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Connections between bullying victimization and satisfaction/frustration of adolescents' basic psychological needs[☆]

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ABSTRACT

The aim of this study is to analyse the connection between bullying and the dichotomy satisfaction-frustration of the basic psychological needs in adolescents. A total of 1845 students from Secondary Education (928 boys and 917 girls), and Baccalaureate-Year 1 ($n=278$), aged between 12 and 17 ($M=14.51$, $SD=1.55$), from 16 schools of four Spanish provinces participate in the study. Students complete the *Psychological Needs Satisfaction-Frustration Scale* and the subscale *Victimization* from the *European Bullying Intervention Project Questionnaire* concerning three subjects: Mathematics, Spanish Language and Literature and Physical Education. Results from the structural equation analysis reflect that victimization negatively predicts the satisfaction of the three basic psychological needs of competence, relatedness and autonomy, and positively their frustration in the three subjects. These results show the importance of creating educative contexts oriented to promote an increase of the students' basic psychological needs of autonomy, relatedness and competence to prevent and/or lessen the possible effects of bullying in their victims.

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Conexiones entre la victimización en el acoso escolar y la satisfacción-frustración de las necesidades psicológicas básicas de los adolescentes

RESUMEN

El objetivo del presente estudio es analizar la conexión del acoso escolar con la dicotomía frustración-satisfacción de las necesidades psicológicas básicas en adolescentes. Un total de 1845 estudiantes (928 varones y 917 mujeres), de Educación Secundaria (1^º ESO, $n=406$; 2^º ESO, $n=390$; 3^º de ESO, $n=364$, 4^º de ESO, $n=407$) y Bachillerato (1^º de Bachillerato, $n=278$), con edades comprendidas entre los 12 y los 17 años de edad ($M=14.51$, $DT=1.55$), de un total de 16 centros educativos de cuatro provincias españolas distintas (Asturias, León, Albacete y Cuenca) participan en el estudio. Para ello los estudiantes cumplimentan la Escala de Satisfacción y Frustración de las Necesidades Psicológicas Básicas y la subescala de Victimización del *European Bullying Intervention Project Questionnaire* en referencia a tres materias curriculares diferentes: Matemáticas, Lengua Castellana y Literatura y Educación Física. Los resultados obtenidos a través de análisis de ecuaciones estructurales reflejan que la victimización predice negativamente la satisfacción de las tres necesidades psicológicas básicas de competencia, relación y autonomía y positivamente la frustración de las mismas necesidades en las tres materias curriculares. Estos resultados muestran la importancia de crear contextos educativos orientados a promover un incremento en

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las necesidades psicológicas básicas de autonomía, relación y competencia de los estudiantes en aras de prevenir y/o paliar los posibles efectos del acoso escolar en sus víctimas.

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Introduction

Nowadays, bullying is one of the most important problems that educational practitioners have to face. Therefore, in recent years a significant number of scientific productions have emerged addressing this problem (Albayrak, Yildiz, & Erol, 2016; Bondu, Rothmund, & Gollwitzer, 2016). Cepeda-Cuervo, Pacheco-Durán, García-Barco, and Piraquive-Peña (2009, p. 518) point out that bullying is “a type of violence that is manifested by repeated psychological, physical or social aggressions suffered by a child in the school environment by their classmates”. It is important to differentiate between school violence and bullying. While bullying has a repeated and continued nature, school violence does not necessarily have to be persistent (Fialho & Bakshi, 2016; Graham, 2016; Menéndez & Fernández-Río, 2018). For example, when a student in class makes a violent act on another classmate, it does not have to be bullying, unless that behaviour is continued over time. In recent years, with the rise of Information and Communication Technologies (ICT), a new type of bullying appeared: cyberbullying, which involves repeatedly harassing an individual through technological means (Garaigordobil & Martínez-Valderrey, 2015; Garaigordobil, 2014). Authors such as Garaigordobil (2014) state that between 40% and 55% of schoolchildren are involved in this type of bullying, either as victims or as aggressors showing the crucial relevance of this type of bullying in the current educational system.

Bullying is understood as violent behaviour among equals characterized by its intentionality, persistence and power imbalance (Olweus, 2005). It has been analysed from different points of view, although one of the most studied one is the double profile: aggression vs victimization (Magaz, Chorot, Santed, Valiente, & Sandín, 2016). Bullying as aggression is described as the situation where an individual exercises continuous negative conducts on another individual, while victimization deals with the opposite situation: a person experiences persistent negative behaviours by one or several partners (Bondu et al., 2016; Harbin, Kelley, Piscitello, & Walker, 2019). León-Moreno, Martínez-Ferrer, Musitu, and Moreno (2019) analyse the relationship between school violence and victimization, considering the motivation for revenge, avoidance and benevolence in a sample of 671 adolescents between 10 and 16 years. The results reflect a clear positive relationship between victimization and school violence, both direct and indirect. Likewise, victimization is also linked to avoidance motivation and benevolence, since the predictors of victimization are several. Cook, Williams, Guerra, Kim, and Sadek (2010) conduct a meta-analysis of 153 studies linked to bullying and find as individual predictors of victimization variables such as peer status, social competence or academic performance. The meta-analysis also reflects that victimization is clearly related to other variables of great importance such as school climate or family environment. A more recent meta-analysis (Schoeler, Duncan, Plouhidis, Cecil, & Pingault, 2018) of quasi-experimental designs shows that victimization is related in the short term to well-being, anxiety and depression. These results are supported by recent studies like the one carried out by Miranda, Oriol, Amutio, and Ortíz (2019) in a sample of 5774 schoolchildren, which reflects that the support received by parents at home helps to reduce the inverse relationship between victimization and life satisfaction. All elements that are related to victimization, such as depression, anxiety or life satisfaction in people who suffer bul-

lying, can lead directly to school dropout, as reported by authors such as Hutzell and Payne (2018).

In the last three decades, one of the most used frameworks to study and understand individuals' motivation in the school context is the Self-Determination Theory (Ryan & Deci, 2002). It states that people have three innate and universal needs, decisive in their motivational behaviour and psychological well-being: (a) *Autonomy*: intentional and self-referenced behaviour; (b) *Competence*: feeling of effective interaction with the context and having experiences to show one's own abilities; and (c) *Relationship*: feeling of being included and being taken care of by others. The satisfaction of these three needs is associated with high levels of self-determined motivation, since they mediate the effects of socio-contextual factors such as the teacher or classmates (Vallerand, 2001). Recently, the frustration of these basic psychological needs emerges as a construct that does not simply represent lack of satisfaction (Vansteenkiste & Ryan, 2013). Research shows how the satisfaction of the three needs predicts positive consequences such as intrinsic motivation, while their frustration predicts negative consequences such as negative affect (Longo, Gunz, Curtis, & Farsides, 2016). Therefore, current research seems to opt for using this double construct of frustration-satisfaction of the basic psychological needs for the study of individuals' motivation.

Research on the connection between basic psychological needs and bullying in the educational context is scarce. Young-Jones, Fursa, Byrket, and Sly (2015) study this relationship in 130 high school and university students, finding that those who point out that they are victims of bullying, both past and present, have less academic motivation. In addition, those who were victims had significantly lower levels of autonomy and competence. On the other hand, Hein, Koka, and Hagger (2015) study the relationship between the frustration of basic psychological needs, anger, bullying and the teacher's controlling behaviour in secondary school students. They find that students' perception of this type of behaviour is indirectly related to anger and bullying through the frustration of the basic psychological needs. That is, their frustration may be related to feelings of anger, which in turn relate to aggressive behaviours with other students such as bullying.

So far, there are no published studies that analyse the connection between the dichotomy frustration-satisfaction of the basic psychological needs with bullying. This could be the first study that analyses this connection in high school students. Based on previous research that indicates: (a) A positive and significant correlation between the frustration of basic psychological needs and bullying (Hein et al., 2015); (b) That the frustration of these needs is associated with negative behaviours such as depression or anxiety (Mehdipour, Gholamali, & Hejazi, 2016), variables closely linked to victimization behaviours (Forbes, Fitzpatrick, Magson, & Rapee, 2019); and (c) that victimized individuals suffer a deterioration of their basic psychological needs (Harbin et al., 2019), the main objective of this research is to analyse the predictive power of victimization on the satisfaction-frustration dichotomy of the psychological needs of autonomy, relationship and competence in three different curricular subjects of Secondary Education: Mathematics, Spanish Language and Literature and Physical Education. Taking the above as a reference, the following hypothesis is proposed (H1): victimization predicts negatively the satisfaction of the three basic psychological needs and positively their frustration.

Method

Design and participants

An ex post facto prospective cross-sectional and correlational research design is used (Bisquerra, 2012). A total of 1845 students (928 men and 917 women), from Secondary Education (1st grade, $n=406$; 2nd grade, $n=390$; 3rd grade, $n=364$, 4th grade, $n=407$) and Baccalaureate (1st grade, $n=278$), aged between 12 and 17 years old ($M=14.51$, $SD=1.55$), of a total of 16 high schools in three areas of Spain: north (Asturias), north-central (León) and south-central (Cuenca and Albacete) participate in the study. 597 answer the questionnaire referring to Mathematics, 600 to Spanish Language and Literature, and 648 to Physical Education. All schools have medium socioeconomic status, between 400 and 700 students, and offer Compulsory Secondary Education and Baccalaureate. The researchers do not have any type of relationship with the students.

Instruments

- **Satisfaction-frustration of basic psychological needs.** The Spanish version of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS; Longo, Alcaraz-Ibáñez, & Sicilia, 2018) is used. This includes six subscales that measure the three needs: *autonomy*, *relationship* and *competence* and for each need, three subscales assess the satisfaction and frustration of each of them through three items: *autonomy satisfaction* (e.g., “I feel that I have freedom to do things”), *relationship satisfaction* (e.g., “I feel that I care about the people around me”), *competence satisfaction* (e.g., “I feel that I am quite good at what I do”), *autonomy frustration* (e.g., “I feel obligated to perform tasks in a certain way”), *relationship frustration* (e.g., “I feel that sometimes others exclude me”) and *competence frustration* (e.g., “I doubt of being able to properly perform my tasks”). The questionnaire is preceded by the heading: “In my class of . . .” followed by one of the three subjects where the variables are measured: “Mathematics, Spanish Language and Literature or Physical Education”. All items are scored on a Likert-type scale from 1 = strongly disagree to 7 = strongly agree. Reliability estimates for BPNSFS subscales range between .79 and .85 for *autonomy satisfaction*, .72 and .77 for *relationship satisfaction*, .75 and .85 for *competence satisfaction*, .69 and .80 for *autonomy frustration*, .74 and .79 for *relationship frustration* and .74 and .80 for *competence frustration* (Longo et al., 2018).
- **Bullying.** The victimization subscale of the *European Bullying Intervention Project Questionnaire*, developed by Brighi et al. (2012) and validated in Spanish by Ortega, del Rey, and Casas (2016) was used. It is made up of seven items (e.g., “Someone has hit me, kicked me or pushed me”). All items have a Likert design, with a score between 0 = never and 4 = always, referring to a time interval of the last two months. Cronbach’s alpha in the original scale is .80.

Procedure

To conduct the present study, first, permission from the Ethics Committee of the University of the different authors is obtained. Subsequently, the research team contacts the management teams of the different participating high schools to request their collaboration. Families are subsequently informed of the objectives of the study and informed consent is obtained from all those interested in their children participating in the project. Then, the researchers, in each of their areas of residence, administer the questionnaires over approximately 20 minutes, indicating that the answers are completely anonymous and that in no case do they influence the

Table 1

Goodness of fit indexes in Confirmatory Factor Analysis and in hypothetical models

	χ^2/df	*CFI	*RMSEA	SRMR
Mathematics				
BPNSFS	1.59	.987	.031 (.023–.040)	.033
Victimization	4.70	.857	.079 (.060–.098)	.058
Re-Specified Victimization	1.68	.981	.034 (.000–.072)	.031
Hypothetical model	1.76	.972	.036 (.030–.042)	.043
Spanish language and literature				
BPNSFS	1.56	.987	.031 (.022–.039)	.034
Victimization	8.29	.784	.110 (.092–.129)	.064
Re-Specified Victimization	1.03	.999	.007 (.000–.058)	.021
Hypothetical model	1.70	.973	.034 (.028–.040)	.044
Physical education				
BPNSFS	1.72	.984	.033 (.026–.041)	.033
Victimization	4.49	.853	.073 (.055–.092)	.059
Re-Specified Victimization	1.26	1.00	.000 (.000–.021)	.008
Hypothetical model	1.81	.968	.036 (.030–.041)	.040

students’ qualifications. All researchers follow the same protocol in the different high schools.

Data analysis

Confirmatory factor analyses of the hypothesized models are carried out, since they had not been validated either in the context used (different secondary school subjects), or for these formative ages (12–17 years). EQS 6.1 software is used. Subsequently, structural equations analyses are performed where the victimization factor predicts the six dimensions of the basic psychological needs. Preliminary analyses show a lack of multivariate normality, so it is decided to use the chi-square Satorra-Bentler statistic ($S-B\chi^2$) and robust standard estimators. The goodness of fit is determined by the following criteria (Byrne, 2008): * CFI (Comparative Fit Index) as an incremental adjustment index and * RMSEA (Root Mean Square Error Approximation) and SRMR (Root Mean Square Residual) as absolute adjustment index measures. To determine the goodness of fit, the appropriate cut-off criteria are chosen (Hu & Bentler, 1999) and attention is paid to whether the results approach or exceed the rigorous limits (indicated in brackets): $\chi^2/df \leq 2.0$; $IFC \geq .90$ (.95); $SRMR \leq .08$ (.07); $RMSEA \leq .10$ (.06).

Results

Confirmatory factor analysis

Goodness of fit indexes are calculated for the three samples separately and the two proposed models (Table 1). In all three samples, the BPNSFS scale shows optimal adjustment rates (Byrne, 2006; Kline, 2005). The victimization subscale, also in the three samples, does not reach acceptable levels of goodness of fit, so it is re-specified. The modification indices (Jöreskog & Sörbom, 1984), for items V1 and V3 show an estimate of the amount by which the discrepancy function would decrease if the analysis were repeated with the restrictions in that parameter, so they are eliminated. The re-specified victimization scale with five items shows optimal adjustment rates in the three samples.

Descriptive analysis and bivariate correlations

The results analysed through Cronbach’s alpha are, in all cases, adequate. The highest scores are observed, in the three samples, in the relationship satisfaction variable and the lowest in the victimization scores. The highest correlations appear, in negative, among the satisfaction / frustration of the same basic psychological need. The victimization variable significantly correlates negatively with

Table 2
Cronbach alphas, omega values, descriptive analyses and bivariate correlations among all variables

	α (IC 95%)	ω	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
Mathematics										
1. Autonomy Satisfaction	.93 (.94–.94)	.93	4.43	1.73	1					
2. Relationship satisfaction	.86 (.84–.88)	.87	5.60	1.26	.30**	1				
3. Competence Satisfaction	.91 (.90–.92)	.92	4.56	1.46	.37**	.34**	1			
4. Autonomy Frustration	.88 (.87–.90)	.89	3.47	1.66	-.47**	-.14**	-.16**	1		
5. Relationship Frustration	.89 (.88–.91)	.90	1.91	1.26	-.16**	-.55**	-.16**	.22**	1	
6. Competence Frustration	.88 (.87–.90)	.88	2.71	1.54	-.29**	-.25**	-.56**	.33**	.38**	1
7. Victimization	.70 (.67–.74)	.73	1.39	.44	-.16**	-.31**	-.22**	.16**	.41**	.29**
Spanish Language and Literature										
1. Autonomy Satisfaction	.91 (.90–.92)	.91	4.84	1.52	1					
2. Relationship satisfaction	.88 (.86–.90)	.88	5.58	1.30	.20**	1				
3. Competence Satisfaction	.87 (.85–.88)	.87	4.83	1.24	.30**	.40**	1			
4. Autonomy Frustration	.86 (.83–.87)	.86	3.32	1.53	-.36**	-.10*	-.17**	1		
5. Relationship Frustration	.90 (.89–.91)	.91	1.96	1.26	-.13**	-.57**	-.24**	.21**	1	
6. Competence Frustration	.87 (.84–.88)	.86	2.36	1.31	-.20**	-.29**	-.54**	.26**	.48**	1
7. Victimization	.75 (.72–.78)	.75	1.42	.48	-.18**	-.47**	-.19**	.19**	.52**	.30**
Physical Education										
1. Autonomy Satisfaction	.92 (.91–.93)	.92	4.65	1.60	1					
2. Relationship satisfaction	.88 (.86–.90)	.88	5.69	1.21	.36**	1				
3. Competence Satisfaction	.91 (.89–.92)	.91	4.88	1.33	.28**	.44**	1			
4. Autonomy Frustration	.86 (.84–.88)	.86	3.24	1.45	-.41**	-.20**	-.11**	1		
5. Relationship Frustration	.90 (.89–.92)	.90	1.77	1.14	-.15**	-.64**	-.24**	.21**	1	
6. Competence Frustration	.87 (.85–.88)	.86	2.30	1.28	-.17**	-.37**	-.57**	.28**	.42**	1
7. Victimization	.72 (.69–.76)	.71	1.36	.45	-.23**	-.41**	-.13**	.20**	.47**	.28**

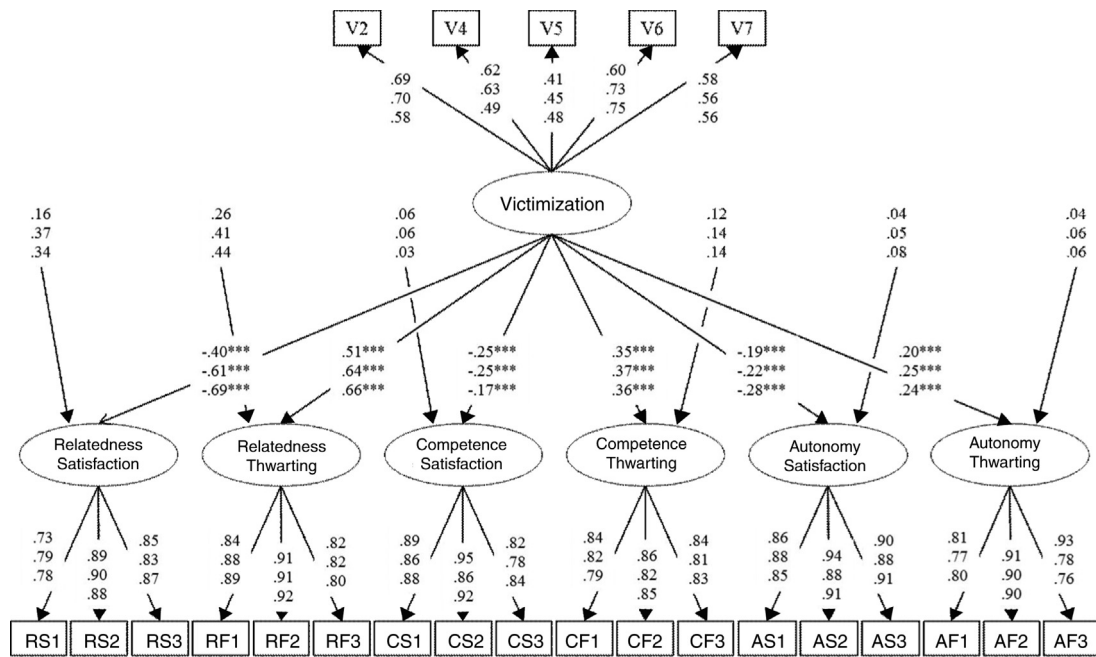


Figure 1. Hypothetical model in the three samples.

the satisfaction of the three basic psychological needs, and positively with the frustration of the same needs (Table 2).

Structural equation analyses models

In the three samples, the same model, where *victimization* predicts significantly the six dimensions of the basic psychological needs, is tested (Figure 1). The adjustment of the theoretical model is, in every case, optimum. The explained variance ranges between .03 and .66. The higher predictable value is for *victimization* over *relationship frustration* in all the cases, with R² values among .51 and .66. *Victimization* has the higher predictive value over *relationship frustration* in all the cases, with R² values among .51 and .66. *Victimization* predicts negatively the satisfaction of three of the basic psychological needs and positively the frustration of the same needs, which shows a negative impact in the psychological needs of the three analysed school subjects: Mathematics, Spanish Language and Literature, and Physical Education. Last, a multi-sample SEM analysis is conducted to confirm whether the samples are matched-samples or not in the theoretical model.

Multi-sample analysis

The measured invariance or factorial equivalence point if the presented model has the same meaning for different groups (Mathematics, Spanish Language and Literature, and Physical Education). The invariance in the causal analysis is linked to the imposition of restrictions in the model. Thus, an invariance *multistep* analysis was conducted (Byrne, 2008). First, the initial model was analysed without restrictions, which defined the starting point for subsequent comparisons with other models (Marsh & Byrne, 1993). Then, the structural weights were forced to stay invariable. For the next step, also covariance are kept steady. Last stage restricts too the structural residuals. The results evidence that the compared models present an acceptable adjustment index (Table 3). As the coefficient χ^2 is sensitive to the sample size, values for ΔCFI less than or equal to $-.01$ were used as criteria to indicate that the invariance null hypothesis cannot be rejected (Cheung & Rensvold, 2002). In that case, the biggest difference is $-.004$, which suggests that

the structure is, largely, invariant in the three analysed samples. These results provide a strong support for the proposed model. Therefore, the effects that the subject (Mathematics, Spanish Language and Literature, and Physical Education) has different causal relationships within the explicative model are very moderate.

Discussion

The basic aim of the present study is to evaluate the predictable power of *victimization* above the dichotomy satisfaction-frustration of the basic psychological needs of *autonomy*, *relationship* and *competence* in three different curricular subjects in Secondary Education: Mathematics, Spanish Language and Literature, and Physical Education. The results indicate that *victimization* predicts negatively the satisfaction of these three basic psychological needs and positively the frustration of these same needs. That relation was invariable in the three curricular subjects analysed.

Despite there is no published research on the dichotomy satisfaction-frustration of the basic psychological needs and bullying in Secondary students, research from authors like Hein et al. (2015), point a positively and significant correlation between the frustration of the basic psychological needs and harassment in a similar population. That result supports widely the findings described in the present study. In line with the scientific literature and the Self-Determination Theory (Ryan & Deci, 2002) results show that the satisfaction of the basic psychological needs is distinctly related with adaptive behaviours as intrinsic motivation (Huhtiniemi, Sääkslahti, Watt, & Jaakkola, 2019) or social responsibility (Menéndez & Fernández-Róo, 2017). These mentioned behaviours are essentials to build a positive classroom climate and lessen aggressive attitudes. Whereas, the frustration of this needs use to be linked to negative perceived behaviours like depression or anxiety (Mehdipour et al., 2016) that are closely related with *victimization* (Forbes et al., 2019). For that reason, results in the present study indicate that people who are bullying victims, which are victimized, who experience negative behaviour from one or more fellows (Bondu et al., 2016; Harbin et al., 2019), suffer frustration of their basic psychological needs of competence, autonomy and relationship; with all the negative impacts identified: moti-

Table 3

Model 1 = without restrictions; Model 2 = structural invariant weights; Model 3 = invariant structural covariance; Model 4 = invariant residual structural

Model	S-B χ^2	df	$\Delta\chi^2$	Δdf	*CFI	SRMR	*RMSEA (90% CI)
M ₁	1102.51	627	–	–	.971	.043	.034 (.032–.039)
M ₂	1117.18	639	14.67	12	.971	.045	.035 (.031–.038)
M ₃	1170.42	669	53.24	30	.969	.055	.035 (.032–.038)
M ₄	1273.33	727	102.91	58	.967	.060	.035 (.032–.038)

vation drop, depression or anxiety. Hence, all victimized students (or suspect to be) have to be helped to recover from the frustration of their basic psychological needs through educative programs “to promote the socio-emotional development to improve and prevent / reduce violence, because the best way to avoid violence is to build up coexistence” (Garaigordobil & Martínez-Valderrey, 2014, p. 300).

More can be said from a depth analysis for each one of the basic psychological needs evaluated. About *relationship*: a student who suffers bullying will have frustrated his or her need to relate with the other classmates (feels valued and integrated into a group as well as close to other students). Results in this study show that the biggest predictive value of *victimization* is the frustration of *relationship*. Therefore, relations among peers play a central role in bullying cases. It is important to highlight that bullies are deeply immerse in a phenomenon known as “homophily” (Van Ryzin & Roseth, 2018) and they use to relate exclusively with mates who see aggression as normal (Brechwald & Prinstein, 2011). The similarities are reinforced when people is grouped under the same profile, perpetuating even more the bully behavior. The victims are isolated from other classmates during time class and, subsequently, they feel highly frustrated their *relationship* need. When the students are harassed, victimized, they fall into a negative spiral of embarrassment, self-compassion and self-blame, and they deal with the conflict using passive strategies (Caurcel & Almeida, 2008). As a result, the victimized cycle is perpetuate even more and leads bullies to think that victims are not capable of controlling the situation. Consequently, the aggression is repeated and the victim is more and more isolated. Other research showed that students with more social ties are less likely to become bullying victims (Hodges, Malone, & Perry, 1997; Kendrick, Jutengren, & Stattin, 2012). Results of the present study show that the relationship need has to be reinforced in the school context, especially to prevent and/or diminish the negative effects of victimization. Previous studies have demonstrated how innovative teaching approaches based on pedagogical models like Personal and Social Responsibility or Sport Education help build relationship among students (Menéndez & Fernández-Río, 2016), because these models promote class work in small groups where the help is necessary and mandatory and the roles rotate (e.g., captain, coach, etc.). In addition, the development of responsibility includes helping. Also, Cooperative Learning is another model whose aim is to promote the development of interpersonal skills (e.g., to share, to listen, to keep to your turn. . .) that help connect socially and it matches perfectly with the Personal and Social Responsibility Model (Fernández-Río, 2014).

Regarding *competence* need, results show that *victimization* predicts positively the frustration but negatively the satisfaction of this need. This is supported, partially, by Young-Jones et al.'s study (2015) where they studied the relation between basic psychological needs and bullying inside a school context. They found that students who informed to be victims (both in the past and in the present) have lower academic motivation and significantly lower competence levels. These low academic and competence levels lead those students to be seen as clearly targets by bullies. For that reason, these victimized students develop psychological stress, which affects their academic achievement, and, as result, their perceived competence (Juvonen, Nishina, & Graham, 2000). In the other hand,

if a student has high competence, he/she is going to be more intrinsically motivated, and according to the Self-Determination Theory, is going to be more adaptive: increased self-esteem, higher social ability, etc. (Sánchez-Oliva, Viladrich, Amado, González-Ponce, & García-Calvo, 2014). In light of the results, it becomes necessary to improve all students' competence to prevent and/or to diminish the negative effects of victimization. Once again, pedagogical models as those previously presented can develop students' competence (Menéndez & Fernández-Río, 2016) helping the ones who had being victimized or preventing this to happen. Thereby, the Personal and Social Responsibility Model can develop in Secondary students the need of competence (Merino-Barrero, Valero-Valenzuela, Belando, & Fernández-Río, 2019), as well as other positive psychological consequences (e.g., motivation, *fair play*, etc.). Since the model can set responsibility levels (from respect to help each other and transference to other contexts), it could help students feel more competent and avoid victimization.

Finally, regarding the third basic psychological need, *autonomy*, the results show that *victimization* predicts positively the frustration and negatively the satisfaction of this need. The ones who cannot perceive themselves as autonomous are more likely to stand passive in a bullying situation (Schoeler et al., 2018). On the contrary, when a student perceives him or herself as autonomous, he or she usually becomes assertive facing the situation, using coping strategies, and being active in the conflict (Caurcel & Almeida, 2008), decreasing the possibility of victimization. Because of this, bullies see in less autonomous students easy targets to achieve their aims. Research has informed that the victims are usually students with poor social relations management, students with disabilities or lack in emotional defense, things that are linked with low autonomy (Avilés, 2009). This is why is so important to plan student-oriented teaching frameworks to empower students and give them the responsibility to cop and solve conflicts autonomously, facilitating the opportunity to solve bullying on their own (Hellison, 2011). Besides, autonomy frustration is related to education approaches that produces poor intrinsic motivation (Carrabba & Farmer, 2018). Again, it seems crucial to develop student's autonomy to prevent and / or diminish the negative effects of victimization. As it has been previously showed, pedagogical models as Personal and Social Responsibility develop students the basic psychological need of autonomy (Merino-Barrero et al., 2019), because it is one of the responsibility levels that conforms the structure of the model. Only if a person feels him or herself autonomous, he/she can develop coping strategies for bullying situations and not be victimized (Garaigordobil & Martínez-Valderrey, 2014). Thus, these models have to be introduced in the schools.

At last, it is worth to say that the data in the current research stayed invariant in three different curricular subjects, which reflects the strength of the findings. Moreover, two of these subjects are taught in a classroom in a 'controlled' context where the interactions among students are more restricted, while the other one is taught in an 'open' context with more interactions, not only verbal but also motor (Jovanović & Zdravković, 2018). Therefore, negative and positive links between victimization and the three basic psychological needs occur independently of the curricular context, so prevent and/or diminish the negative effects of bullying has to be done from and for the entire educative context.

Moreover, pedagogical models such as Personal and Social Responsibility or Cooperative Learning can be developed in any subject and achieve the previously mentioned benefits.

The present study has some limitations too. Firstly, despite of the wide sample, it is not fully representative of all students in Spain, neither regarding their socio-economic characteristics, nor their geographic localization. Secondly, sampling is intentional for convenience that is, a non-probabilistic. A random stratified sampling or a sample by clusters (probabilistic sample) could report more reliable results. Thirdly, the analysis is just for three of the Spanish curricular subjects.

The results and the conclusions of this research are fundamental to plan educational intervention programs to promote values and prosocial learnings in every curricular subjects (Albayrak et al., 2016) like empathy, autonomy or help. Pedagogical models such as Cooperative Learning Model (Casey & Fernández-Río, 2019), Personal and Social Responsibility Model (Hellison, 2011) or interventions based on dialogic learning could be the key, to transform schools into learning communities (Flecha, 2009). These models or a combination of them could reduce negative teenager students' behaviors like aggression and the effects of victimization, solving co-existence problems and develop a positive climate for students' personal growth.

References

- Albayrak, S., Yildiz, A., & Erol, S. (2016). Assessing the effect of school-bullying prevention programs on reducing bullying. *Children and Youth Services Review*, 63, 1–9. <http://dx.doi.org/10.1016/j.childyouth.2016.02.005>
- Avilés, J. M. (2009). Victimización percibida y bullying. Factores diferenciales entre víctimas. *Boletín de Psicología*, 95, 7–28.
- Bisquerra, R. (2012). *Metodología de la investigación educativa* (coord.). Madrid: La Muralla.
- Bondu, R., Rothmund, T., & Gollwitzer, M. (2016). Mutual long-term effects of school bullying, victimization, and justice sensitivity in adolescents. *Journal of Adolescence*, 48, 62–72. <http://dx.doi.org/10.1016/j.adolescence.2016.01.007>
- Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence*, 21, 166–179. <http://dx.doi.org/10.1111/j.1532-7795.2010.00721.x>
- Brighi, A., Ortega, R., Pyzalski, J., Scheithauer, H., Smith, P. K., Tsormpatzoudis, C., & Thompson, J. (2012). *European bullying intervention project questionnaire (EBIPQ)* (Unpublished manuscript). Bolonia: University of Bologna.
- Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming (multivariate applications)*. Mahwah, NJ: Lawrence Erlbaum.
- Byrne, B. M. (2008). Testing for multigroup equivalence of a measuring instrument: A walk through the process. *Psicothema*, 20(4), 872–882.
- Carrabba, C., & Farmer, A. (2018). The impact of project-based learning and direct instruction on the motivation and engagement of middle school students. *Language Teaching and Educational Research*, 1(2), 163–174.
- Casey, A., & Fernández-Río, J. (2019). Cooperative learning and the affective domain. *Journal of Physical Education Recreation & Dance*, 90(3), 12–17. <http://dx.doi.org/10.1080/07303084.2019.1559671>
- Caurel, M. J., & Almeida, A. (2008). La perspectiva moral de las relaciones de victimización entre iguales: Un análisis exploratorio de las atribuciones de adolescentes españoles y portugueses. *European Journal of Education and Psychology*, 1(1), 51–68. <http://dx.doi.org/10.30552/ejep.v1i1.4>
- Cepeda-Cuervo, E., Pacheco-Durán, P., García-Barco, L., & Piraquive-Peña, C. (2009). Acoso escolar a estudiantes de educación básica y media. *Revista de Salud Pública*, 10(4), 517–528.
- Cheung, G., & Rensvold, R. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modelling: A multidisciplinary Journal*, 9(2), 233–255. http://dx.doi.org/10.1207/S15328007SEM0902_5
- Cook, C. R., Williams, K., Guerra, N., Kim, T., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65–83. <http://dx.doi.org/10.1037/a0020149>
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: The University of Rochester Press.
- Fernández-Río, J. (2014). Another step in models-based practice: Hybridizing cooperative learning and teaching for personal and social responsibility. *Journal of Physical Education Recreation & Dance*, 85(7), 3–5. <http://dx.doi.org/10.1080/07303084.2014.937158>
- Fialho, N., & Bakshi, A. J. (2016). Understanding school bullying: Its nature and prevention strategies. *British Journal of Guidance & Counselling*, 44(2), 246–248. <http://dx.doi.org/10.1080/03069885.2015.1070635>
- Flecha, R. (2009). Cambio, inclusión y calidad en las comunidades de aprendizaje. *Cultura y Educación*, 21(2), 157–169.
- Forbes, M. K., Fitzpatrick, S., Magson, N. R., & Rapee, N. M. (2019). Depression, anxiety, and peer victimization: Bidirectional relationships and associated outcomes transitioning from childhood to adolescence. *Journal of Youth and Adolescence*, 48(4), 692–702. <http://dx.doi.org/10.1007/s10964-018-0922-6>
- Garaigordobil, M. (2014). *Programa de intervención para prevenir y reducir el cyberbullying*. Madrid: Pirámide.
- Garaigordobil, M., & Martínez-Valderrey, V. (2014). Efecto del Cyberprogram 2.0 sobre la reducción de la victimización y la mejora de la competencia social en la adolescencia. *Revista de Psicodidáctica*, 19(2), 289–305. <http://dx.doi.org/10.1387/RevPsicodidact.10239>
- Garaigordobil, M., & Martínez-Valderrey, V. (2015). Effects of Cyberprogram 2.0 on “face-to-face” bullying, cyberbullying, and empathy. *Psicothema*, 27(1), 45–51. <http://dx.doi.org/10.7334/psicothema2014.78>
- Graham, S. (2016). Victims of bullying in schools. *Theory Into Practice*, 55(2), 136–144.
- Harbin, S. M., Kelley, M. L., Piscitello, J., & Walker, S. J. (2019). Multidimensional bullying victimization scale: Development and validation. *Journal of School Violence*, 18(1), 146–161. <http://dx.doi.org/10.1080/15388220.2017.1423491>
- Hein, V., Koka, A., & Hagger, M. S. (2015). Relationships between perceived teachers' controlling behaviour, psychological need thwarting, anger and bullying behaviour in high-school students. *Journal of Adolescence*, 42, 103–114. <http://dx.doi.org/10.1016/j.adolescence.2015.04.003>
- Hellison, D. (2011). *Teaching responsibility through physical activity* (3rd ed.). Champaign, Illinois: Human Kinetics.
- Hodges, E. V. E., Malone, M. J., & Perry, D. G. (1997). Individual risk and social risk as interacting determinants of victimization in the peer group. *Developmental Psychology*, 33, 1032–1039. <http://dx.doi.org/10.1037/0012-1649.33.6.1032>
- Hu, L. T., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55. <http://dx.doi.org/10.1080/10705519909540118>
- Huhtiniemi, M., Sääkslahti, A., Watt, A., & Jaakkola, T. (2019). Associations among basic psychological needs, motivation and enjoyment within Finnish physical education students. *Journal of Sports Science & Medicine*, 18(2), 239–247.
- Hutzell, K. L., & Payne, A. A. (2018). The relationship between bullying victimization and school avoidance: An examination of direct associations, protective influences, and aggravating factors. *Journal of School Violence*, 17(2), 210–226. <http://dx.doi.org/10.1080/15388220.2017.1296771>
- Jöreskog, K., & Sörbom, D. (1984). *LISREL VI: Analysis of linear structural relations by maximum likelihood, instrumental variables and least squares methods*. Chicago: National Educational Resources, Inc.
- Jovanović, M., & Zdravković, D. (2018). Nonverbal communication and physical education classes in a social context. *Facta Universitatis: Series Physical Education & Sport*, 15(1), 195–206.
- Juvonen, J., Nishina, A., & Graham, S. (2000). Peer harassment, psychological adjustment, and school functioning in early adolescence. *Journal of Educational Psychology*, 92, 349–359. <http://dx.doi.org/10.1037/0022-0663.92.2.349>
- Kendrick, K., Jutengren, G., & Stattin, H. (2012). The protective role of supportive friends against bullying perpetration and victimization. *Journal of Adolescence*, 35, 1069–1080. <http://dx.doi.org/10.1016/j.adolescence.2012.02.014>
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Nueva York: Guilford Press.
- León-Moreno, C., Martínez-Ferrer, B., Músitu, G., & Moreno, D. (2019). Victimización y violencia escolar: El rol de la motivación de venganza, evitación y benevolencia en adolescentes. *Revista de Psicodidáctica*, 24(2), 88–94. <http://dx.doi.org/10.1016/j.psicod.2018.12.001>
- Longo, Y., Alcaraz-Ibáñez, M., & Sicilia, A. (2018). Evidence supporting need satisfaction and frustration as two distinguishable constructs. *Psicothema*, 30(1), 74–81. <http://dx.doi.org/10.7334/psicothema2016.367>
- Longo, Y., Gunz, A., Curtis, G. J., & Farsides, T. (2016). Measuring need satisfaction and frustration in educational and work contexts: The Need Satisfaction and Frustration Scale (NSFS). *Journal of Happiness Studies*, 17, 295–317. <http://dx.doi.org/10.1007/s10902-014-9595-3>
- Magaz, A., Chorot, P., Santed, M., Valiente, R., & Sandín, B. (2016). Evaluación del bullying como victimización: Estructura, fiabilidad y validez del Cuestionario de Acoso entre Iguales (CAI). *Revista de Psicopatología y Psicología Clínica*, 21, 77–95.
- Marsh, H. W., & Byrne, B. M. (1993). Confirmatory factor analysis of multitrait-multimethod self-concept data: Between group and within group invariance constraints. *Multivariate Behavioral Research*, 28(3), 313–349.
- Mehdipour, F., Gholamali, M., & Hejazi, E. (2016). Structural modeling on the relationship between basic psychological needs, academic engagement, and test anxiety. *Journal of Education and Learning*, 5(4), 44–52.
- Menéndez, J. I., & Fernández-Río, J. (2016). Violencia, responsabilidad, amistad y necesidades psicológicas básicas: Efectos de un programa de Educación Deportiva y Responsabilidad Personal y Social. *Revista de Psicodidáctica*, 21(2), 245–260. <http://dx.doi.org/10.1387/RevPsicodidact.15269>
- Menéndez, J. I., & Fernández-Río, J. (2017). Responsabilidad social, necesidades psicológicas básicas, motivación intrínseca y metas de amistad en educación física. *Retos*, 32, 134–139.
- Menéndez, J. I., & Fernández-Río, J. (2018). Actitudes hacia la violencia y papel importante del alumnado en el aula de educación física. *Revista Complutense de Educación*, 29(4), 1293–1308. <http://dx.doi.org/10.5209/RCED.55352>
- Merino-Barrero, J. A., Valero-Valenzuela, A., Belando, N., & Fernández-Río, J. (2019). Impact of a sustained TPSR program on students' responsibility, motivation,

- sportsmanship and intention to be physically active. *Journal of Teaching in Physical Education*, <http://dx.doi.org/10.1123/jtpe.2019-0022>
- Miranda, R., Oriol, X., Amutio, A., & Ortúzar, H. (2019). Bullying en la adolescencia y satisfacción con la vida: ¿Puede el apoyo de los adultos de la familia y la escuela mitigar este efecto? *Revista de Psicodidáctica*, 24(1), 39–45. <http://dx.doi.org/10.1016/j.psicod.2018.07.001>
- Olweus, D. (2005). A useful evaluation design and effects of the Olweus Bullying Prevention Program. *Psychology Crime and Law*, 11(4), 389–402.
- Ortega, R., del Rey, R., & Casas, J. A. (2016). Evaluar el bullying y el cyberbullying validación española del EBIP-Q y del ECIP-Q. *Psicología Evolutiva*, 22(1), 71–79. <http://dx.doi.org/10.1016/j.pse.2016.01.004>
- Sánchez-Oliva, D., Viladrich, C., Amado, D., González-Ponce, I., & García-Calvo, T. (2014). Predicción de los comportamientos positivos en educación física: Una perspectiva desde la Teoría de la Autodeterminación. *Revista de Psicodidáctica*, 19(2), 387–406. <http://dx.doi.org/10.1387/RevPsicodidact.7911>
- Schoeler, T., Duncan, L., Ploubidis, G., Cecil, C., & Pingault, J. (2018). Quasi-experimental evidence on short and long-term consequences of bullying victimization: A meta-analysis. *Psychological Bulletin*, 144(12), 1229–1246. <http://dx.doi.org/10.1037/bul0000171.supp>
- Vallerand, R. J. (2001). A hierarchical model of intrinsic and extrinsic motivation in sport and exercise. In G. C. Roberts (Ed.), *Advances in motivation in sport and exercise* (pp. 263–319). Champaign, IL: Human Kinetics.
- Van Ryzin, M., & Roseth, C. (2018). Cooperative learning in middle school: A means to improve peer relations and reduce victimization, bullying and related outcomes. *Journal of Educational Psychology*, 110(8), 1192–1201. <http://dx.doi.org/10.1037/edu0000265>
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263–280. <http://dx.doi.org/10.1037/a0032359>
- Young-Jones, A., Fursa, S., Byrket, J. S., & Sly, J. S. (2015). Bullying affects more than feelings: The long-term implications of victimization on academic motivation in higher education. *Social Psychology of Education*, 18(1), 185–200.