Also, previous literature suggest that institutions should implement comprehensive advice programs looking forward to guarantying the harmony between the sports and the academic areas (López et al., 2014).

Interpretative analyses unveiled that most of critical incidents were recognized in the academic area, although non-significant differences were observed after quantitative analyses. Main identified obstacles for elite athletes were uncompromising academic regulations which do not take into account other area different than academic; exclusionary educational policies; high percentages of required attendance; and absence of counselling. However, inspection of the critical incidents denoted the neutrality and passivity of the higher education institutions in this regard (Figure 3). This fact may explain the decline on the percentage of athletes with excellent grades from a 58% in basic education, to a 6% in higher education (Figure 1). These results are conflicting with other published research on which an 81% of participants had excellent marks in basic education (Reloba et al., 2016).

Most frequent critical incidents of the social area are related to emotional instability, mental health and breaking of relations. These data ratify the necessity of planning strategies and short-term objectives to improve psychological conditions of the athletes (Rascado et al., 2014). Beyond sports and education, 15.8% of the athletes have dependent children. They live in different regions and thus, they may experience rooting and nostalgia episodes due to the distance with their loved ones. In relation to the economic area, most of surveyed athletes do not enjoy benefits; and from those who perceive benefits, most enjoy tariff grants (Figure 4). In this context, the State through Sports Laws, should recognize and mobilize incentives not only for clubs, associations and federations but also for higher education institutions as a key link for the support and accompaniment for athletes.

Main conflict when combining sports and higher education studies are training schedule. Surveyed athletes train eleven hours and above, which limits normal attendance to lessons. This may negatively affect sport and/or academic performance. In this sense, a multidisciplinary support is vital to the proper development of the athletes in different areas (Álvarez y López, 2013; Jacques et al. 2016). From this perspective, it is important to understand that athletes do not deal solely with sport aspects; they also focus on selfcare in all contexts (Gómez et al., 2018). In accordance with this fact, data presented unveiled that a 78.9% of subjects are higher education students, and all of them know in different levels languages as English, German and others. These aspects may have a positive impact on attracting new personal and professional growth opportunities.

Neglecting critical incidents presented in this study may be counterproductive in the achievement of both athlete's personal goals and sporting national system's purposes. With a perspective of improvement, athlete's suggestions were raising a flexible curriculum and an additional incoming for being an elite athlete. This may contribute to bridge the existing gaps that athletes may find in higher education (Sánchez-Pato et al. 2018). Following these lines, previous research (Guardia, 2004; Jacques et al., 2016) suggest the multidisciplinary cooperation between academic and sports professionals looking forward to generating new counselling programs for athletes and educational institutions. While these variables are not easy to handle in the short-term, it is necessary to open new prospects looking forward to improving athlete's conditions.

## CONCLUSION

One of the new challenges that sporting national system has to face is to ensure athlete's projections and to avoid abandonment. Considering educational context, it was possible to identify main obstacles that a rower has to face in higher education studies while mainlining his/her sports career. In this respect, results showed that most of critical incidents that athletes identified were related to higher education. Current curriculum is rigid and do not take into account the particular case study of each athlete. This is joined with an absence of supporting and comprehensive programs. In addition, low percentage of sportive grants were also identified. All these facts add significative stress levels to sports, academic and personal processes. Within multidisciplinary teams, it is necessary to consider a psychologist and a professional in the social area looking forward to guide and equip athletes with tools that allow them dealing with uncertainty and emotional crisis. The results presented in this paper contribute to the improvement of public policies and innovation programs within the higher education and sports institutions.

## AUTHOR CONTRIBUTIONS

José Aguilar-Navarrete: bibliographic search; design and application of the study; data collection; analysis and interpretation of the results; article writing; critical review of the article. Jorge Flández: design and application of the study; data collection; analysis and interpretation of the results; article writing; critical review of the article. Javier Gene-Morales: analysis and interpretation of the results; article writing; critical review of the article. Juan Carlos Colado: analysis and interpretation of the results; article writing; critical review of the article.

## SUPPORTING AGENCIES

Agencies: Chilean Rowing Federation; Chilean Olympic Committee.

## DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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