TRAUMA, VIOLENCE, & ABUSE
1-10
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1524838021991296
journals.sagepub.com/home/tva
SAGE

Emotional Intelligence and Aggressive Behaviors in Adolescents: A Systematic Review and Meta-Analysis

Alberto Vega[1], Rosario Cabello[1], Alberto Megías-Robles[2], Raquel Gómez-Leal[2], and Pablo Fernández-Berrocal[2]

Abstract

Adolescent aggression is a global public health with long-lasting and costly emotional, social, and economic consequences, and it is of vital importance to identify those variables that can reduce these behaviors in this population. Therefore, there is a need to establish the protective factors of aggressive behavior in adolescence. While some research has demonstrated the relationship between emotional intelligence (EI) and various aggressive responses in adolescence, indicating that EI—or the ability to perceive, use, understand, and regulate emotions—could be considered a protective factor for the development of aggressive behavior in adolescence, the strength of this effect is not clear. The aim of the present study was to conduct a systematic review of the literature concerning the relationship between aggressive behavior and EI in adolescents and provide a reliable estimate of the relationship between both constructs through a meta-analysis. For this purpose, we searched for relevant articles in English and Spanish in Medline, PsycINFO, and Scopus, obtaining 17 selectable articles based on the search terms used in research in the adolescent population. These studies provide scientific evidence of the relationship between the level of EI assessed from the three theoretical models of EI (performance-based ability model, self-report ability model, and self-report mixed model) and various aggressive responses, showing that adolescents with higher levels of EI show less aggressive behavior. Implications for interventions and guidelines for future research are discussed.

Keywords

emotional intelligence, aggressive behavior, adolescent, systematic review, meta-analysis

Although research suggests that the level of emotional intelligence (EI) could be related to aggressive behaviors shown in the adolescent population, the general outcomes of studies that have analyzed the link between EI and the magnitude of aggressive behavior remain unclear. Therefore, this article focuses on investigating this issue through a systematic review and meta-analysis in order to determine the potential relationship between EI and aggressive behavior in adolescents. This research could be particularly relevant for identifying ways of introducing EI within intervention programs aimed at reducing aggressive behaviors in the adolescent population.

Human aggression is understood as any behavior carried out with the intention of causing immediate harm to another individual in a situation where the aggressor must believe that the behavior will harm the target individual, and the target individual is motivated to avoid the behavior (Anderson & Bushman, 2002). In this sense, it is important to highlight that aggressiveness among the adolescent population is one of the most significant problems facing society today (Bonell et al., 2015; World Health Organization [WHO], 2020) because aggressive behaviors have extremely negative consequences for both the aggressor and the victim in the short and long terms. Nearly 200,000 young people aged 10–29 are killed each year and several million suffer various types of trauma requiring urgent medical treatment (WHO, 2020). A report issued by UNESCO (2018)**[AQ1]** estimates that one of every three students between the ages of 9 and 15 was involved in a fight with another student and 32.4% had been beaten up in the 12 months prior to this research, thus indicating the worldwide prevalence of this problem. In addition, adolescent aggressive behavior is a predictor of serious criminal activity and violence in adulthood, and it is linked to the main mental health problems that occur in

[1] Department of Developmental and Educational Psychology, Faculty of Education Science, University of Granada, Spain
[2] Department of Basic Psychology, Faculty of Psychology, University of Málaga, Spain

Corresponding Author:
Rosario Cabello, Department of Developmental and Educational Psychology, Faculty of Education Science, University of Granada, Room 156, Cartuja University Campus, 18071 Granada, Spain.
Email: rcabello@ugr.es

the adolescent population (Fung, 2019). Further, aggressive behavior among adolescents is highly prevalent, reaching even more alarming levels in the school environment (Sastre et al., 2016).

Due to the considerable problem of aggressive behavior among adolescents, multiple research have been designed to help clarify which negative consequences may be associated with these behaviors (Breman et al., 2018; Sitnik-Warchulska & Izydorczyk, 2019). However, although several studies have been conducted, those focusing on both protective and preventive factors of aggression among adolescents are more limited and recent. Some of these protective factors are, for example, low impulsivity (Lanciano et al., 2018; Pérez Fuentes et al., 2016), high empathy (Estévez et al., 2019; Graf et al., 2019; Zych et al., 2019), adequate cognitive control (Gutiérrez-Cobo et al., 2017), and adequate morality (Böhm et al., 2018; Mazzone et al., 2019; Romera et al., 2019).

Another protective factor that has emerged in recent research is that of EI, which can act as a buffer for aggressive behavior among adolescents, allowing both victims and aggressors to be involved in fewer aggressive behaviors. EI has been described as *the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth* (Mayer & Salovey, 1997, p. 10). In recent decades, various theoretical models and instruments have been developed, of which the most widely applied models are mixed models and the ability model (Mayer et al., 2016; Mayer et al., 2008). Nonetheless, Joseph and Newman (2010) have proposed a new classification, dividing EI into three perspectives according to the type of instrument used to measure the construct: *performance-based ability EI*, *self-report ability EI*, and *self-report mixed EI.* The performance-based ability model evaluates EI through performance tests in which participants have to solve problems with correct and incorrect answers and considers EI to be a form of intelligence or mental ability based on emotional skills (Mayer et al., 2012). The Mayer–Salovey–Caruso EI Test (MSCEIT; Mayer et al., 2002) is the most important EI performance test and is based on the ability EI model (Mayer & Salovey, 1997). The self-report ability model evaluates EI through self-assessment tests and is based on the ability EI model. The most widely used instrument for measuring this construct using this model is the Trait Meta-Mood Scale (Salovey et al., 1995). The self-report mixed model also uses tests focused on the perception of oneself but considers EI within a broader conceptual framework, including empathy, motivation, persistence, optimism, and social skills, and it overlaps extensively with personality traits, cognitive control, and/or measures of emotional/psychological well-being (Mayer et al., 2008). One of the most representative mixed self-report scales is the Bar-On Emotional Quotient Inventory (Bar-On, 2004). Both self-report scales evaluate the subjective perception that the participants have about their own EI, and therefore for these scales, there are no correct or incorrect answers.

Some authors indicate that an adequate level of EI can act as a protective factor against aggressive behaviors (García-Sancho et al., 2014). In particular, studies that link EI with this behavior have found that adolescents with high EI tend to have higher levels of psychosocial adjustment than those with low EI (Inglés et al., 2015; Sanchez-Ruiz & Baaklini, 2018). Along the same lines, other research has shown that the ability to perceive, use, understand, and regulate emotions in one's self and others is associated with a decrease in any type of aggressive behavior, such as physical and verbal aggression (García-Sancho et al., 2017), aggressive behavior in relationships (Fernández-González et al., 2018), or suicide risk (Quintana-Orts et al., 2019). Similarly, some research has also analyzed whether EI and different types of aggressive behaviors are affected by other variables such as gender (Baroncelli & Ciucci, 2014; Peachey et al., 2017) or parental educational style (Batool & Bond, 2015; Schwartz et al., 2006).

The individual and social impact of adolescent aggressive behaviors has led to the development of interventions aimed at reducing these behaviors and promoting good psychosocial functioning. Therefore, a growing number of initiatives have been designed to prevent aggressive behaviors in educational settings (Castillo-Eito et al., 2020; WHO, 2020). However, little is known about the factors that must be included to enhance the effectiveness of interventions for reducing aggressive behavior. In this regard, EI is a potentially important variable to consider when developing these interventions (Castillo-Gualda et al., 2018; Durlak et al., 2011; Ruiz-Aranda et al., 2013). However, research focused on understanding the strength of the relationship between these two variables in the adolescence population is scarce, making it difficult to form a broader picture of the real benefits of developing intervention programs focused on the development of emotional skills to serve as a buffer against aggressive behavior among adolescent.

Therefore, the objective of this study was to conduct a systematic review of the existing research literature, along with a meta-analysis for analyzing the strength of the relationship between these variables. To this end, both cross-sectional and longitudinal studies were analyzed, including research related to the various models of EI (Joseph & Newman, 2010) and with different types of aggressive behavior (Anderson & Bushman, 2002). To our knowledge, this is the first systematic review and meta-analysis focusing on the relationship between the level of EI and aggressive behaviors in the adolescent population.

Method[AQ2]

The search strategy and meta-analysis were conducted according to Cochrane guidelines (Higgins, 2011).

Information Sources and Search

We conducted a systematic and careful search of the literature to identify articles relating EI and aggression up to March 2019, using Medline, PsycINFO, and the Scopus database. The search was focused on articles published in English or Spanish

in scientific journals, independently of the year of publication. Articles were labeled when they included the term "emotional intelligence" as a key word or in the title or abstract in conjunction with one or more of the following additional terms: "aggression," "violence," "antisocial behaviour," "antisocial behaviour," "aggressiveness," "aggressive behaviour," "behaviour problem," and "bullying." In addition, in order to ensure that no studies were overlooked, we conducted a hand search on the reference lists of the identified articles.

Eligibility Criteria

The main priority of this review was to locate and select existing empirical studies concerning the relationship between the level of EI and aggressive behaviors in the adolescent population. These studies were required to assess EI based on one of the three theoretical models (Joseph & Newman, 2010), even if it only assessed a particular emotional competence within these models. Due to the great plurality of terms related to "aggressive behaviors," including aggression, violence, and bullying, and given the great diversity of empirical approaches to the analysis of aggression, we decided to include only those studies that analyzed aggression as defined by Anderson and Bushman (2002). We gathered only the works in which EI was related to an immediate intention to cause harm to another person regardless of the type of harm, excluding research that did not focus on intentional aggressions such as Machiavellianism, which measures an individual's willingness to engage in manipulative behavior to promote their own interests (Christie & Geis, 1970) but not on the obligation to cause harm to others. Therefore, we adopted the following exclusion criteria for this work: (a) research not published in peer-reviewed scientific journals (we excluded unpublished research, conference presentations, theses, and dissertations to be more uniform with respect to the quality of the research); (b) theoretical research, systematic reviews, and meta-analyses; (c) publications in languages other than English or Spanish (which were the languages spoken by the authors); (d) studies carried out outside the age range established for adolescents from 10 to 23 years (due to the widespread postponement of adult roles, the definition of the age span of adolescence has become too restrictive), thus the ages between 10 and 24 years fit better with the current definition of adolescent development (Sawyer et al., 2018); and (e) those that did not evaluate EI from a theoretical reference model.

Study Selection

The selection of studies was independently carried out by two researchers (XXX and XXX)[AQ3] who were experts in the field. They took into account the inclusion and exclusion criteria and applied the first filter in relation to the title and the abstract. Any discrepancies were resolved through discussion with two other authors (XX and XX). In those publications in which the title or summary did not provide sufficient data, the complete article was reviewed and in cases of doubt, a third researcher with expertise in the field decided whether or not it should be included.

In each of the articles, the two reviewers searched for data referring to the year of publication, authors, country or region in which the research was carried out, age and gender of the participants, context in which the research was carried out, sampling method, EI measuring instrument used, theoretical model on which they focused, type of aggressive behaviors and instrument on which they are based, and statistical data on the strength and direction of the correlation between the studied variables. The process of selecting studies was carried out according to the guidelines provided by PRISMA and is summarized in a flowchart (Liberati et al., 2009) presented in Figure 1.

Statistical and Bias Analysis

The Metafor package implemented in R software Version 3.6 (Viechtbauer, 2010) was used to conduct the meta-analysis. Correlation coefficients (Pearson's r) of the relationship between total EI scores and aggressive behavior were extracted from the articles that finally met the inclusion criteria as a measure of effect size. For those articles that did not provide a total score of EI or aggressive behavior (i.e. only provided scores for the individual dimensions), we averaged the effect sizes of the dimensions in order to obtain an approximate global score. In the investigations that presented longitudinal experimental or quasi-experimental studies, only the effect sizes of the initial evaluation were included. Finally, in one of the articles, effect sizes were entered separately according to gender because this study did not provide an analysis of the total sample.

The heterogeneity of the correlations of the selected studies was evaluated using Cochran's Q statistic and the I2 statistic (Higgins & Thompson, 2002). Publication bias, that is, the tendency to publish statistically significant rather than nonsignificant results, was assessed using the Egger's test and Rosenthal's Fail-Safe N test (Egger et al., 1997; Rosenthal, 1991).

Results

Search Result

Initially, we obtained 777 relevant studies from systematic searches among all the databases used, and the resulting number of publications found by each database was as follows: 172 in Medline, 316 in PsycINFO, and 289 in Scopus. Once duplicates were eliminated, 326 potentially eligible studies were obtained. Subsequently, eligible papers were filtered using the inclusion and exclusion criteria, leaving a total of 17 articles (Figure 1). The studies excluded in this last step were eliminated because they did not address aggressive behavior as defined by Anderson and Bushman (2002) or because they did not study the direct relationship between this behavior and EI.

Characteristics of the Included Studies

The 17 articles included in this review and meta-analysis were published between 2003 and 2019. Of these, three are

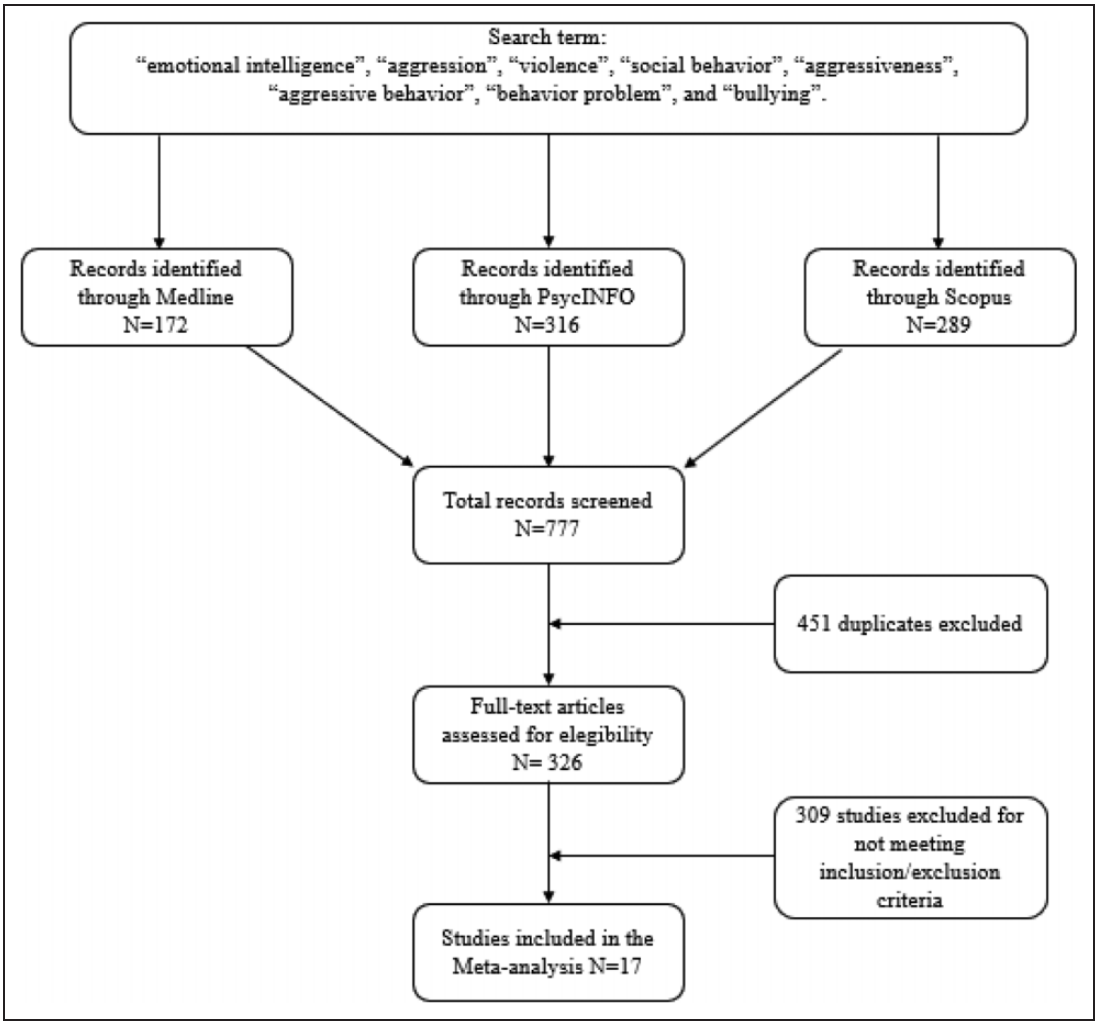

Figure 1. Flowchart showing the search process.

longitudinal and the remainder are cross-sectional. Eight of the studies were conducted in Europe, four in Australia, two in the Americas, two in Asia, and one in Africa, and all studies were conducted in school settings. The complete sample collected from all the included studies comprises 4,544 participants, of whom 2,359 were women (52%) and 2,185 were men (48%), with an average age of 13.75 years. Of the 17 articles, only one focused on the performance-based ability model (5.9%), eight on the self-report ability model (57.05%), and eight on the self-report mixed model (47.05%). Various instruments were used for the assessment of aggressive behaviors, which provided data on physical or verbal aggression (Cleveland, 2014), physical and sexual abuse (Fernández-González et al., 2018), and bullying (Peachey et al., 2017). All articles showed a negative relationship between the EI level and aggressive behaviors. The main characteristics of each study are summarized in Table 1.

Meta-Analysis Result

Given the presence of heterogeneity between studies (Cochran's Q heterogeneity test: $Q = 83.45$, $p < .0001$; I2 statistic $= 75.98\%$), a random effects model was used to calculate the pooled correlation coefficient (95% confidence interval [CI]). The meta-analysis revealed a significant negative correlation between aggressive behavior and EI (combined $r = -.20$; 95% CI [−0.26, −0.15]; $p < .0001$). Higher EI was related to a reduction in the aggressive behavior scores. Figure 2 presents a forest plot displaying effect sizes and 95% CI from each study examined in the meta-analysis.

With respect to the presence of possible publication bias in the included studies, Egger's test did not reveal evidence of a significant bias ($p = .37$) and Rosenberg's Fail-Safe N indicated that 982 missing studies with an effect size of zero would be needed to reduce the p value to a nonsignificant level (above .05). Therefore, there is no publication bias in this meta-analysis.

Discussion

Aggressive behaviors in the adolescent population constitute a global public health problem with long-lasting and costly emotional, social, and economic consequences (WHO, 2020). Thus, the number of investigations concerned with this issue

Table 1. Characteristics and Correlation Coefficient of the Studies Included in the Meta-Analysis.

Study Name	Sample Size	Age of the Sample (Years)	Emotional Intelligence Instrument	Type of Aggression	Correlation Coefficient (*r*)
Baroncelli and Ciucci (2014)	529 (247 boys and 282 girls)	10–15	EIS	Bullying	Females: −.10 Males: −.13
Cleveland (2014)	215 girls	20	TEIQue-ASF	Physical and verbal	−.37
Downey et al. (2010)	145 (60 boys and 85 girls)	11–13	SUEIT	Aggressive behavior	−.20
Fernández-González et al. (2018)	542 (259 boys y and 283 girls)	15–17	TMMS	Physical and sexual abuse	−.04
García-Sancho et al. (2017)	151 (75 boys and 76 girls)	13–17	TIEFBA	Physical and verbal	Study 1: −.17 Study 2: −.20
Kokkinos and Kipritsi (2012)	206 (111 boys and 95 girls)	10–13	TEIQue-ASF	Bullying	−.18
Kwok et al. (2015)	527 (250 boys and 277 girls)	13–17	C-EIS-R	Physical	−.07
Liau et al. (2003)[AQ4]	203 (106 boys and 97 girls)	15	EIS	Externalization of problematic behavior	−.31
Lomas et al. (2012)[AQ5]	68 (31 boys and 37 girls)	12–16	SUEIT	Bullying	−.10
Mavroveli and Sánchez-Ruiz (2011)	560 (274 boys and 286 girls)	7–12	TEIQue-CF	Bullying	−.22
Oluyinka (2009)[AQ6]	215 (106 boys and 109 girls)	16–22	EIS	Bullying	−.48
Peachey et al. (2017)	235 (115 boys and 120 girls)	9–12	TEIQue-CSF	Bullying	Females: −.26 Males: −.36
Pérez-Fuentes et al. (2019)[AQ7]	317 (161 boys and 156 girls)	13–18	EQ-I-M20	Physical	−.11
Petrides et al. (2006)[AQ8]	160 (83 boys and 77 girls)	11	TEIQue-ASF	Physical and verbal	−.15
Santesso et al. (2006)	40 (19 boys and 21 girls)	10	EQ-i: YV-O	Externalization of problems	−.43
Schoeps et al. (2018)	148 (64 boys and 84 girls)	12–15	ESCQ	Cyberbullying	−.22
Schokman et al. (2014)	283 (224 boys and 59 girls)	11–18	Adolescent SUEIT	Bullying	−.10

Note. EQ-i = Bar-On Emotional Quotient Inventory; TMMS = Trait Meta-Mood Scale; TIEFBA = Botín Foundation's Emotional Intelligence Test for Adolescents.[AQ9]

is increasing worldwide, with many of these recent investigations showing us how certain protective factors are related to aggressive behaviors among adolescents (Cleveland, 2014; García-Sancho et al., 2017; Kwok et al., 2015).

One of the protective factors for the development of aggressive behaviors appears to be the level of EI shown by adolescents, since high EI scores have been associated with lower levels of aggressive behaviors (García-Sancho et al., 2014). Specifically, the systematic review conducted by Garcia-Sancho et al. (2014) has shown how people with higher scores on EI show lower levels of aggressive behaviors in general population. However, since this systematic review, there has been a 59% increase in studies linking EI to aggressive behaviors in adolescents. Moreover, the lack of previous meta-analyses on this subject prevents us from knowing the strength of the relationship between the level of EI and aggressive behaviors in the adolescent population. Therefore, the objective of this study was to carry out a systematic review of all the studies published to date that are concerned with the link between EI and aggressive behavior in the adolescent population and to also conduct a meta-analysis of these studies to analyze the strength of the relationship between these variables.

After conducting the systematic searches and applying the inclusion and exclusion criteria, 17 studies were selected for this systematic review and meta-analysis, providing a total sample of 4,544 adolescents. Of these, three are longitudinal and the remainder are cross-sectional. The analysis of all these studies, and their results regarding the correlation between EI and aggressive behavior, indicates that all of them show a negative relationship between EI and aggressive behavior among adolescents. Adolescents who obtain higher scores on EI show lower levels of aggressive behavior. In terms of the meta-analysis, the results revealed a significant negative correlation between EI and aggressive behaviors in the adolescent population ($r = -.20$, $p = .0001$), confirming, at a statistical level, both the direction and strength of the relationship between aggressive behavior and EI in adolescents.

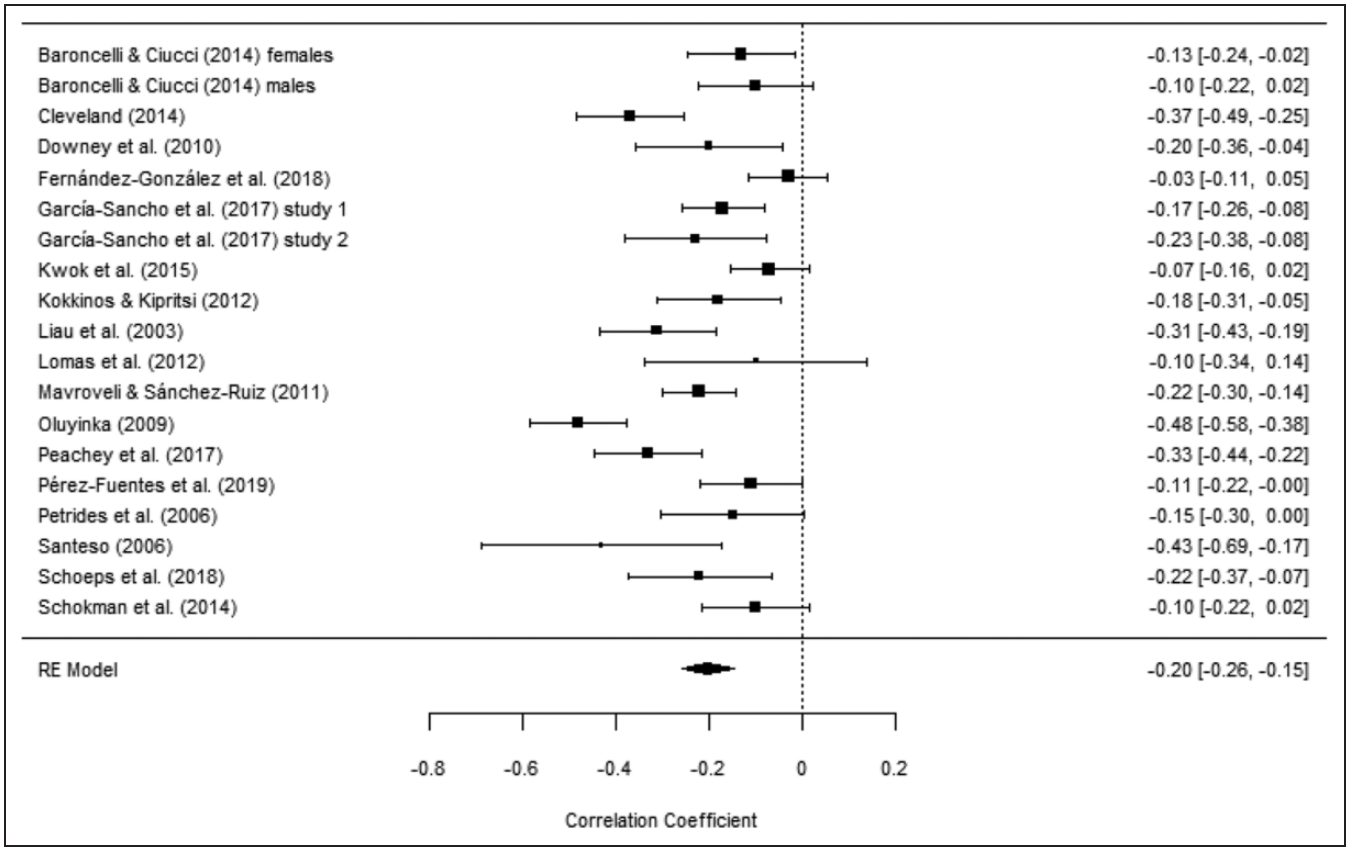

Figure 2. Forest plot showing the variation (and 95% confidence intervals) among the studies included in the meta-analysis. Box sizes indicate the weight of each study in the meta-analysis.

In the studies included in this review and meta-analysis, the level of EI was measured in various ways but always within a theoretical model of EI included in the classification provided by Joseph & Newman (2010). Of the 17 articles included, only one of these focuses on the performance-based ability model, eight focused on the self-report ability model, and the remaining eight focused on the self-report mixed model. In any case, regardless of the EI model employed, the relationship between the variables remains consistent. Nevertheless, the evaluation of EI in the vast majority of these studies has been conducted through self-reports (93.75%), either from the self-report ability model or the self-report mixed model due to the fact that until a few years ago, there were no validated performance instruments to measure EI levels in adolescents. The use of assessment instruments with a nonself-reporting approach could provide us with a more complete picture of the phenomenon being analyzed here. In this sense, although a study among those included in this systematic review (García-Sancho et al., 2017) evaluated EI with a performance measure and the result is in the same direction as those of studies that used self-report measures to evaluate EI, future work should focus on evaluating EI with performance measures such as the Botín Foundation's Emotional Intelligence Test for Adolescents (Fernández-Berrocal et al., 2015[AQ10]; Fernández-Berrocal et al., 2018) and the MSCEIT–Youth Version (Mayer et al., 2005) to confirm if the same pattern of results can be found with a variety of aggressive behaviors.

Aggressive behaviors were evaluated through 12 different instruments that assess physical aggression; psychological, verbal, and sexual abuse; externalization of problems; and bullying. These instruments are considered to generally assess aggressive behavior. Although works focused on psychological and sexual abuse are included (Fernández-González et al., 2018), the most common aggressive behaviors among the studies included in this systematic review were physical and verbal aggressions (Cleveland, 2014; García-Sancho et al., 2017) and traditional bullying (Peachey et al., 2017; Schokman et al., 2014). It should be noted that, regardless of the type of aggressive behavior and the type of instrument used for its assessment, the outcomes of all of the research studies are broadly similar, indicating that those adolescents who score higher on EI show lower levels of aggression. Nevertheless, many other aggressive behaviors among adolescents have not yet been investigated in relation to EI, and future research should focus on the analysis of other important and increasingly frequent types of aggression among adolescents such as relationship aggression (Fernández-González et al., 2018), self-harm (Mikolajczak et al., 2009), and suicidal ideation (Domínguez-García & Fernández-Berrocal, 2018) in order to better understand how EI can help to reduce these types of behavior.

Another interesting issue is related to gender. Although most of the work has been conducted with both male and female participants, the final data shown in our analyses are pooled across the whole sample. Of the 17 papers included, only six separately analyzed the data according to gender (Baroncelli & Ciucci, 2014; García-Sancho et al., 2017; Kwok et al., 2015; Peachey et al., 2017; Santesso et al., 2006; Schokman et al., 2014) and of these only two showed *r* values (Pearson's *r*) differentiating between men and women (Baroncelli & Ciucci, 2014; Peachey et al., 2017). This lack of studies analyzing gender differences prevented us from conducting a moderation analysis for gender in the meta-analysis. However, with regard to the six articles that addressed gender differences (although they did not report the effect size), we observed that all of these showed a significant negative correlation between EI and aggressive behavior for both genders. We believe that future studies analyzing these gender differences could provide interesting data for understanding how aggressive behavior develops throughout adolescence, since research indicates that girls tend to show more verbal and indirect aggressions while boys show more physical forms of this behavior (Björkqvist, 2018). In addition, previous research on gender differences in EI indicates that women—although perceived as having less emotional regulation than men—show higher total EI scores than men when this skill is assessed using performance measures (Fernández-Berrocal et al., 2012). Therefore, conducting gender-differentiated analyses could help us to gain a more in-depth understanding of this problem (Cabello, Sorrel, et al., 2016) and inform the guidelines to be followed in intervention programs.

In relation to the type of sample used in the works included in this systematic review and meta-analysis, it should be mentioned that all the works used community samples recruited from educational centers throughout the world. This represents a limitation when it comes to identifying how aggressive behaviors evolve in relation to the EI level of adolescents who are confined in juvenile centers for engaging in any type of aggressive behavior. In future work, it would therefore be interesting to investigate how aggressive behavior evolves in this population. Moreover, it would be worthwhile for future research to focus on exploring additional moderators on which the current literature does not offer enough information such as, for example, socioeconomic status, educational level, or cultural differences.

While the results of this study make a valuable contribution to an interesting body of research that seeks to analyze the relationships between social–emotional skills and aggressive behaviors, there are certain limitations worth mentioning. It should be noted that the number of studies that met the inclusion criteria was limited, while almost all of these were cross-sectional and each of these studies focused on a different type of aggressive behavior. Therefore, we believe it is necessary to conduct further longitudinal research studies to help us clarify whether the strength of the relationship between various types of aggressive behaviors and the level of EI is maintained over time, and whether these trajectories can be moderated by variables such as gender differences during adolescence.

Despite these limitations, the findings of this study have important implications for research and intervention programs that seek to reduce the number of aggressive behaviors in adolescence. Interventions aimed at reducing aggressive behavior are growing in educational settings (Castillo-Eito et al., 2020; WHO, 2020), but many of these have not considered EI. Even so, etiological theories of aggression suggest that young people engage in aggressive behavior through a complex interaction between individual and contextual factors. In particular, social–emotional factors such as emotional regulation, empathy, coping strategies, problem-solving, and communication skills are associated with a decline in the tendency to engage in aggressive behaviors. For example, Social and Emotional Learning (SEL) intervention programs have been implemented in thousands of schools worldwide (Weissberg et al., 2015), and evaluation of the various types of SEL programs has indicated the benefits of these interventions for modifying aggressive behavior (see Durlak et al., 2011). Specifically, EI intervention programs with adolescents (Cabello, Castillo, et al., 2016; Ruiz-Aranda et al., 2013) show us that teaching emotional skills has a considerable impact on dealing with the emotional and cognitive components of aggression and their behavioral manifestations (Castillo-Gualda et al., 2018; Ruiz-Aranda et al., 2013). Therefore, school strategies aimed at reducing aggressive behaviors should promote these emotional skills in young people through the use of EI intervention programs (Durlak et al., 2011; Espelage et al., 2018).

In conclusion, this systematic review and meta-analysis contributes toward obtaining a clearer understanding of the relationship between the level of EI and aggressive behaviors among adolescents, showing a significant negative correlation between these variables. These results are also congruent with previous evidence on the positive impact of emotional competencies on the development of personal and social well-being in adolescents.

Critical Findings

- To our knowledge, this is the first systematic review and meta-analysis of the relationship between aggressive behaviors and EI in adolescents. The research findings of all of the studies included are broadly similar, indicating that those adolescents who score higher on EI show lower levels of aggression. Further, these results are consistently observed regardless of the theoretical model of EI used, the type of aggressive behavior assessed, and the type of instrument used for its assessment.
- Meta-analyses of 17 studies revealed a significant negative correlation between EI and aggressive behaviors in the adolescent population ($r = –.20$, $p = .0001$), confirming, at a statistical level, both the direction and strength of the relationship between aggressive behavior and EI in adolescents.

Implications for Practice, Policy, and Research

- A better understanding of the relationship between aggressive behaviors and the level of EI in adolescents could help to inform the design of tailored approaches to the prevention of these behaviors and could improve aggressive intervention policies.
- The finding that adolescents who obtain higher scores on EI show lower levels of aggressive behavior highlights the importance of EI as a fundamental factor to be considered when dealing with the emotional and cognitive components of aggression and their behavioral manifestations and opens up several promising new lines of investigation.
- Programs that promote the development EI levels among the adolescent population report the benefits of these interventions for moderating aggressive behavior as well as for reducing the emotional, social, and economic consequences.
- There is a need to continue investigating the role that EI plays in reducing aggressive behaviors. In particular, new longitudinal studies are needed to confirm existing results and establish the mechanisms by which an adequate level of EI is linked to a decrease in aggressive behavior among adolescents.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was financed by the Ministry of Economy, Industry and Competitiveness (PSI2017-84170-R) and the Ministry of Education and Vocational Training (FPU17/00035).

ORCID iDs

Alberto Vega https://orcid.org/0000-0003-2028-4269
Rosario Cabello https://orcid.org/0000-0001-6908-7181
Alberto Megías-Robles https://orcid.org/0000-0002-4563-7465
Raquel Gómez-Leal https://orcid.org/0000-0003-1847-6966
Pablo Fernández-Berrocal https://orcid.org/0000-0002-0844-2976

References

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*(1), 27–51. https://doi.org/10.1146/annurev.psych.53.100901.135231

Bar-On, R. (2004). *Baron emotional quotient inventory: A measure of emotional intelligence: Administrator's guide*. MHS.

Baroncelli, A., & Ciucci, E. (2014). Unique effects of different components of trait emotional intelligence in traditional bullying and cyberbullying. *Journal of Adolescence*, *37*(6), 807–815. https://doi.org/10.1016/j.adolescence.2014.05.009

Batool, S. S., & Bond, R. (2015). Mediational role of parenting styles in emotional intelligence of parents and aggression among adolescents. *International Journal of Psychology*, *50*(3), 240–244. https://doi.org/10.1002/ijop.12111

Björkqvist, K. (2018). Gender differences in aggression. *Current Opinion in Psychology*, *19*, 39–42. https://doi.org/10.1016/j.copsyc.2017.03.030

Böhm, R., Thielmann, I., & Hilbig, B. E. (2018). The brighter the light, the deeper the shadow: Morality also fuels aggression, conflict, and violence. *Behavioral and Brain Sciences*, *41*, e98. https://doi.org/10.1017/S0140525X18000031

Bonell, C., Fletcher, A., Fitzgerald-Yau, N., Hale, D., Allen, E., Elbourne, D., Jones, R., Bond, L., Wiggins, M., Miners, A., Legood, R., Scott, S., Christie, D., & Viner, R. (2015). Initiating change locally in bullying and aggression through the school environment (INCLUSIVE): A pilot randomised controlled trial. *Health Technology Assessment*, *19*(53), 1–110. https://doi.org/10.3310/hta19530

Breman, R., MacRae, A., & Vicary, D. (2018). Child-perpetrated family violence in kinship care in Victoria. *Children Australia*, *43*(3), 192–197. https://doi.org/10.1017/cha.2018.28

Cabello, R., Castillo, R., Rueda, P., & Fernandez-Berrocal, P. (2016). *Programa INTEMO+: Mejorar la inteligencia emocional de los adolescentes*. Pirámide.[AQ11]

Cabello, R., Sorrel, M. A., Fernández-Pinto, I., Extremera, N., & Fernández-Berrocal, P. (2016). Age and gender differences in ability emotional intelligence in adults: A cross-sectional study. *Developmental Psychology*, *52*(9), 1486–1492. https://doi.org/10.1037/dev0000191

Castillo-Eito, L., Armitage, C. J., Norman, P., Day, M. R., Dogru, O. C., & Rowe, R. (2020). How can adolescent aggression be reduced? A multi-level meta-analysis. *Clinical Psychology Review*. https://doi.org/10.1016/j.cpr.2020.101853

Castillo-Gualda, R., Cabello, R., Herrero, M., Rodríguez-Carvajal, R., & Fernández-Berrocal, P. (2018). A three-year emotional intelligence intervention to reduce adolescent aggression: The mediating role of unpleasant affectivity. *Journal of Research on Adolescence*, *28*(1), 186–198. https://doi.org/10.1111/jora.12325

Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism*. Academic Press.

Cleveland, E. S. (2014). Digit ratio, emotional intelligence and parenting styles predict female aggression. *Personality and Individual Differences*, *58*, 9–14. https://doi.org/10.1016/j.paid.2013.09.020

Domínguez-García, E., & Fernández-Berrocal, P. (2018). The association between emotional intelligence and suicidal behavior: A systematic review. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.02380

Downey, L., Johnston, P., Hansen, K., Birney, J., & Stough, C. (2010). Investigating the mediating effects of emotional intelligence and coping on problem behaviours in adolescents. *Australian Journal of Psychology*, *62*(1), 20–29. https://doi.org/10.1080/00049530903312873

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*(1), 405–432.

Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ (Clinical Research Ed.)*, *315*(7109), 629–634. https://doi.org/10.1136/bmj.315.7109.629

Espelage, D. L., King, M. T., & Colbert, C. L. (2018). *Emotional intelligence and school-based bullying prevention and intervention* (pp. 217–242). https://doi.org/10.1007/978-3-319-90633-1_9

Estévez, E., Jiménez, T. I., & Segura, L. (2019). Emotional intelligence and empathy in aggressors and victims of school violence. *Journal of Educational Psychology*, *111*(3), 488–496. https://doi.org/10.1037/edu0000292

Fernández-Berrocal, P., Cabello, R., Castillo, R., & Extremera, N. (2012). Gender differences in emotional intelligence: The mediating effect of age. *Behavioral Psychology/Psicologia Conductual*, *20*(1), 77–89.

Fernández-Berrocal, P., Ruiz-Aranda, D., Salguero, J. M., Palomera, R., & Extremera, N. (2018). The relationship of Botín Foundation's Emotional Intelligence Test (TIEFBA) with personal and scholar adjustment of Spanish adolescents. *Revista de Psicodidáctica (English Ed.)*, *23*(1), 1–8. https://doi.org/10.1016/j.psicoe.2017.07.005

Fernández-González, L., Calvete, E., Orue, I., & Echezarraga, A. (2018). The role of emotional intelligence in the maintenance of adolescent dating violence perpetration. *Personality and Individual Differences*, *127*, 68–73. https://doi.org/10.1016/j.paid.2018.01.038

Fung, A. L. C. (2019). Adolescent reactive and proactive aggression, and bullying in Hong Kong: Prevalence, psychosocial correlates, and prevention. *Journal of Adolescent Health*, *64*(6), S65–S72. https://doi.org/10.1016/J.JADOHEALTH.2018.09.018

García-Sancho, E., Salguero, J. M., & Fernández-Berrocal, P. (2014). Relationship between emotional intelligence and aggression: A systematic review. *Aggression and Violent Behavior*, *19*(5), 584–591. https://doi.org/10.1016/J.AVB.2014.07.007

García-Sancho, E., Salguero, J. M., & Fernández-Berrocal, P. (2017). Ability emotional intelligence and its relation to aggression across time and age groups. *Scandinavian Journal of Psychology*, *58*(1), 43–51. https://doi.org/10.1111/sjop.12331

Graf, D., Yanagida, T., & Spiel, C. (2019). Through the magnifying glass: Empathy's differential role in preventing and promoting traditional and cyberbullying. *Computers in Human Behavior*, *96*, 186–195. https://doi.org/10.1016/J.CHB.2019.02.007

Gutiérrez-Cobo, M. J., Cabello, R., & Fernández-Berrocal, P. (2017). Inteligencia emocional, control cognitivo y estatus socioeconómico de los padres como factores protectores de la conducta agresiva en la niñez y la adolescencia. *Revista Interuniversitaria de Formación Del Profesorado*, *88*(1), 39–52. http://digibug.ugr.es/bitstream/handle/10481/49695/GutierrezCobo_InteligenciaEmocional.pdf?sequence=1&isAllowed=y **[AQ12]**

Higgins, J. P. T., & Thompson, S. G. (2011). Cochrane handbook for conducting systematic reviews. In *The Cochrane Collaboration*. http://handbook.cochrane.org/

Inglés, C. J., Torregrosa, M. S., García-Fernández, J. M., Martínez-Monteagudo, M. C., Estévez, E., & Delgado, B. (2015). Conducta agresiva e inteligencia emocional en la adolescencia. *European Journal of Education and Psychology*, *7*(1), 29. https://doi.org/10.30552/ejep.v7i1.97 **[AQ13]**

Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology*, *95*(1), 54–78. https://doi.org/10.1037/a0017286

Kokkinos, C. M., & Kipritsi, E. (2012). The relationship between bullying, victimization, trait emotional intelligence, self-efficacy and empathy among preadolescents. *Social Psychology of Education*, *15*(1), 41–58. https://doi.org/10.1007/s11218-011-9168-9

Kwok, S. Y. C. L., Yeung, J. W. K., Low, A. Y. T., Lo, H. H. M., & Tam, C. H. L. (2015). The roles of emotional competence and social problem-solving in the relationship between physical abuse and adolescent suicidal ideation in china. *Child Abuse & Neglect*, *44*, 117–129. https://doi.org/10.1016/j.chiabu.2015.03.020

Lanciano, T., Curci, A., Guglielmi, F., Soleti, E., & Grattagliano, I. (2018). Preliminary data on the role of emotional intelligence in moderating the link between psychopathy and aggression in a non-forensic sample. *Journal of Forensic Sciences*, *63*(3), 906–910. https://doi.org/10.1111/1556-4029.13612

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, *6*(7), e1000100. https://doi.org/10.1371/journal.pmed.1000100

Mavroveli, S., & Sánchez-Ruiz, M. J. (2011). Trait emotional intelligence influences on academic achievement and school behaviour. *British Journal of Educational Psychology*, *81*(1), 112–134. https://doi.org/10.1348/2044-8279.002009

Mayer, J. D., Caruso, D. R., & Salovey, P. (2016). The ability model of emotional intelligence: Principles and updates. *Emotion Review*, *8*(4), 290–300. https://doi.org/10.1177/1754073916639667

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology*, *59*(1), 507–536. https://doi.org/10.1146/annurev.psych.59.103006.093646

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp. 3–31). Basic Books.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2002). *Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) user manual*. Multi-Health Systems.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2005). *The Mayer–Salovey–Caruso Emotional Intelligence Test–Youth Version (MSCEIT-YV), research version*. Multi-Health Systems.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2012). Models of emotional intelligence. In *Handbook of intelligence* (pp. 396–420). Cambridge University Press. https://doi.org/10.1017/cbo9780511807947.019

Mazzone, A., Yanagida, T., Caravita, S. C. S., & Strohmeier, D. (2019). Moral emotions and moral disengagement: Concurrent and longitudinal associations with aggressive behavior among early adolescents. *The Journal of Early Adolescence*, *39*(6), 839–863. https://doi.org/10.1177/0272431618791276

Mikolajczak, M., Petrides, K. V., & Hurry, J. (2009). Adolescents choosing self-harm as an emotion regulation strategy: The protective role of trait emotional intelligence. *British Journal of Clinical*

Psychology, *48*(2), 181–193. https://doi.org/10.1348/014466508X386027

Peachey, A. A., Wenos, J., & Baller, S. (2017). Trait emotional intelligence related to bullying in elementary school children and to victimization in boys. *OTJR: Occupation, Participation and Health*, *37*(4), 178–187. https://doi.org/10.1177/1539449217715859

Pérez Fuentes, M. D. C., Molero Jurado, M. del M., Carrión Martínez, J. J., Mercader Rubio, I., & Gázquez, J. J. (2016). Sensation-seeking and impulsivity as predictors of reactive and proactive aggression in adolescents. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.01447

Quintana-Orts, C., Rey, L., Mérida-López, S., & Extremera, N. (2019). What bridges the gap between emotional intelligence and suicide risk in victims of bullying? A moderated mediation study. *Journal of Affective Disorders*, *245*, 798–805. https://doi.org/10.1016/j.jad.2018.11.030

Romera, E. M., Casas, J. A., Gómez-Ortiz, O., & Ortega-Ruiz, R. (2019). Moral domain as a risk and protective factor against bullying. An integrating perspective review on the complexity of morality. *Aggression and Violent Behavior*, *45*, 75–82. https://doi.org/10.1016/j.avb.2018.07.005

Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Sage.

Ruiz-Aranda, D., Cabello, R., Salguero, J. M., Palomera, R., Extremera, N., & Fernandez-Berrocal, P. (2013). *Programa INTEMO: Guía para mejorar la inteligencia emocional de los adolescentes*. Pirámide.[AQ14]

Salovey, P., Mayer, J. D., Golman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125–154). American Psychological Association.

Sanchez-Ruiz, M.-J., & Baaklini, A. (2018). Individual and social correlates of aggressive behavior in Lebanese undergraduates: The role of trait emotional intelligence. *The Journal of Social Psychology*, *158*(3), 350–360. https://doi.org/10.1080/00224545.2017.1353476

Santesso, L. D., Dana, L. R., Schmidt, L. A., & Segalowitz, S. J. (2006). Frontal electroencephalogram activation asymmetry, emotional intelligence, and externalizing behaviors in 10-year-old children. *Child Psychiatry and Human Development*, *36*(3), 311–328. https://doi.org/10.1007/s10578-005-0005-2

Sastre, A., Calmaestra, J., García, P., Del Moral, C., Perazzo, C., & Ubrich, T. (2016). *Yo a eso no juego. Bullying y ciberbullying en la infancia*. Save the Children.[AQ15]

Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. In *The lancet child and adolescent health* (Vol. *2*, Issue 3, pp. 223–228). Elsevier B. V. https://doi.org/10.1016/S2352-4642(18)30022-1

Schoeps, K., Villanueva, L., Prado-Gascó, V. J., & Montoya-Castilla, I. (2018). Development of emotional skills in adolescents to prevent cyberbullying and improve subjective well-being. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.02050

Schokman, C., Downey, L. A., Lomas, J., Wellham, D., Wheaton, A., Simmons, N., & Stough, C. (2014). Emotional intelligence, victimisation, bullying behaviours and attitudes. *Learning and Individual Differences*, *36*, 194–200. https://doi.org/10.1016/j.lindif.2014.10.013

Schwartz, J. P., Hage, S. M., Bush, I., & Burns, L. K. (2006). Unhealthy parenting and potential mediators as contributing factors to future intimate violence: A review of the literature. In *Trauma, violence, and abuse* (Vol. *7*, Issue 3, pp. 206–221). https://doi.org/10.1177/1524838006288932

Sitnik-Warchulska, K., & Izydorczyk, B. (2019). The psychic readiness for destruction among contemporary adolescents. *Journal of Clinical Nursing*, *28*(3–4), 469–479. https://doi.org/10.1111/jocn.14623

UNESCO. (2018). *School violence and bullying: Global status and trends, drivers and consequences*. www.unesco.org/open-access/terms-use-ccbysa-en

Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor. *Journal of Statistical Software*, *36*(3), 1–48.

Weissberg, Durlak, R. P., Domitrovich, J. A., Gullotta, C. E., & T. P. (2015). Social and emotional learning: Past, present, and future. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (pp. 3–19). The Guilford Press.

World Health Organization. (2020). *Preventing youth violence: An overview of the evidence*. www.who.int

Zych, I., Ttofi, M. M., & Farrington, D. P. (2019). Empathy and callous–unemotional traits in different bullying roles: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *20*(1), 3–21. https://doi.org/10.1177/1524838016683456

Author Biographies

Alberto Vega is a doctoral student in the Faculty of Education Science at University of Granada, Spain. His research focuses on emotional intelligence and prevention of aggressive behavior in children and adolescent.

Rosario Cabello is an associate professor of developmental and educational psychology at the University of Granada, Spain. Her research focuses on develop of new ways to assess emotional intelligence in children and adolescents and design of customized training programs for improving people's emotional intelligence and prevention of aggressive behaviors.

Alberto Megías-Robles is an associate professor in the Faculty of Psychology at the University of Málaga, Spain. His research focuses on decision making, aggression, risk behavior, and the study of the emotion and cognition interaction.

Raquel Gómez-Leal is a doctoral student in the Faculty of Psychology at University of Málaga, Spain. Her research focuses on emotional intelligence, prevention of aggressive behavior, and analysis of dark triad.

Pablo Fernández-Berrocal is a professor of psychology and director of Emotions Lab at the University of Málaga, Spain. His current themes of research are (1) experimental and correlational analysis of individual differences in emotional intelligence, (2) develop of new ways to assess emotional intelligence, and (3) design of customized training programs for improving people's emotional intelligence.