Bullying and cyberbullying: Variables that influence university dropout

Acoso y ciberacoso: Variables de influencia en el abandono universitario

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Abstract
The increase in dropout rates in higher education is a phenomenon that has generated a lot of interest because of the need to deal with its economic, personal, and social consequences, and because of its prevalence, estimated around 30% in Spain. There is a similar interest in violent behavior in university classrooms, which has also been seen to have increased in recent years. Given that, and the fact that research has shown personal variables to be more influential in dropout from higher education, the aim of this study is to explore whether those students who are the victims of bullying (both traditional and cyberbullying) are closer to dropping out from their degree courses. To that end, 1,653 first-year students doing various degree courses in the north of Spain were asked to complete a questionnaire. The results of a Bayesian analysis showed that students who were victims of bullying were more likely to consider dropping out than students who were not victims of bullying. In addition, variables related to social integration (support from friends and teachers) exhibited a moderating effect. These findings raise the urgent need to include intervention strategies in relation to bullying in university plans to prevent dropout.

Resumen
El aumento del abandono en los estudios superiores es un fenómeno que suscita un gran interés por la necesidad de paliar los efectos económicos, personales y sociales que genera; y por su nivel de prevalencia, que informes recientes cifran en España en torno a un 30%. Algo semejante ocurre con los comportamientos violentos en las aulas universitarias, cuyo incremento se ha constatado en los últimos tiempos. Teniendo esto en cuenta, y dado que tal y como pone de manifiesto la investigación científica son las variables personales las que parecen ejercer un mayor peso en el abandono de los estudios superiores, el objetivo que este trabajo persigue es investigar si aquellos universitarios que están siendo víctimas de acoso (acoso tradicional y ciberacoso) pueden tener un mayor planteamiento de abandono de la titulación. Para ello, se implementó un cuestionario a 1.653 estudiantes de primer curso de varias titulaciones de una universidad del norte de España. Los resultados del análisis bayesiano realizado muestran que aquellos estudiantes que son víctimas de acoso, en comparación con aquellos que no lo son, se plantean abandonar sus estudios en mayor medida, teniendo además las variables relacionadas con la integración social (apoyo de amigos y profesores) un efecto moderador. Estos hallazgos plantean la urgente necesidad de incluir estrategias de intervención sobre el acoso en los planes de prevención del abandono universitario.

Keywords / Palabras clave
Higher education, university students, intention to drop out, persistence, violence, bullying, cyberbullying, social integration.
Educación superior, estudiantes universitarios, intención de abandono, permanencia, violencia, acoso, ciberacoso, integración social.

1. Introduction

Nowadays, one of the main problems affecting higher education is university students dropping out, which is not only a national concern, but also a concern within the European Union and internationally (González-Ramírez & Pedraza-Navarro, 2017; Tuero et al., 2018).

However, defining university dropout is not simple. As Aina (2013) and Heublein (2014) showed, it may refer to various different events such as changing courses or changing universities. Whatever the type of event, the dropout process is usually operationalized by confirming that the students are no longer signed up to their original course for two years after the last time they registered (Gury, 2011).

The most recent report from the Spanish Ministry of Science, Innovation, and Universities (2019), about the 2014/15 university cohort, showed that 21.5% of the Spanish students who registered for the first year of a university course definitively dropped out, whereas 8.2% changed course, giving an overall dropout rate of 29.7%. Given the scale of this dropout rate, it is no surprise that over recent years many studies have been conducted aimed at determining the most important variables in this event, as well as at assessing the extent of their influence on the final decision (Duque, 2014; Roso-Bas et al., 2016; Sosu & Pheunpha, 2019; Vergara et al., 2017).

For one of the foremost experts on the subject, Tinto (1975), university dropout may be produced by a combination of causes that interact with each other, with key relationships being between academic integration, social integration, and institutional commitment.

Other more recent studies have also shown an interest in determining which the variables that allow students to persist in their studies are (Strom & Savage, 2014; Suhlmann et al., 2018; Vázquez-Alonso & Manassero-Mas, 2016), assuming continuing at university to be the opposite phenomenon to dropping out. In this regard, the particularly important factors were found to be students' academic careers (Casanova et al., 2018), in which the variables that operate from a personal perspective are significant. In addition, social integration variables have been found to be important, based on relationships with teachers and classmates (Esteban et al., 2016; Mendoza et al., 2014).

As one might appreciate, working from a holistic, comprehensive perspective means that the causes of dropout in higher education are so broad and varied that its different dimensions make it difficult to approach it as a single entity. Aware of this, some more contemporary studies have underscored the need to continue addressing the issue, placing all their emphasis on the student and on the variables that bridge the personal and the social, as well as affective-motivational variables (Álvarez-Pérez & López-Aguilar, 2017; Broc, 2011). One variable of this type is the students' experience of episodes of bullying, something which can lead to academic absences, lack of social integration, and poor performance among other things (García & Ascensio, 2015). It can also be somewhat related to the decision to drop out of higher education, particularly considering recent studies demonstrating the relationship between dropout and missing classes (Aguado, 2017; Cox, 2016), poor performance (Da-Re et al., 2015; Garzón & Gil-Flores, 2017), and a lack of integration in the class-group (González-Ramírez & Pedraza-Navarro, 2017; Vergara et al., 2017).

Furthermore, the increase in bullying cases in recent years (both traditional and cyberbullying) has heightened interest in this problem in the area of higher education (Álvarez-García et al., 2017; Prieto et al., 2015), even more so if one considers the prevalence, which ranges from 20% to 50% of university students (Vergel et al., 2016), and the academic, social, and personal impact it can have (Tippett & Wolke, 2014). There is a wide range of negative personal repercussions, in particular suffering feelings of unhappiness (Nansel et al., 2004), developing anxiety (Reijntjes et al., 2010) and depression (Zwierzynska et al., 2013), feelings of loneliness, isolation, and poor social skills (Veenstra et al., 2005), and even triggering a tendency to self-harm or suicidal ideations (Winsper et al., 2012).

Based on that, the main objective of the current study was to examine the relationship between the existence of bullying (traditional and cyberbullying) at university and the intention to drop out, and to assess the role that might be played by having satisfactory relationships with teachers, classmates, and friends.

2. Methodology
2.1. Participants

The participating sample was made up of 1,653 students from the University of Oviedo aged between 17 and 48 years old (M=19.4; SD=3.4). Most were women (75.5%) rather than men (24.5%). This imbalance is due to the nature of the student populations on the courses examined in our study, which exhibit these differences in students by sex. Almost a third (62.2%) of the students were studying courses within social sciences (degrees in infant education and primary education) whereas 35.3% were doing courses in health sciences

(degrees in psychology, nursing, and speech therapy), and 2.5% were doing degrees in arts and humanities (degrees in philosophy).

2.2. Instrument

In order to collect information for the study we used the University Violence Questionnaire (UVQ), created ad hoc using current theoretical models and empirical evidence, and in part based on two questionnaires that have been used previously with good results (Dobarro et al., 2018), although they were more focused on cyberbullying. Both of those questionnaires were aimed at students; the first took the victim's perspective (University Online Victimization Questionnaire) and the second used an observer's perspective (Observed University Online Victimization Questionnaire).

The University Online Victimization Questionnaire from Dobarro et al. (2018) has 21 items which ask the student about various types of aggression they might experience via mobile phones or the internet. The design of this questionnaire refers to Nocentini's theoretical model (Nocentini et al., 2010). In the questionnaire, the students are asked to indicate how often they have been victims of bullying in the previous year in each of the situations described, they respond using a Likert-type scale with four response alternatives (1=never, 2=occasionally, 3=almost always, and 4=always). Examples of the items include: "a classmate has posted compromising photos of mine online without my permission in order to make fun of me or hurt me", "I have received insults from classmates, or been made fun of, in private, via email, social networks, or instant messaging services (Snapchat, Facebook, Instagram, etc.)", "Some classmates have conspired to send me to Coventry (give me the silent treatment) in class", and "I have felt ignored or excluded in the class group or in the university because of my sexual orientation or identity".

The Observed University Online Victimization Questionnaire (Dobarro et al., 2018) has 26 items, each of which identify possible aggressions via mobile phones or the internet as above. However, in this case the student is asked to indicate how often they have seen these situations in the previous year. The response is given on a Likert-type scale with four response alternatives (1=never, 2=occasionally, 3=almost always, and 4=always). Examples of the items include "some students give other students nicknames in order to ridicule them", "some students make fun of their classmates for their sexual orientation or identity", "students manipulate photographs and videos of their classmates and post them online in order to make fun of them or hurt them", and "students video or photograph other people in sexually suggestive poses without their consent".

In addition to the items taken from these two questionnaires, we added a block of personal and sociodemographic questions, along with a set of items specifically related to more traditional bullying, dropping out, and social integration. To measure the final two areas, the intention to drop out, and the establishment of relationships that could be a support for the student or not, we took four items from the study by Bernardo et al. (2018). Although those items in the test used a 4-point Likert-type scale going from 1=completely disagree to 4=completely agree, in the final analysis we recoded the responses as 1=yes, 2=no, to simplify the results and make them easier to interpret.

The final questionnaire (University Violence Questionnaire) is a self-report with a total of 71 items collecting sociodemographic information, information about the intention to drop out, relationships which could be support for the student, and information about the frequency of both traditional and cyber-bullying behavior between university students (Bernardo et al., 2018; Dobarro et al., 2018).

We confirmed the soundness of the instrument from the results of an exploratory factor analysis (using the principal components method and direct Oblimin rotation) which validated the test structure (KMO=.837, Barlett p=.000), explaining 48.65% of the variance, and also by the results of the reliability analysis (Cronbach alpha=.897).

2.3. Procedure

Before administering the instrument, the researchers sent emails to various university institutions requesting their collaboration in the study. We held a series of meetings with professors who had decided to participate in order to explain the study objectives and present the questionnaire. The questionnaire was applied to groups during class hours in the various degree courses following a date being agreed with the teachers who accepted to participate.

The University Violence Questionnaire was administered to students in the first year of various degree courses in different departments in the University of Oviedo during academic years 2016-17 and 2017-18. We sought students' participation in writing, informing them of the nature and objective of the study. The study was carried out in compliance with all of the ethical principles, and guidelines for confidentiality and data protection necessary in this kind of study.

2.4. Data analysis

Data analysis was performed using the SPSS statistics package, version 22.0 for Windows. Firstly, we carried out a descriptive analysis, recoding the intention to drop out variable to a dichotomous variable: the response alternatives 1 and 2 (completely disagree and disagree) were recoded as no intention to drop out, and options 3 and 4 (agree and completely agree) were coded as the intention to drop out.

Following that, and in order to examine the effect of being the victim of bullying (either traditional or cyber-bullying) on the decision to drop out, we performed a Bayesian analysis, as the Bayes factor allows comparison of probabilities between the null hypothesis and the alternative in such a way that the closer it is to zero, the better the evidence in favour of the alternative hypothesis (Cleophas & Zwinderman, 2018).

Finally, using contingency tables, we examined the moderating effect of certain variables, such as students getting support from friends and teachers, on being victims of bullying and exhibiting the intention to drop out.

3. Results

We examined the proportion of university students who were victims of bullying (both traditional bullying and online bullying) from their classmates. To calculate that, we took the scores in the University Violence Questionnaire (UVQ) that were in the 75th percentile and above, which included those cases who scored at least one standard deviation above the scale mean. In this regard, it is important to note that other studies into bullying (Álvarez-García et al. 2015; Garaigordobil, 2011) used scores above the 90th percentile (P90) as severe bullying. Our results showed that 17.3% of first-year students had been bullied at university, and 7.8% of students had suffered from severe bullying.

Table 1 indicates that 41.9% (N=692) of students had reported considering dropping out at some point, whereas 58.1% (N=961) had never considered it.

Table 1. Descriptive statistics					
	Drop out	N	Mean	Deviation	Mean error
VicScore[a]	=NO	961	21.9126	3.97055	.12808
	=YES	692	26.1358	5.13455	.19519

a. VicScore: Victim score, the total of all items related to being a victim of bullying.

We continued the analysis by examining the relationship between being a victim of bullying and the decision to drop out of higher education. The results of the Bayesian analysis (Table 2) show that victims of bullying were significantly more likely to drop out (Bayes factor .000; p=.000).

Table 2. Independent sample Bayes factor test (Method=Rouder)[a]					
	Difference in means	Bayes factor[b]	t	df	Sig. (bilateral)
VicScore	4.2232	.000	18.847	1651	.000

a. Assuming different variance between groups.
b. Bayes factor: null hypothesis vs. alternative hypothesis.

Table 3 gives the credible intervals at 95%.

Table 3. Characterization of posterior distribution for independent sample mean					
	Posterior			95% credible interval	
	Mode	Mean	Variance	Lower limit	Upper limit
VicSocre	4.2232	4.2232	.055	3,7650	4,6815

a. Prior for variance: Diffuse. Prior for mean: Diffuse.

Following that, we examined the moderating effects of variables such as being able to count on the support of teachers. The results indicated that students who were victims of bullying and who did not have good relationships with teachers were more likely to consider dropping out than those who had not been the victims of bullying (Chi-squared 248.8; p=.000). In this case the effect size was moderate (Cramer's V=.525). In addition, the contingency table (Table 4) shows that being the victim of bullying and not having the support of teachers increased the likelihood (64.9%) of considering dropping out of the course.

Table 4. Relationship between being a victim of bullying, considering dropping out, and support from teachers (N=1653)			Intention to drop out		
Relationship with teachers			NO	YES	Total
No close relationship	Not a victim of bullying	Recount	460	142	602
		% within VICTIM	76.4%	23.6%	100.0%
	Victim of bullying	Recount	52	96	148
		% within VICTIM	35.1%	64.9%	100.0%
Close relationship	Not a victim of bullying	Recount	402	178	580
		% within VICTIM	69.3%	30.7%	100.0%
	Victim of bullying	Recount	47	276	323
		% within VICTIM	14.6%	85.4%	100.0%

We found a similar occurrence with support received from student groups (Chi-squared=122.8; p=.000; Cramer's V =.480). As Table 5 shows, the perception of lacking that support increased the likelihood of dropout in students who were victims of bullying (80.6%) compared to those who were not (28.2%).

Table 5. Relationship between being a victim of bullying, considering dropping out, and support from student groups (N=1653)			Intention to drop out		
Support from student groups			NO	YES	Total
No support	Not a victim of bullying	Recount	582	229	811
		% within VICTIM	71.8%	28.2%	100.0%
	Victim of bullying	Recount	60	250	310
		% within VICTIM	19.4%	80.6%	100.0%
Support	Not a victim of bullying	Recount	280	91	371
		% within VICTIM	75.5%	24.5%	100.0%
	Victim of bullying	Recount	39	122	161
		% within VICTIM	24.2%	75.8%	100.0%

We also examined the effect of support from friends (Chi-squared=246.5; p=.000; Cramer's =.458), although the effect size was smaller. Not having support from friends at university increases the likelihood that victims of bullying consider dropping out (see Table 6).

Table 6. Relationship between being a victim of bullying, considering dropping out, and support received from friends at university (N= 1653)			Intention to drop out		
Friends' support			NO	YES	Total
Without the support of good friends	Not a victim of bullying	Recount	75	148	223
		% within VICTIM	33.6%	66.4%	100.0%
	Victim of bullying	Recount	36	219	255
		% within VICTIM	14.1%	85.9%	100.0%
With the support of good friends	Not a victim of bullying	Recount	787	172	959
		% within VICTIM	82.1%	17.9%	100.0%
	Victim of bullying	Recount	63	153	216
		% within VICTIM	29.2%	70.8%	100.0%

4. Discussion

The main aim of this study was to examine the relationship between bullying at university and students' intentions to drop out of their courses. In order to do that, we began by examining the prevalence of (traditional and online) bullying in the higher education context. As expected, and despite bullying being a topic that has been studied principally in compulsory education, peer bullying is also relatively common at university. In fact, our study confirmed a prevalence (for both traditional and online bullying) of 18%. Studies such as Marraccini et al. (2018) have demonstrated similar results, finding a rate of bullying of 22% in their sample, while other authors have put the rate of cyberbullying in Spanish universities above 50%, similar to data from the USA

(Yubero et al., 2017). Perhaps these not insignificant numbers are due to young people bringing this behavior with them from secondary education, or maybe because universities have few assessments or mechanisms for these kinds of problems, which helps them embed when they do occur or become established over the course of the university phase of education.

If we turn to the principal objective of the study, the analysis of the relationship between bullying and the intention to drop out in university students, the results confirm that suffering from bullying (both traditional and online bullying) is an influential variable that increases the likelihood that young people would consider dropping out of their higher education courses. These results are in line with findings from other authors which range from correlations that are weak but significant (Dobarro et al., 2017), to strongly supported correlations (Alban & Mauricio, 2019). In this regard, it is also important to consider the transition period, students moving from secondary to higher education. It is a time when there are changes of surroundings, differences in how teaching is organized and how evaluations are carried out, more variable processes of communication with teachers, and disconnection from prior habitual friendship groups, meaning people have to look for new relationships with their classmates. All of these may lead students to feel less support and be at greater risk of dropping out (Feixás et al., 2015; Figuera & Álvarez, 2014).

The support provided by appropriate social integration among peers has been shown to be a protective factor for adolescents' development and wellbeing (Estévez et al., 2009; Rueger et al., 2010). This is something which, in addition to being confirmed in our study, has been seen in research by Cava et al. (2010) and Cava (2011). The conclusion from this is that the students who are more vulnerable to bullying by their classmates are those who are more socially isolated. In line with that, the results of our study show that there is an inverse relationship between being a victim of bullying and the support that students get from their friends and teachers. Similar to the intention to drop out, those who reported the highest ratings in their relationships with classmates (Arriaga et al., 2011) and with teachers (Bernardo et al., 2016) were the least likely to consider dropping out.

In this regard, and as noted by Luengo (2017), intervention models based on peer mediation (Villanueva et al., 2013), integrated models to improve coexistence (Torrego, 2006; 2008; Torrego & Martínez, 2014), cooperative learning (León et al. 2016), and support teams (Avilés & Alonso, 2011), among others, indicate the importance of receiving support from classmates in the prevention of bullying. These types of initiatives are relatively widespread in pre-university education but not in higher education. Given that being the victim of bullying has been shown to be a risk variable for course dropout, maybe it should also be considered when designing approaches to prevent or stop bullying (both traditional and online) in the university setting.

5. Conclusions

For many years, some authors questioned the existence of bullying behavior in the university context, ascribing it mainly to the previous educational stages. Our study confirms the existence of this kind of behavior in the university environment, with a prevalence of almost 18%, which is almost within the usual range (20% to 50%) found in the few previous studies that have been carried out (Vergel et al., 2016).

Our study went beyond that, however, and looked at the relationship between being a victim of bullying in the higher education environment and the intention to drop out of the course. The results were conclusive in showing that relationship and demonstrating how the negative impact of bullying (both traditional and online) can trigger dropout from university. We also examined the moderating effect on that relationship of variables such as support from teachers and friends. We found that they can act as protective factors against considering dropping out. Therefore, these results demonstrate the urgent need to include different intervention strategies against bullying in university plans to prevent dropout.

Despite the important findings from our study, we must highlight the limitation of analyzing the data via exploratory factor analysis. Because of that, and with an eye to future research, it would be interesting to carry out a confirmatory factor analysis using a larger sample, as well as differentiating between traditional and online bullying now that our study has confirmed the presence of both types of bullying and their influence on the intention to drop out of the course.

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