

Bullying according to the level of physical activity in adolescents

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BULLYING ACCORDING TO THE LEVEL OF PHYSICAL ACTIVITY IN ADOLESCENTS

KEYWORDS: Violence in school, sport, secondary education, high school, accelerometer.

ABSTRACT: In the present study we analyze the relationship between the bullying implication of students of Secondary Education (SE) and the level of physical activity measured with accelerometry. To this end, 54 students from two ESO centers aged between 12 and 18 years ($M = 14.26$, $SD = 1.34$) were evaluated through the European Bullying Intervention Project Questionnaire (EBIP-Q, 2016) to assess the involvement in bullying and, ActiGraph GT3X accelerometers, to assess the level of physical activity. The results show us that the average time invested in performing *light* Physical Activity (PA) is 1560.89 minutes in a week ($SD = 376.67$), as well as in performing *moderate* PA is 358.87 (118.38) minutes / week and 451.89 (164.33) minutes / week in *vigorous* PA. These data are analyzed taking into account that 22.2% of the sample has involvement in bullying (*victim*: 16.7%, *aggressor*: 3.7% and *victimised aggressor*: 1.9%), although there are no significant correlations between the different levels of PA and the different roles of implication. Likewise, it should be noted in the ANOVA conducted between the involvement in bullying and the different levels of PA, that the F is significantly higher than 1 in the activity levels light ($p = .029$) and moderate ($p = .020$), by what there is no equality of means. As conclusions, it should be noted that according to our sample of the study, which is physically active, it has levels of involvement of bullying lower than other studies. Although we must indicate that after the results obtained, we cannot verify that attending to the practice recommendations of PA can protect against the direct implication of bullying.

The data analyzed by Hillis, Mercy, Amobi and Kress (2016) show that one billion children between the ages of 2 and 17 have experienced violence in the last year in half the countries of the world.

In this way, we can consider that such *violence in a school environment*, defined as the use of force or power relations by schoolchildren in order to achieve a goal, dominate or impose something (Cook, Williams, Guerra, Kim, & Sadek, 2010), is a topic of interest in the scientific context.

Similarly, there is an interest and concern in society and in the educational community for bullying, as it is increasing in number of cases and the effect it generates (Romera et al., 2017). Hence the importance of knowing the risk and protection factors that may explain its existence in order to adopt, extend and maintain prevention measures based on scientific evidence (Casas, Ortega-Ruiz, & Del Rey, 2015).

Thus, we understand bullying as repeated aggressions over time and with imbalance of power that prevents the victim to defend himself (Meneseni & Salmivalli, 2017; Postigo, González, Montoya, & Ordóñez, 2013; Zych, Ortega, & Del Rey, 2015a; Zych et al., 2015b). The aggressions can be presented in three different ways, towards the victim or his belongings: physical, verbal and social (Olweus, 1993). Nevertheless, other authors group them in direct (physical and verbal) and indirect (social) (Avilés, 2006; Meneseni & Salmivalli, 2017).

Bullying implies the existence of an aggressor and a victim in addition to other roles that are described in different studies. Salmivalli, Lagerspetz, Björkqvist, Österman and Kaukiainen (1996) distinguish between *assistant* and *reinforcing assistant*,

defender and others. However, for Olweus (1993) there is another *provocative victim* role, also known as a *victimised aggressor* (according to Ortega-Ruiz, 2010) and *spectators* or *witnesses*. Terms used in the present study.

Regarding to the Spanish results found on bullying, we have to indicate that according to the source used, these vary due to the variation in time, in the sample and the instrument mainly. So that studies such as those of the Ombudsman (2007) in Secondary School indicates an implication that varies between 5 and 40% according to the type of aggression. While another study developed by *Save the Children* (2016), shows us approximately 10%, Corral-Pernia, Del Rey, Domínguez-Gálvez and Chacón-Borrego (2017) indicated 22.5%, and according to Romera et al. (2017) almost 50%.

As for the different investigations that analyze the possible relationship between PA and bullying, we find studies that indicate that reduced levels of PA are associated with victimization in bullying (Roman & Taylor, 2013; Bjereld, Daneback, Gunnarsdóttir, & Petzold, 2014; Henriksen, Rayce, Melkevik, Due, & Holstein, 2015). Along the same lines, Driessens (2015) and Merrill and Hanson (2016), indicate that the practice of PA seems to protect with less victimization in bullying, especially those who practice team sports.

PA is inversely related to sadness and suicidal tendency in adolescents, highlighting the relationship between PA and mental health in children, and potentially involving PA as a prominent choice in the response to bullying in schools (Sibold, Edwards, Murray-Close, & Hudziak, 2015).

However, we find studies that do not show the

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aforementioned correlations, such as that of Zurita, Vilches, Padiá, Pérez and Martínez (2014, p.527), who indicate that "regular practice of PA was more assiduous among males, and these were characterized by greater manifest aggressiveness and a higher rate of physical victimization".

In the same line, Chacón-Cuberos, et al. (2015) do not show significant differences in the correlation between bullying and PA, although in this case the sample is made of Primary Education, as well as no concordances between the practice of PA and behavioral, self-esteem and academic aspects (Pérez-Cortés, 2015).

In this way, we could say that there are studies that show the mediating role of sport but are not conclusive as a protection factor, just as PA shows certain correlations with victimization, but not with the rest of roles.

Thus, in view of the benefits scientifically endorsed by the practice of PA both psychologically (Varo, Martínez, & Martínez-González, 2003; Teixeira, Carraça, Markland, Silva, & Ryan, 2012), this work focuses on exploring the possible relationship of bullying with the different levels of PA and gender in adolescents of SE.

Method

Participants

Participants were 54 students from two secondary education centers in the provinces of Cádiz and Córdoba (Spain), 24 boys and 30 girls, aged between 12 and 18 ($M = 14.26$; $DT = 1.34$).

Instruments

The practice of physical activity has been recorded through ActiGraph GT3X accelerometers. This system quantifies PA parameters based on time, intensity and frequency.

In order to evaluate bullying, the European Bullying Intervention Project Questionnaire (EBIP-Q; Ortega-Ruiz, Del Rey, & Casas, 2016) was used, consisting of two scales of victimization and aggression. The internal reliability in this study was $\alpha = .71$ for the full scale.

This questionnaire has 14 items, 7 items subscale for victimization ($\alpha = .70$) and 7 for subscale aggression ($\alpha = .55$). Answers are entered on a scale of 0 to 4: 0 Never; 1 Once or twice; 2 Once or twice monthly; 3 About once a week; 4 More than once a week.

Procedure

Once we contacted with the centers and after their confirmation, we request the authorization of the parents/guardians of the children.

The Center, family and participants were informed about the purposes of the study and the instruments; procedure for filling in the questionnaires and placing accelerometers.

Once we obtained the sample, accelerometers were programmed and initialized synchronously through the Actilife 6.0 program. to be worn at the waist (above the iliac crest) for seven days (60-second epoch).

Questionnaire carried out in the presence of the interviewer.

Data Analysis

The cutoff points used to determine the variables levels of PA were proposed by Ekelund et al. (2004): < 500 counts/minutes/week for sedentary people; between 500-1999 counts for light physical activity; between 2000-2999 counts, moderate activity, and ≥ 3000 counts vigorous activity. From these data, Actilife 6.0 program calculates the weekly time of each PA intensity (minutes/week).

Regarding the EBIP-Q, following the cut-off points established by the authors (Del Rey et al., 2015) The severity of the participation in aggression and victimization has been determined following the procedure established by Smith et al. (1989) according to the frequency of participation. It has been considered as *Severe bullying* when the actions occur 1 time a week (value 3 on the scale).

Descriptive statistics are presented as a mean and standard deviation (SD) for continuous variables and in terms of percentages for categorical variables.

The relationship between PA levels and involvement in bullying and their specific roles was assessed with chi-square tests; as well as ANOVA tests comparing the different PA levels with direct scores on victimization and aggression for both forms of harassment.

We performed bivariate correlations reporting the Spearman correlation coefficient to test the level and direction of relationship between the different study variables.

All data have been analyzed with the statistical package SPSS version 24.0. (SPSS, Inc., Chicago, IL). For all tests, the significance level was set at $p < .05$.

Results

The implication in bullying was 22.2% (victim: 16.7%, aggressor: 3.7% and victimized aggressor: 1.9%); no significant differences were found in relation to sex, nor in relation to bullying involvement ($p = 0.574$).

However, after assessing the PA level (Table 2), the approximate time spent performing *light* PA is 1560.89 minutes in one week ($SD = 376.67$), as well as performing *moderate* PA 358.87 minutes / week ($SD = 118.38$) and *vigorous* PA 451.89 minutes / week ($SD = 164.33$).

We can say that the analyzed sample is physically active since it attends and even surpasses the recommendations of practice of PA established by the World Health Organization (2010).

In this way, after analyzing the possible relationship between

Table 1. Severe bullying involvement by gender (n)*.

	Female	Male	Pa
Not involved	25	17	.574
Victim	4	5	
Aggressor	1	1	
Aggressor-victim	0	1	

*pa: significance of p thrown from the chi square statistical test.

the different levels of PA with bullying, we did not find significant correlations in any of them.

However, after observing the following graphs obtained from the means of the PA different levels, according to the different roles of involvement in *severe bullying*. We find a certain tendency that the role of *aggressor* is more propitious in subjects with a higher level of *vigorous* PA; as well as the role of *victim*

there seems to be a tendency to occur in subjects with levels of *light* and *vigorous* PA.

In fact, after performing an ANOVA of different PA levels with involvement in *severe bullying*, we found that F is significantly higher than 1 in *light* ($p = .029$) and *moderate* ($p = .020$) activity levels, so there is no equality of means, confirming the impression provided by the graphics.

Table 2. Time (minutes/week) invested in each level of physical activity *

Light	1560.89 (376.67)
Moderate	358.87 (118.38)
Vigorous	451.89 (164.33)

Note: * Values expressed as mean minutes/week (SD).

Table 3. Spearman correlation between PA level and bullying.

	Light	Moderate	Vigorous
Victimization	.057	.126	.122
Aggressor	-.039	-.031	-.010

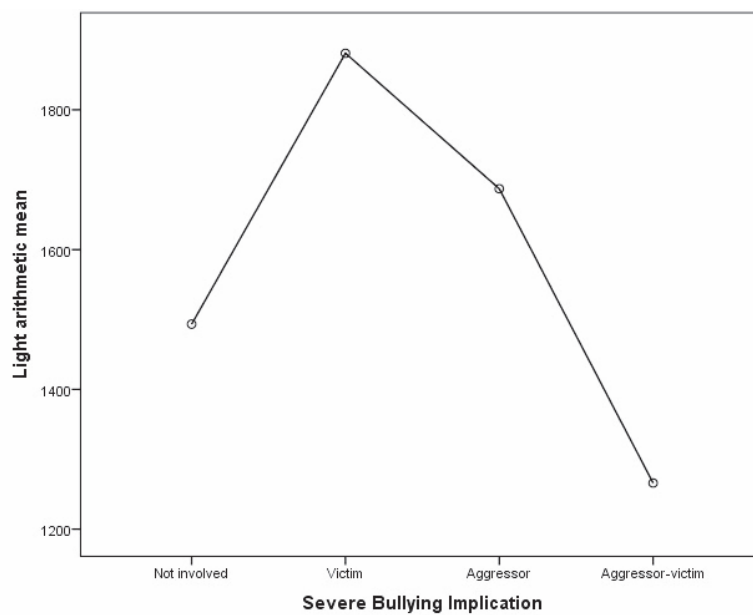


Figure 1. Average of light PA according to the roles of involvement in severe bullying.

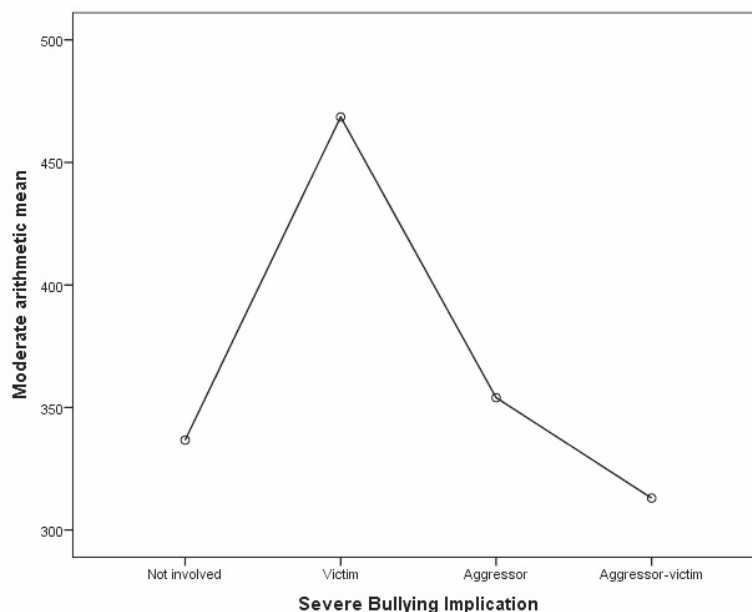


Figure 2. Average of moderate PA according to the roles of involvement in severe bullying

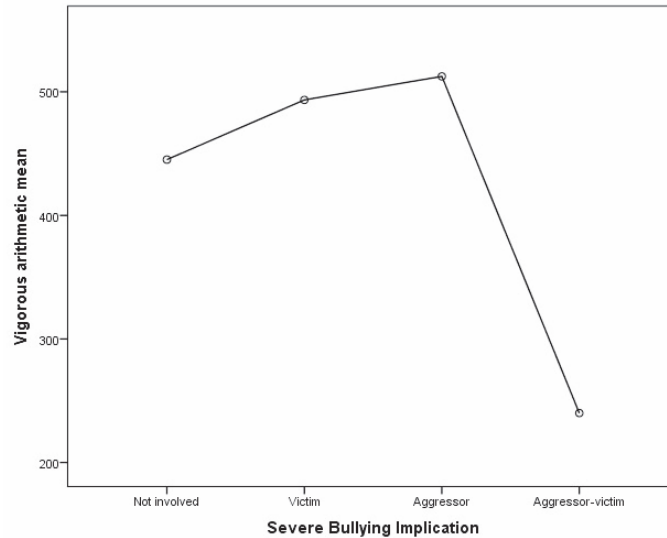


Figure 3. Average of vigorous PA according to the roles of involvement in severe bullying

Table 4. ANOVA severe bullying implication.

		Sum of quadratics	gl	Quadratic Media	F	Pα
Light	Between groups	1.232.045.111	3	410.681.704	3.266	.029
	Inside groups	6.287.918.222	50	125.758.364		
	Total	7.519.963.333	53			
Moderate	Between groups	131.090.894	3	43.696.965	3.572	.020
	Inside groups	611.657.198	50	12.233.144		
	Total	742.748.093	53			
Vigorous	Between groups	69.697.468	3	23.232.489	.853	.472
	Inside groups	1.361.531.865	50	27.230.637		
	Total	1.431.229.333	53			

Discussion

The prevalence rate of bullying is lower than other studies such as Romera et al. (2017), while the results are similar with those found in study by Corral-Pernía et al. (2017).

We did not find differences of bullying according to gender, as Martínez et al. (2017), while other studies do. Kowalski, Limber and Agatston (2010) and *Save the Children* (2016) found it is more frequent in girls in Spain and in the other countries it happens the other way.

The gender differences are very small as it is verified in the study of Corral-Pernía et al. (2017), and only appear in the behavior of the aggressor

Likewise, our results regarding involvement in bullying and gender do not coincide with those of Zurita et al. (2014), who indicate that men have a higher rate of victimization.

It's also worth noting that, based on the results obtained, we cannot confirm that addressing the practice recommendations of PA can protect against the direct involvement of bullying, as other studies (Henriksen et al., 2015; Merrill & Hanson, 2016) in which the victims of both harassment situations are less physically active. In another vein, studies such as those by Martínez et al. (2017) also do not show a relationship between the practice of PA and sporting modalities with aggressive behaviors and bullying, as well as studies by Chacón-Cuberos et al. (2015).

The adolescents in this study who are physically active, have a lower involvement in school bullying. This result could be in relation to the results of Sibold et al. (2015), and Eime, Young, Harvey, Charity, and Payne (2013), where it is shown that a longer time dedicated to PA is associated with better psychological and social health.

In conclusion, there are no gender differences in the roles that occur in situations of bullying in the sample. There are also no correlations between bullying and the different levels of PA, although there are small differences in the role of aggressor and vigorous PA practice.

As future lines of research, we consider it very interesting to include other variables that may affect the risk of bullying, such as the body weight of children and adolescents, their sexual preferences. In addition to knowing the incidence of bullying, both in the victim and the aggressor, in the hours of sleep, self-esteem and self-concept.

However, it should be noted as limitations of the present study the homogeneity of the sample, since all the students evaluated were physically active. This makes it necessary to carry out more studies with a more heterogeneous sample that allows us to analyze the variability of the studies.

The same happens with the different roles of participation in bullying according to the levels of PA. This will help us determine if PA is a risk factor or protector of bullying.

BULLYING SEGÚN EL NIVEL DE ACTIVIDAD FÍSICA EN ADOLESCENTES

PALABRAS CLAVE: Violencia escolar, deporte, educación secundaria, acelerómetro.

RESUMEN: En el presente estudio analizamos la relación existente entre la implicación en bullying de estudiantes de Educación Secundaria Obligatoria (ESO) y el nivel de actividad física medida con acelerometría. Para ello fueron evaluados 54 estudiantes de dos centros de ESO con edades comprendidas entre los 12 y los 18 años ($M=14.26$; $DT= 1.34$) mediante el European Bullying Intervention Project Questionnaire (EBIP-Q, 2016) para evaluar la implicación en bullying y, los acelerómetros ActiGraph GT3X, para evaluar el nivel de actividad física. Los resultados nos muestran que el tiempo medio invertido en realizar Actividad Física (AF) *ligera* es de 1560.89 minutos a la semana ($SD=376.67$), así como en realizar AF *moderada* es de 358.87 (118.38) minutos/semana y 451.89 (164.33) minutos/semana en AF *vigorosa*. Dichos datos son analizados atendiendo a que el 22.2% de la muestra tiene implicación en bullying (*victima*: 16.7%, *agresor*: 3.7% y *agresor victimizado*: 1.9%), aunque no existen correlaciones significativas entre los diferentes niveles de AF y los diferentes roles de implicación. Asimismo, cabe indicar en el ANOVA realizado entre la implicación en bullying y los diferentes niveles de AF, que la F es significativamente superior a 1 en los niveles de actividad ligera ($p = .029$) y moderada ($p = .020$), por lo que no existe igualdad de medias. Como conclusiones cabe indicar que atendiendo a la muestra del estudio, que es físicamente activa, posee niveles de implicación de bullying inferiores a otros estudios, aunque debemos indicar que tras los resultados obtenidos no podemos constatar que atender a las recomendaciones de práctica de AF pueda proteger frente a la implicación directa del bullying.

BULLYING BASEADO NO NÍVEL DE ATIVIDADE FÍSICA EM ADOLESCENTES

PALAVRAS-CHAVE: Intimidação, esporte, educação Secundária, acelerômetro.

RESUMO: No presente estudo analisamos a relação entre a implicação do bullying de estudantes do Ensino Secundário Obrigatório (ESO) e o nível de atividade física medido com acelerometria. Para o efeito, 54 estudantes de dois centros ESO com idades entre os 12 e os 18 anos ($M = 14,26$, $DP = 1,34$) foram avaliados através do Questionário Europeu do Projecto de Intervenção ao Bullying (EBIP-Q, 2016) para avaliar o envolvimento no bullying e, Acelerómetros ActiGraph GT3X, para avaliar o nível de atividade física. Os resultados mostram que o tempo médio gasto em fazer Actividad Física (PA) *suave* é 1560.89 minutos por semana ($SD = 376,67$), bem como executar PA *moderada* é 358,87 (118,38) minutos / semana e 451,89 (164,33) minutos / semana em PA *vigorosa*. Estes dados são analisados em resposta a 22,2% da amostra tem envolvimento no intimidação (*vítima*: 16,7%, *agressor*: 3,7% e *agressor vitimado*: 1,9%), embora não há correlações significativas entre os diferentes níveis de PA e funções diferentes implicação. Também vale a pena mencionar na ANOVA realizada entre o envolvimento em intimidação e diferentes níveis de PA, o F é significativamente maior do que 1 nos níveis de luz de actividade ($p = 0,029$) e moderada ($p = 0,020$), por o que não há igualdade de meios. Em conclusão, deve-se notar que, em resposta à nossa amostra do estudo, que é físicamente ativo, tem níveis de envolvimento com o bullying menor do que os estudos, Embora devemos notar que na sequência dos resultados não pode ser encontrada para atender as recomendações da prática PA pode proteger contra o envolvimento direto de bullying.

References

- Avilés J. M. (2006). *Bullying: el maltrato entre iguales. Agresores, víctimas y testigos en la escuela (Bullying: the mistreatment between equals. Aggressors, victims and witnesses at school)*. Salamanca: Amarú Ediciones.
- Bjereid, Y., Daneback, K., Gunnarsdóttir, H., and Petzold, M. (2014). Mental Health Problems and Social Resource Factors Among Bullied Children in the Nordic Countries: A Population Based Cross-sectional Study. *Child Psychiatry & Human Development*, 46, 281-288. <https://psycnet.apa.org/doi/10.1007/s10578-014-0468-0>
- Casas, J. A., Ortega-Ruiz, R., & Del Rey, R. (2015). Bullying: The impact of teacher management and trait emotional intelligence. *British Journal of Educational Psychology*, 85(3), 407-423. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/bjep.12082>
- Chacón-Cuberos, R., Martínez-Martínez, A., Castro-Sánchez, M., Espejo-Garcés, T., Valdivia-Moral, P. A., and Zurita-Ortega, F. (2015). Relationship between bullying, gender and physical activity: study in schoolchildren from the province of Granada. *Trances*, 7(6), 791-809
- Cook, C., Williams, K., Guerra, N., Kim, T., and Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65-83. <https://psycnet.apa.org/doi/10.1037/a0020149>
- Corral-Pernía, J.A., Del Rey, R., Domínguez-Gálvez, J.M., and Chacón-Borrego, F. (2017, November). *School bullying according to the level of physical activity determined by the PAQ-C*. Poster presented in the I International Congress of Psychology, Health and Education, Oviedo, España.
- Ombudsman. (2007). *School Violence: Equal Maltreatment in Secondary Education 1999-2006*. 2007. Madrid, Spain. Retrieved July 9, 2017 from <https://www.defensordelpueblo.es/wp-content/uploads/2015/05/2007-01-Violencia-escolar-el-maltrato-entre-iguales-en-la-Educaci%C3%B3n-Secundaria-Obligatoria-1999-2006.pdf>
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumholz, A., Scheithauer, H., Smith, P., Thompson, F., Barkoukis, V., Tsoarbatzoudis, H., Brighi, A., Guarini, A., Pyzalski, J., and Plichta, P. (2015). Structural validation and cross-sectional robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behaviour*, 50, 141-147. <http://dx.doi.org/10.1016/j.chb.2015.03.065>
- Driessens, C. M.E.F. (2015). Extracurricular activity participation moderates impact of family and school factors on adolescents' disruptive behavioural problems. *BMC Public Health* 15. <https://doi.org/10.1186/s12889-015-2464-0>
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., and Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*. 10(98), 1-21. <https://doi.org/10.1186/1479-5868-10-98>

- Ekelund, U., Sardinha, L.B., Anderssen, S., Harro, M., Franks, P.W., Brage, S., Cooper, A., Andersen, L.B., Riddoch, C., and Froberg, K. (2004). Associations between objectively assessed physical activity and indicators of body fatness in 9- to 10-y-old European children: a population-based study from 4 distinct regions in Europe (the European Youth Heart Study). *The American Journal of Clinical Nutrition*, 80(3), 584-590. <https://doi.org/10.1093/ajcn/80.3.584>
- Henriksen, P. W., Rayce, S. B., Melkevik, O., Due, P., and Holstein, B. E. (2015). Social background, bullying, and physical inactivity: National study of 11- to 15-year-olds. *Scandinavian Journal of Medicine & Science in Sports* 26, 1249-1255. <https://doi.org/10.1111/sms.12574>
- Hillis, S., Mercy, J., Amobi, A., and Kress, H. (2016). Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. *Pediatrics*, 137(3):e20154079
- Kowalski, R., Limber, S., and Agatston, P. (2010). *Cyber Bullying: el acoso escolar en la era digital (Cyber Bullying: bullying in the digital age)*. Bilbao: Desclee de Brouwer.
- Martínez, A., Ruiz-Rico, G., Zurita, F., Chacón, R., Castro, M., and Cachón, J. (2017). Physical activity and aggressive behavior in adolescents in residential care. *Suma Psicológica*, 24(2), 135-141. <http://dx.doi.org/10.1016/j.sumpsi.2017.02.002>
- Meneseni, E. and Salmivalli, C. (2017). Bullying in schools: the state of knowledge and effective interventions. *Psychology, Health & Medicine*, 22(1), 240-253. <https://doi.org/10.1080/13548506.2017.1279740>
- Merrill, R. M. and Hanson, C. L. (2016). Risk and protective factors associated with being bullied on school property compared with cyberbullied. *BMC Public Health*, 16. <https://doi.org/10.1186/s12889-016-2833-3>
- Olweus, D. (1993). *Conductas de acoso y amenaza entre escolares (Harassment and threat behavior among schoolchildren)*. Madrid: Ediciones Morata.
- Ortega-Ruiz, R. (Coord.) (2010). *Agresividad injustificada, bullying y violencia escolar (Unjustified aggression, bullying and school violence)*. Madrid: Alianza Editorial.
- Ortega-Ruiz, R., Del Rey, R., and Casas, J. A. (2016). Evaluar el bullying y el cyberbullying. validación española del EBIP-Q y del ECIP-Q (Evaluate bullying and cyberbullying. validation of EBIP-Q and ECIP-Q). *Psicología Educativa*, 22, 71-79. <https://doi.org/10.1016/j.pse.2016.01.004>
- Pérez-Cortés, A.J. (2015). *Influence of physical activity on violent behavior in adolescents of public schools in Granada*. (Doctoral Thesis). University of Granada. Granada. Retrieved June 10, 2016 from <https://hera.ugr.es/tesisugr/25681539.pdf>
- Postigo, S., González, R., Montoya, I., and Ordóñez, A. (2013). Theoretical proposals in bullying research: a review. *Anales de Psicología*, 29(2), 413-425. <https://doi.org/10.6018/analesps.29.2.148251>
- Roman, C. G., and Taylor, C. J. (2013). A multilevel assessment of school climate, bullying victimization, and physical activity. *Journal of School Health*, 83, 400-407. <https://doi.org/10.1111/josh.12043>
- Romera, E., Ortega, R., Del Rey, R., Casas, J.A., Viejo, C., Gómez, O., Córdoba, F., Zych, I., García, C.M., and Luque, R. (2017). *Bullying, cyberbullying y dating violence. Estudio de la gestión de la vida social en estudiantes de Primaria y Secundaria de Andalucía (Bullying, cyberbullying and dating violence. Study of the management of the social life in primary and secondary students of Andalusia)*. Sevilla: Centro de Estudios Andaluces.
- Salmivalli, C., Lagerspetz, K., Björkqvist, K., Österman, K. and Kaukiainen, A. (1996). Bullying as a Group Process: Participant Roles and Their Relations to Social Status Within the Group. *Aggressive Behavior*, 22, 1-15.
- Save the Children (2016). *I do not play that. Bullying and cyberbullying in childhood*. Retrieved March 7, 2017 from https://www.savethechildren.es/sites/default/files/imce/docs/yo_a_eso_no_juego.pdf
- Sibold, J., Edwards, E., Murray-Close, D., and Hudziak, J.J. (2015). Physical activity, sadness, and suicidality in bullied US adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 54(10), 808-815. <https://doi.org/10.1016/j.jaac.2015.06.019>
- Smith, P.K. (1989). *The Silent Nightmare: Bullying and Victimization in School Peer Groups*. Paper presented in the Annual Congress British Psychological Society. Londres.
- Teixeira, P., Carraça, E., Markland, D., Silva, M., and Ryan, R. (2012). Exercise, physical activity, and self-determination theory: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 9-78. <https://doi.org/10.1186/1479-5868-9-78>
- Varo, J.J., Martínez, J.A., and Martínez-González, M.A. (2003). Benefits of physical activity and risks of sedentary lifestyle. *Medicina Clínica*, 121, 665-72. [https://doi.org/10.1016/S0025-7753\(03\)74054-8](https://doi.org/10.1016/S0025-7753(03)74054-8)
- Zurita, F., Vilches, J. M., Padial, R., Pérez, A. J., and Martínez, A. (2014). Conductas agresivas y de Bullying desde la perspectiva de actividad física, lugar de residencia y género en adolescentes de Granada (Aggressive and Bullying behaviors from the perspective of physical activity, place of residence and gender in adolescents from Granada). *Revista Complutense de Educación*, 26(3), 527-542. http://dx.doi.org/10.5209/rev_RCED.2015.v26.n3.43996
- Zych, I., Ortega-Ruiz, R., and Del Rey, R. (2015a). Scientific research on bullying and cyberbullying: where have we been and where are we going. *Aggression and Violent Behavior*, 24, 188-198. <https://psycnet.apa.org/doi/10.1016/j.avb.2015.05.015>
- Zych, I., Ortega-Ruiz, R., and Del Rey, R. (2015b). Systematic review of theoretical studies on bullying and cyberbullying: facts, knowledge, prevention and intervention. *Aggression and Violent Behavior*, 23, 1-21.
- World Health Organization. (2010). *World recommendations on physical activity for health*. Ginebra: WHO.