

# Relationship between emotional intelligence and aggression: A systematic review



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## ABSTRACT

Emotional intelligence (EI), defined as a set of abilities for perceiving, using, understanding, and managing emotions, has been associated with a better psychosocial adjustment. Empirical studies have found a positive relationship of EI with social function and a negative one with conflicts in social relationships. The purpose of this study was to systematically review available evidence on the relationship between EI and aggression. PubMed, PsycINFO and Scopus were searched for relevant articles in English and Spanish, and 19 eligible studies were identified. Together, these studies provide strong evidence that emotional abilities and aggressive behavior are negatively related: people with higher EI show less aggression. This relationship appears to be consistent across ages (from childhood to adulthood), cultures, types of aggression, and EI measures. Few studies have assessed EI using ability tests, and none of the eligible studies was longitudinal or experimental. These findings are discussed in relation to future research on aggression and strategies to prevent and manage it based on EI.

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## 1. Introduction

According to the World Health Organization (2002), each year more than 1.6 million people around the world die as a result of violent

behavior. In fact, violent behavior is one of the major causes of death for people aged 15–44. The prevalence and frequency of violent behavior around the world are far greater if we take into account violence that does not lead to death.

*Human aggression* is defined as any behavior directed toward another individual that is carried out with the *proximate* (immediate) intent to cause harm. In addition, the perpetrator must believe that the behavior will harm the target, and that the target is motivated to avoid the behavior (Anderson & Bushman, 2002).

Aggressive behavior produces negative effects not only in the victims, but also in the aggressors. More aggressive adolescents show clear psychosocial maladjustment, low academic performance, absenteeism from school, involvement in delinquent acts, substance abuse, and various mental health problems, including higher levels of depression (Moffitt, 2006; Ostrov & Godleski, 2009; Piquero, Daigle, Gibson, Piquero, & Tibbetts, 2007). The more aggressive adults are more likely than the less aggressive ones to exhibit psychiatric problems and criminal behavior as well as experience poor marital relations and unemployment (Alsaker & Olweus, 2002; Asberg, 1994; Coccaro, Noblett, & McCloskey, 2009; Farrington, 1991). Victims of aggression, for their part, suffer a myriad of negative consequences, including depression, anxiety, low self-esteem, and stress effects such as headaches, difficulty in sleeping, and a desire to skip school in the case of children and adolescents (Cava, Buelga, Musitu, & Murgui, 2010; Crick & Bigbee, 1998; O'Moore & Kirkham, 2001).

The strong influence of aggression on psychosocial adjustment and mental health outcomes highlights the importance of identifying variables that can increase or inhibit aggressive behavior. Knowledge of such variables is critical not only for understanding the mechanisms of aggression in greater detail, but also for designing effective programs for violence prevention and aggression management. Numerous studies have sought to understand processes that can affect aggression, including behavioral inhibition and control, empathy, and anger management (Barnett & Mann, 2013; Denson, Pedersen, Friese, Hahm, & Roberts, 2011; Pedersen et al., 2011; Van der Graaff, Branje, De Wied, & Meeus, 2012; Vasquez, Osman, & Wood, 2012; Wallace, Barry, Zeigler-Hill, & Green, 2012).

Among processes thought to influence aggressive behavior, emotional intelligence (EI) has emerged as a potentially relevant variable (Brackett, Mayer, & Warner, 2004). Several studies have generated substantial evidence of an important association. However, each study by itself has analyzed only a small part of the overall association, either because of a relatively small sample size or because participants were limited to one age group or culture. In order to examine the field as comprehensively as possible, and provide reliable conclusions based on the largest sample sizes, we have performed a systematic review of studies that analyze the relationship between EI and aggression.

### 1.1. Emotional intelligence

EI is defined 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). EI has been conceptualized primarily from two theoretical approaches: as a trait or as a mental ability. Trait EI, considered a personality trait, refers to the tendency or proclivity of a person to manage his or her emotions. Trait EI is usually measured using self-report instruments, such as the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009), which asks the respondent to estimate the degree to which he or she possesses certain emotional abilities (Petrides, Pita, & Kokkinaki, 2007).

In the second theoretical approach, EI is defined as a set of abilities that support the adaptive use of emotions as part of our cognitive processes. In other words, EI is genuinely considered a form of intelligence. Ability EI is usually assessed using performance test, such as the Mayer–

Salovey–Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002). This instrument is a performance test because it requires individuals to solve tasks, and it is an objective test because there are better and worse answers on it, as determined by consensus or expert scoring (Brackett, Rivers, & Salovey, 2011; Mayer, Salovey, & Caruso, 2000).

The EI theory predicts that people who are better at perceiving, understanding, using, and managing their own emotions and others' emotions are more likely to be psychosocially adjusted (Mayer, Roberts, & Barsade, 2008). This prediction is well supported by empirical studies that demonstrate a positive relationship of EI with social function and quality of social relationships, and a negative relationship of EI with a number of negative interactions and conflicts in social relationships (Brackett et al., 2011).

### 1.2. Emotional intelligence and aggression

In light of the relationship between EI and variables related to social function, several authors have begun to investigate whether the inability to manage emotions is associated not only with conflict behaviors in relationships but also with more serious behavior problems such as aggressive conducts (Lomas, Stough, Hansen, & Downey, 2012). Some studies have investigated possible associations between EI and different manifestations of aggression (e.g., physical, verbal) in different contexts (e.g., in school, with a partner, during sex) (Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001; Siu, 2009).

The objective of the present work was to systematically review the literature on EI and aggression in order to gain a comprehensive understanding of the relationship across different theoretical conceptualizations of EI, different types of aggression, and different ages and cultural contexts. This should allow us to develop a clear picture of the current state of research and propose future lines of investigation to complement existing gaps in the field.

## 2. Method

MEDLINE, PsycINFO and Scopus databases were carefully searched over the period of 5–9, November 2012 for articles published in English or Spanish in scientific journals, without regard for the year of publication. Relevant articles were tagged when they contained “emotional intelligence” as a keyword or as a term in the title or abstract, together with one or more additional search terms. In PsycINFO, these additional terms were “aggressive behavior”, “aggressiveness”, and “behavior problems”; in MEDLINE, they were the MeSH terms “social behavior”, “aggression”, and “social problem”. Articles were also tagged if they contained, as keywords or in the title or abstract, a combination of the phrases “emotional intelligence” and one or more of the following terms: “aggress\*”, “antisocial behavior”, “social behavior”, “behavior problem”, or “social problems”.

### 2.1. Inclusion and exclusion criteria

The first criterion for inclusion in our systematic review was that it be an empirical study about the relationship between EI and aggression, leading us to exclude theoretical studies, reviews, and meta-analyses. Studies had to evaluate EI based on a model of EI as a set of specific, interrelated emotional abilities. This led us to exclude studies that relied on evaluation measures not grounded in EI theory, such as those that related aggression to emotional perception or regulation using instruments not grounded in an EI framework. We included studies even if they evaluated only one emotional competency, as long as they evaluated it within an EI framework.

Given the broad range of subtly different concepts understood under the term “aggression”, including aggressivity, violence, and bullying; and given the diversity of empirical approaches to analyze aggression, we decided to restrict ourselves to studies examining aggression as

defined by Anderson and Bushman (2002) (see Section 1). Thus, we included only studies that examined an association between EI and a variable that presupposed the proximate (immediate) intention to cause harm to another individual, regardless of the specific type of harm involved. We excluded studies based on variables that did not presuppose such an intention, such as Machiavellianism, which measures the tendency of a person to exhibit manipulative behaviors in order to advance his or her own interests (Christie & Geis, 1970), but not necessarily in order to cause harm to another.

## 2.2. Literature searches

Database searches identified 446 relevant studies: 191 in Scopus, 93 in MEDLINE and 162 in PsycINFO. Elimination of duplicates gave 240 potentially eligible studies, the titles and abstracts of which were screened against the inclusion and exclusion criteria. This screening was performed independently by two investigators; in case of disagreement about study eligibility, a third researcher was consulted.

Most publications at this stage were excluded because they did not include EI and aggressive behavior as variables, leading to a set of 58 studies (Fig. 1). These studies were read in full and 18 were included. Most of the studies excluded in this step were papers that did not meet our definition of aggression. In this way, we excluded studies that analyzed disruptive behaviors, misconduct and aspects of social interaction that did not necessarily involve the intention to harm another. Consultation with experts led us to identify and include another eligible study (Plugia, Stough, Carter, & Joseph, 2005), giving a final set of 19 studies that empirically analyzed the relationship between EI and human aggression.

## 2.3. General characteristics of included studies

Key information about the studies included in this review is shown in Table 1 (studies with children), Table 2 (studies with adolescents) and Table 3 (studies with adults). These tables describe the variables analyzed, the size and characteristics of the sample, and the principal findings of each study. All 19 included studies used a cross-sectional design; none followed the cohort longitudinally. Three studies were carried out on people convicted of committing crimes, and one study was performed with participants in an anger management therapy program. Of the 19 studies, 16 evaluated EI using self-report instruments, and 3 using ability EI measures. Among the studies based on self-report, four were carried out with adults, seven with adolescents and five with children. All three studies based on ability EI involved adults.

To present the results systematically, we will consider separately the studies performed with children, adolescents or adults. Within each set of age-specific studies, we will consider separately studies based on self-report evaluations of EI and studies based on evaluation of ability EI.

## 3. Results

### 3.1. Results in children

We identified five studies that examined the association between EI and aggression in children (Table 1).

Esturgó-Deu and Sala-Roca (2010) examined the possible relationship between emotional abilities and disruptive behavior in primary school students. Teachers were asked to identify which aggressive behaviors were present in each of their students. At the same time,

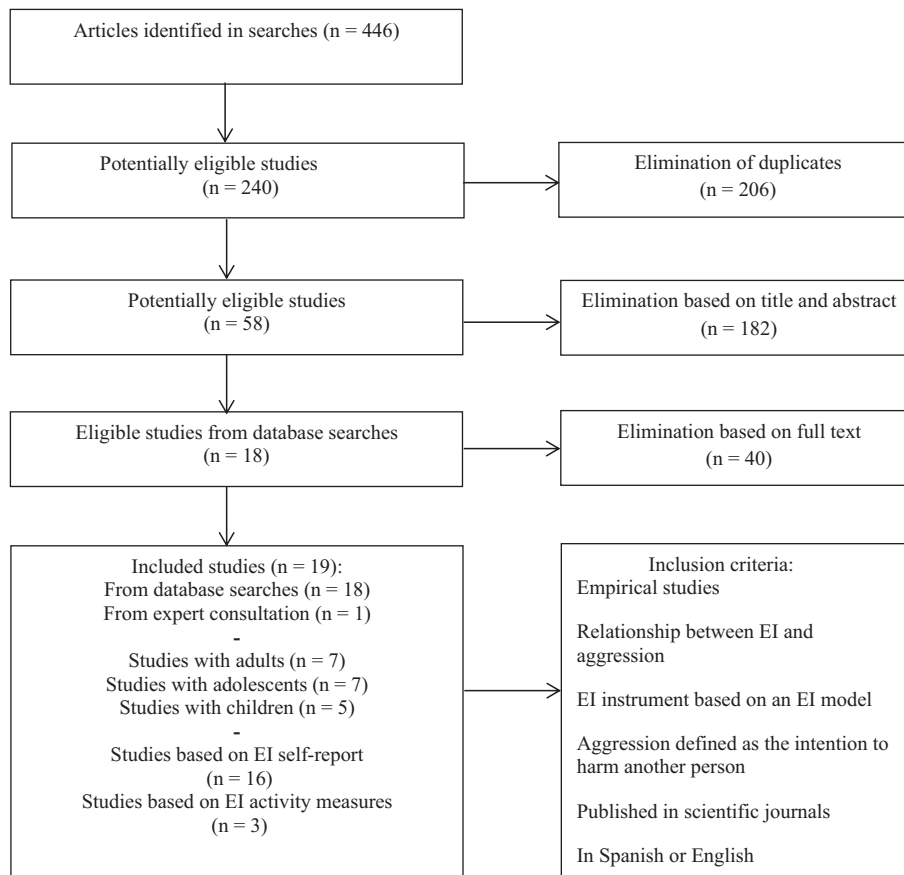


Fig. 1. Flowchart of study selection.

**Table 1**  
Studies of EI and aggression in children.

Study	EI scale	Aggression type	Sample (N)	Principal results
Esturgó-Deu and Sala-Roca (2010)	EQ-i:YV	Physical and verbal	1421 (743 boys, 678 girls) and 69 teachers (14 men, 55 women)	Children showing aggressive physical and verbal behavior had lower EI scores than children who did not show such behavior.
Petrides et al. (2006)	TEIQue-ASF	Physical	160 (77 boys, 83 girls)	Children with higher EI were less likely to be characterized as “aggressive” than children with lower EI.
Santesso et al. (2006)	EQ-i:YV-O	Type not reported	40 (21 boys, 19 girls)	EI was negatively associated with aggression.
Kokkinos and Kipritsi (2012)	TEIQue-ASF	Bullying	206 (95 boys, 111 girls)	EI was negatively related to bullying behaviors. EI explained some of the variance in bullying.
Mavroveli and Sánchez-Ruiz (2011)	TEIQue-CF	Bullying	565 (274 boys, 286 girls)	Children with higher EI scores were less likely to be described as “bullying”. EI was associated negatively with self-reported bullying behavior.

Abbreviations: Bar-On EQ-YV, Bar-On Emotional Quotient Inventory Youth Version (Bar-On & Parker, 2000); TEIQue-ASF, Trait Emotional Intelligence Questionnaire—Adolescent Short Form (Petrides, 2009); EQ-i:YV-O, Bar-On Emotional Quotient Inventory: Youth Version—Observer Form (Bar-On & Parker, In press); TEIQue-CF, Trait Emotional Intelligence Questionnaire—Child Form (Mavroveli et al., 2008).

the Reuven Bar-On's Emotional Quotient Inventory Test Youth Version (EQ:i:YV; Bar-On & Parker, 2000) was used to assess EI levels in the students. Results showed that students who exhibited disruptive behaviors, including physical or verbal attacks on their classmates, showed lower EI than students who did not. In other words, students with higher EI engaged in fewer aggressive behaviors against their classmates.

Similar results were obtained by Petrides, Sangareau, Furnham, and Frederickson (2006), who surveyed not only teachers, but also the students about the presence of aggressive behaviors in their classmates. Children with higher EI, as assessed using the Trait Emotional Intelligence Questionnaire—Adolescent Short Form (TEIQue-ASF; Petrides et al., 2006), were rated less often by their teachers and classmates as showing aggressive behavior and more often as showing prosocial behavior, such as collaboration.

These results were further supported by Santesso, Reker, Schmidt, and Segalowitz (2006), who examined the relationship between EI and externalizing behavior. EI of the participating children was assessed by their parents using the Bar-On Emotional Quotient Inventory: Youth Version—Observer Form (EQ-i:YV-O; Bar-On & Parker, In press). The parents were provided with a list of behaviors, among them aggressive ones, and asked to indicate which behaviors their children exhibited. The results showed that, again, higher EI was associated with less aggressive conduct.

While these studies in children suggest that EI contributes to the manifestation of aggressive acts in general, other studies also implicate EI in aggressive acts persistently committed against certain classmates, i.e., bullying. Kokkinos and Kipritsi (2012) and Mavroveli and Sánchez-Ruiz (2011) examined this relationship using various versions of the

TEIQue to evaluate EI (Mavroveli, Petrides, Shove, & Whitehead, 2008; Petrides et al., 2006). These studies showed a negative relationship between emotional competencies and self-reported levels of bullying. In addition, children with higher EI were reported by their classmates to engage in less aggressive behavior (Mavroveli & Sánchez-Ruiz, 2011). The variance in bullying behavior was explained by EI, gender, and self-reported levels of cognitive empathy. Male gender, lower EI, and greater difficulty in understanding others' perspective, were associated with active involvement in bullying behaviors (Kokkinos & Kipritsi, 2012).

### 3.2. Results with adolescents

We identified seven studies analyzing the relationship between emotional competencies and aggression levels in adolescents (Table 2).

Siu (2009) examined the relationship between self-reported EI and various behavioral problems, including aggressive conduct, in Chinese adolescents. EI was evaluated using the self-report scale of Schutte (EIS; Schutte et al., 1998). The results showed that poor use of emotions was associated with aggressive behavior. A similar study with another sample of Malaysian adolescents (Liau, Liu, Teoh, & Liu, 2003) came to similar results after taking into account several additional variables frequently associated with aggression, such as parental control over their children. These latter authors also found that EI level, as assessed using the EIS (Schutte et al., 1998), moderated the relationship between parental control and aggression. Among adolescents whose parents exerted a high degree of control over them, those with high EI showed fewer aggressive behaviors than those with low EI.

**Table 2**  
Studies of EI and aggression in adolescents.

Study	EI scale	Type of aggression	Sample (N)	Principal results
Elipe et al. (2012)	TMMS	Bullying, telephone bullying, cyberbullying	5754 (2923 young men, 2831 young women)	EI was negative related to bullying. Emotional attention and emotional repair were negative related to bullying.
Downey et al. (2010)	Adolescent SUEIT	Type not reported	145 (60 young men, 85 young women)	Emotional understanding and emotional management and control were negatively related with aggressive behaviors. The use of non-productive coping strategies mediated the relationship between emotional management and aggression.
Liau et al. (2003)	EIS	Type not reported	203 (106 young men, 97 young women)	Adolescents with higher EI showed less aggressive behavior.
Lomas et al. (2012)	Adolescent SUEIT	Bullying	68 (31 young men, 37 young women)	EI moderated the relationship between parental control and aggression. Better understanding of others' emotions was negatively associated with tendency to engage in bullying.
Moriarty et al. (2001)	TMMS	–	64 (15 male sexual aggressors, 49 male non-aggressor students)	The sexual aggressor group showed lower emotional clarity and repair than the non-aggressor group. Sexual aggressors paid higher attention to feelings.
Oluyinka (2009)	EIS	Bullying	215 (106 young men, 109 young women)	EI was negatively related to bullying. EI mediated the relationship between misbehavior and bullying.
Siu (2009)	EIS	Physical and verbal	325 (167 young men, 158 young women)	Poor use of emotions predicted aggressive behaviors.

Abbreviations: TMMS, Trait Meta-Mood Scale (Salovey et al., 1995); Adolescent SUEIT, Swinburne University Emotional Intelligence Test (Luebbbers et al., 2007); EIS, Schutte Emotional Intelligence Scale (Schutte et al., 1998).



**Table 3**  
Studies of EI and aggression in adults.

Study	EI scale	Type of aggression	Sample (N)	Principal results
Gardner and Qualter (2010)	EIS, TEIQue, MEIA	Physical and verbal	310 (74 men, 236 women)	EI was related to physical and verbal aggression, anger and hostility.
Mansfield et al. (2009)	TMMS	Physical and verbal	92 members of an emotional regulation therapy group (49 men, 43 women)	EI was negatively related to aggression in women and men.
Vernon et al. (2009)	Study 1: TEIQue Study 2: TEIQue SF	Study 1: Aggressive humor Study 2: Aggressive humor	Study 1: 862 (261 men, 601 women) Study 2: 3936 (332 men, 3604 women)	Study 1: Individuals using aggressive humor showed lower EI. Study 2: Individuals with higher EI showed lower use of aggressive humor.
Winters et al. (2004)	Study 1: EQ-i Study 2: EQ-i	Study 1: Propensity to abuse Study 2: Propensity to abuse	Study 1: 44 adults convicted of spouse abuse Study 2: 76 university students (33 men, 43 women)	Study 1: Abusers showed low EI scores. Study 2: EI was negatively related with the propensity to abuse, in women and men.
Yip and Martin (2006)	MSCEIT	Aggressive humor	111 (45 men, 66 women)	Emotional perception was negatively related to use of aggressive humor.
Plugia et al. (2005)	MSCEIT	–	56 (19 sexual delinquents, 18 non-sexual delinquents, 19 non-delinquent controls)	Sexual aggressors and non-delinquent controls perceived others' emotions better than did the non-sexual aggressors. There were no significant differences between the sexual aggressors and the controls.
Côté et al. (2011)	MSCEIT	Deviant interpersonal behavior	252 (69 men, 183 women)	Emotional regulation was not directly associated with deviant conduct. The interaction between Machiavellianism and emotional management positively predicted deviant conduct.

Abbreviations: EIS, Schutte Emotional Intelligence Scale (Schutte et al., 1998); TEIQue, Trait Emotional Intelligence Questionnaire (Petrides, 2009); MEIA, Multidimensional Emotional Intelligence Assessment (Tett et al., 2005); TMMS, Trait Meta-Mood Scale (Salovey et al., 1995); MSCEIT, Mayer–Salovey–Caruso Emotional Intelligence Test (Mayer et al., 2002); TEIQue, Trait Emotional Intelligence Questionnaire Short Form (Petrides, 2009); EQ-I, Emotional Quotient Inventory (Bar-On, 1997).

Lomas et al. (2012) studied the relationship between EI and bullying in Australian adolescents. EI was assessed using the Adolescent Swinburne University Emotional Intelligence Test (SUEIT; Luebbbers, Downey, & Stough, 2007), while bullying behavior by each adolescent was assessed by surveying classmates. The results showed that adolescents with greater difficulties in understanding others' emotions were more likely to bully their classmates. Similar results were reported by Downey, Johnston, Hansen, Birney, and Stough (2010), who found that Australian adolescents with low emotional understanding as well as low emotional control and management exhibited more aggressive behavior. This negative relationship was mediated by the use of non-productive coping strategies (e.g., strategies that do not focus on resolving the problem): Adolescents with high ability to manage and regulate their emotions were less likely to use non-productive coping strategies and, therefore, less likely to engage in aggressive behavior.

Oluyinka (2009) examined the emotional abilities and bullying behaviors in high school students in Nigeria, and reported a negative relationship between EI, as assessed using the EIS (Schutte et al., 1998), and bullying. Similarly, EI mediated the relationship between bullying and adolescent misconduct, defined as transgressing norms at school, in the home or in the community.

Elipe, Ortega, Hunter, and del Rey (2012) assessed the relationship between emotional abilities, as measured using the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), and involvement as victim and/or aggressor in bullying, telephone bullying, and cyberbullying. Male gender, younger age, lower ability to repair emotions, and higher attention to feelings were associated with greater bullying behavior. A tendency to take on the role of aggressor in bullying interactions was associated with male gender, younger age, lower emotional clarity, and higher attention to feelings.

These results suggest a negative relationship between EI and aggression toward peers in adolescence. To determine whether these findings also applied to more serious aggressive behavior, Moriarty et al. (2001) compared EI, as assessed by self-report using the TMMS (Salovey et al., 1995), between two groups of male adolescents: one group of sexual aggressors who were attending a positive sexuality program, and another group of adolescents who had never committed any crime. The group of sexual aggressors showed lower levels of ability to understand their feelings and to repair negative emotions and prolong positive ones. However, the sexual aggressors showed significantly

higher attention to feelings, indicating a greater tendency to monitor their emotions.

### 3.3. Results with adults

Our search identified seven studies examining the relationship between EI and aggression in adults. Four of those studies evaluated EI using self-report instruments, while three assessed it using an ability measure (Table 3).

#### 3.3.1. Studies based on self-reported EI

Gardner and Qualter (2010) examined the validity, both concurrent and incremental, of three EI instruments for various criterion variables, including physical and verbal aggression. The three instruments were EIS (Schutte et al., 1998), the Multidimensional Emotional Intelligence Assessment (MEIA; Tett, Fox, & Wang, 2005), and TEIQue (Petrides, 2009). Results with all three instruments indicated a negative relationship of EI with physical and verbal aggression; the relationship was stronger when the TEIQue was used.

Similar results were obtained by Mansfield, Addis, Cordova, and Lynn (2009), who examined the relationship of EI, as assessed using the TMMS, with physical and verbal aggression in adults participating in a treatment program for emotional regulation and anger management. Various analyses showed that, in men, EI mediated the relationship between aggression and insecure attachment, as well as the relationship between aggression and presence of symptoms characteristics of post-traumatic stress. In women, by contrast, EI mediated only the relationship between aggression and the presence of trauma symptoms.

Vernon et al. (2009) focused on a different type of aggression. They found that EI, as assessed using the TEIQue (Petrides, 2009), was negatively associated with aggressive humor, which involves using sense of humor to harm another person.

Winters, Clift, and Dutton (2004) published one of the few studies on EI and spouse abuse. They evaluated EI using the EQ-i (Bar-On, 1997). In Study 1, adult males with at least one conviction for spouse abuse were found to have lower EI scores compared with the normative scores. Their low EI levels correlated with propensity to abuse their partners. Study 2 replicated Study 1 with male and female university students, demonstrating that the results in Study 1 also applied to the general population. The results of Study 2 also showed a negative

relationship between EI and propensity to abuse a partner; this relationship was observed in both the women and men in the sample. Together these studies indicate a relationship between deficits in emotional competencies and the tendency to commit aggressive acts against a romantic partner.

### 3.3.2. Studies based on ability measures of EI

All the three studies based on ability measures of EI used the MSCEIT. Plugia et al. (2005) compared EI among three groups of adult men: sexual aggressors, non-sexual aggressors, and matched control individuals with no criminal record. EI levels in the sexual aggressor group were similar to those in the control group, but both these groups differed significantly from the non-sexual aggressor group. Non-sexual aggressors showed significantly lower emotional perception than the other two groups.

The negative relationship between EI and use of aggressive sense of humor, which Vernon et al. (2009) reported based on a self-report EI assessment, was also observed in a study (Yip & Martin, 2006) whose results showed that people who used aggressive humor to a greater extent had lower emotional perception, suggesting that the use of this negative humor may reflect a deficit in the perception of one's own emotions and those of others.

Côté, DeCelles, McCarthy, Van Kleef, and Hideg (2011) examined the relationship of emotional management, as assessed using the MSCEIT, with a self-reported measure of deviant behavior (e.g., embarrass someone at work) and related variables (Machiavellianism). The results did not demonstrate a direct association between emotional management and deviant conduct. They did, however, show that the level of emotional regulation moderated the association between Machiavellianism and deviant conduct: among individuals with a strong Machiavellian trait, those showing high emotional management exhibited more deviant behaviors than did those showing low emotional management.

## 4. Discussion

### 4.1. Conclusions

The present systematic review analyzed the literature on EI and aggression, identifying 19 relevant studies, of which 18 reported a negative relationship between the two constructs. In other words, people with high EI exhibited fewer aggressive behaviors than those with low EI. These results were consistent across different ages, from childhood to adulthood, and across cultural contexts, including the US, Spain, China, Malaysia, Canada, Australia, and the UK. These results also appear to be independent of the type of aggression (e.g., physical, sexual or humor-based) as well as independent of whether EI was assessed by self-report or ability measure.

Studies in children, adolescents, and adults point to a negative association between emotional abilities and aggression. In studies in children, this finding was robust to whether the assessment of aggressive behavior came from the parents, classmates or the study participant himself. The included studies suggest that the negative relationship between EI and aggression does not depend on the type of aggression or on its severity. People with higher EI were less involved in aggressive actions of all types, including aggressive humor, pushes, punches, shouting, threats, partner abuse, and sexual violence. Indeed, the negative relationship between EI and aggression was observed both in the normal population and in people convicted of criminal aggression.

All but three studies in our review assessed EI using self-report instruments. Their results were consistent with the remaining three studies based on ability measures of EI. The fact that studies based on ability measures reported a negative relationship between EI and aggression highlights the importance of emotional perception in aggression. This is consistent with previous research suggesting that difficulties in the ability to perceive others' emotions can lead to hostile

attribution bias, engendering a reactive and aggressive attitude (Crick & Dodge, 1994). At the same time, one study of our review that assessed EI by ability measures highlights how sometimes emotional abilities facilitate rather than inhibit aggressive behavior. Côté et al. (2011) showed that individuals with high Machiavellianism and emotionally skilled can initiate aggressive or deviant behaviors to obtain his or her objectives. These findings provide an important counterbalance to the many studies describing how emotional ability management can protect against aggressive conduct and highlight the role of personality traits to use emotional skills.

Research has sought to examine more deeply the relationship between EI and aggression by analyzing the ability of EI to mediate or moderate the association between aggression and related variables. For example, EI mediates the relationship between adolescent misconduct and aggressive actions (Oluyinka, 2009), the relationship between post-traumatic symptoms and aggression in adult men and women, and the relationship between insecure attachment and aggression in adult men (Mansfield et al., 2009). In addition, among adolescents under strong control of their parents, those with high EI exhibit less aggressive conduct than those with low EI (Liau et al., 2003). Moreover, Downey et al. (2010) explored whether other variables may influence the relationship between EI and aggression. They found that, when faced with a problem, people with lower EI are more likely to use non-productive coping strategies and focus on reducing one's own distress instead of solving the problem. This is according to previous research showing that aggression is positively associated with regulation strategies focusing only on emotion, such as anger rumination, after a conflict (Denson, 2013).

### 4.2. Limitations of the included studies

While the studies in this review have allowed us to identify a relationship between EI and aggression, they suffer from certain limitations. First, none of the studies involved a longitudinal design. Second, none examined the relationship between EI and aggression experimentally, limiting our ability to draw causal inferences from the results. Third, most studies assessed EI using self-report instruments, with only three assessing it using ability tests. In addition, these three tests involved only adults and particularly severe types of aggression less prevalent in the general population. Fourth, the participants in most investigations presented only low to medium levels of aggression, raising the question of whether the findings also apply to more serious aggressive behavior.

### 4.3. Future research

The insights from the included studies, as well as their limitations, immediately suggest several lines of research to fill gaps in the literature and extend current knowledge. Longitudinal, experimental studies are urgently needed to verify and extend these findings about the relationship between EI and aggression. Studies in children and adolescents that assess EI using ability measures are also needed. Indeed, studies should seek to confirm the observed relationship between EI and aggression in adults using ability measures and exploring additional types of aggression, such as physical, verbal and relational.

Some authors have shown in other studies gender differences in the relationship between EI and variables such as depression, substance abuse, and social conduct (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Lishner, Swin, Hong, & Vitacco, 2011; Salguero, Extremera, & Fernández-Berrocal, 2012). Possible gender effects were not systematically addressed in the studies in our review, highlighting the need for future work on this question. Other variables, such as coping styles, have already been shown to mediate the relationship between EI and aggression. Future work should explore what non-productive coping strategies, such as anger rumination, specifically mediate this relationship.

Increased knowledge of the variables that affect aggression will allow better understanding of this phenomenon and will facilitate the design of more effective prevention and treatment programs. For example, better knowledge of the role of emotional abilities in aggressive behaviors will help create programs focused on precisely those aspects of EI most strongly related to aggression. The goal would be to increase those abilities in individuals, enabling them to manage their emotions better and inhibit aggressive conduct (Castillo, Salguero, Fernández-Berrocal, & Balluerka, 2013).

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## References<sup>1</sup>

- Alsaker, F., & Olweus, D. (2002). Stability and change in global self-esteem and self-related affect. In T. M. Brinthaup, & R. P. Lipka (Eds.), *Understanding early adolescent self and identity: Applications and intervention* (pp. 193–223). Albany, NY: SUNY Press.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27–51, <http://dx.doi.org/10.1146/annurev.psych.53.100901.135231>.
- Asberg, M. (1994). Monomamine neurotransmitters in human aggressiveness and violence: A selective review. *Criminal Behaviour and Mental Health*, 4, 303–327.
- Barnett, G., & Mann, R. E. (2013). Empathy deficits and sexual offending: A model of obstacles to therapy. *Aggression and Violent Behavior*, 18, 228–239.
- Bar-On, R. (1997). *The Emotional Quotient Inventory (EQ-i). A test of emotional intelligence*. Toronto: Multi-Health Systems.
- Bar-On, R., & Parker, J. D. A. (2000). *EQ:YV. Bar-On Emotional Quotient Inventory Youth Version*. Technical manual. New York: MHS.
- Bar-On, R., & Parker, J. D. (2014). *Bar-On Emotional Quotient Inventory: Youth Version—Observer Form*. Toronto, Canada: Multi-Health Systems (In press).
- Brackett, M., Mayer, J. D., & Warner, R. M. (2004). Emotional intelligence and the prediction of behavior. *Personality and Individual Differences*, 36, 1387–1402.
- Brackett, M. A., Rivers, S. E., & Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success. *Social and Personality Psychology Compass*, 5(1), 88–103, <http://dx.doi.org/10.1111/j.1751-9004.2010.00334.x>.
- Brackett, M. A., Rivers, S. E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: A comparison of self-report and performance measures of emotional intelligence. *Journal of Personality and Social Psychology*, 91(4), 780–795, <http://dx.doi.org/10.1037/0022-3514.91.4.780>.
- Castillo, R., Salguero, J. M., Fernández-Berrocal, P., & Balluerka, N. (2013). Effects of an emotional intelligence intervention on aggression and empathy among adolescents. *Journal of Adolescence*, 36(5), 883–892.
- Cava, M. J., Buelga, S., Musitu, G., & Murgui, S. (2010). Violencia escolar entre adolescentes y sus implicaciones en el ajuste psicosocial: Un estudio longitudinal. *Revista de Psicodidáctica*, 15(1), 21–34.
- Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism*. New York: Academic Press.
- Coccaro, E., Noblett, K., & McCloskey, M. (2009). Attributional and emotional responses to socially ambiguous cues: Validation of a new assessment of social/emotional information processing in healthy adults and impulsive aggressive patients. *Journal of Psychiatric Research*, 43(10), 915–925, <http://dx.doi.org/10.1016/j.jpsychires.2009.01.012>.
- \*Côté, S., DeCelles, K. A., McCarthy, J. M., Van Kleef, G. A., & Hideg, I. (2011). The Jekyll and Hyde of emotional intelligence: Emotion-regulation knowledge facilitates both prosocial and interpersonally deviant behavior. *Psychological Science*, 22(8), 1073–1080, <http://dx.doi.org/10.1177/0956797611416251>.
- Crick, N. R., & Bigbee, M. A. (1998). Relational and overt forms of peer victimization: A multiinformant approach. *Journal of Consulting and Clinical Psychology*, 66(2), 337–347, <http://dx.doi.org/10.1037/0022-006X.66.2.337>.
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information processing mechanisms in children's adjustment. *Psychological Bulletin*, 115, 74–101.
- Denson, T. F. (2013). The multiple systems model of angry rumination. *Personality and Social Psychology Review*, 17, 103–123, <http://dx.doi.org/10.1177/1088868312467086>.
- Denson, T. F., Pedersen, W. C., Friese, M., Hahm, A., & Roberts, L. (2011). Understanding impulsive aggression: Angry rumination and reduced self-control capacity are mechanisms underlying the provocation–aggression relationship. *Personality and Social Psychology Bulletin*, 37(6), 850–862, <http://dx.doi.org/10.1177/0146167211401420>.
- \*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, 20–29, <http://dx.doi.org/10.1080/00049530903312873>.
- \*Elípe, P., Ortega, O., Hunter, S. C., & del Rey, R. (2012). Inteligencia emocional percibida e implicación en diversos tipos de acoso escolar. *Psicología Conductual*, 20(1), 169–181.
- \*Esturgó-Deu, M. E., & Sala-Roca, J. (2010). Disruptive behaviour of students in primary education and emotional intelligence. *Teaching and Teacher Education*, 26, 830–837, <http://dx.doi.org/10.1016/j.tate.2009.10.020>.
- Farrington, D. P. (1991). Childhood aggression and adult violence: Early precursors and life outcomes. In D. J. Pepler, & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 5–29). Hillsdale, NJ: Erlbaum.
- \*Gardner, K. J., & Qualter, P. (2010). Concurrent and incremental validity of three trait emotional intelligence measures. *Australian Journal of Psychology*, 62(1), 5–13, <http://dx.doi.org/10.1080/00049530903312875>.
- \*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, <http://dx.doi.org/10.1007/s1218-011-9168-9>.
- \*Liau, A. K., Liau, A. W. L., Teoh, G. B. S., & Liau, M. T. L. (2003). The case for emotional literacy: The influence of emotional intelligence on problem behaviours in Malaysian secondary school students. *Journal of Moral Education*, 32(1), 51–66, <http://dx.doi.org/10.1080/0305724022000073338>.
- Lishner, D. A., Swin, D. R., Hong, P. Y., & Vitacco, M. J. (2011). Psychopathy and ability emotional intelligence. Widespread or limited association among factors? *Personality and Individual Differences*, 50, 1029–1033, <http://dx.doi.org/10.1016/j.paid.2011.01.018>.
- \*Lomas, J., Stough, C., Hansen, K., & Downey, L. A. (2012). Brief report: Emotional intelligence, victimization and bullying in adolescents. *Journal of Adolescence*, 35, 207–211, <http://dx.doi.org/10.1016/j.adolescence.2011.03.002>.
- Luebbers, S., Downey, L. A., & Stough, C. (2007). The development of an adolescent measure of EI. *Personality and Individual Differences*, 42, 999–1009, <http://dx.doi.org/10.1016/j.paid.2006.09.009>.
- \*Mansfield, A. K., Addis, M. E., Cordova, J. V., & Lynn, D. (2009). Emotional skillfulness as a key mediator of aggression. *Journal of Aggression, Maltreatment and Trauma*, 18(3), 221–247, <http://dx.doi.org/10.1080/10926770902809811>.
- Mavroveli, S., Petrides, K. V., Shove, C., & Whitehead, A. (2008). Investigation of the construct of trait emotional intelligence in children. *European Child & Adolescent Psychiatry*, 17, 516–526, <http://dx.doi.org/10.1007/s00787-008-0696-6>.
- \*Mavroveli, S., & Sánchez-Ruiz, M. J. (2011). Trait emotional intelligence influences on academic achievement and school behavior. *British Journal of Educational Psychology*, 81, 112–134, <http://dx.doi.org/10.1348/2044-8279.002009>.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology*, 59, 507–536, <http://dx.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). New York: Basic Books.
- Mayer, J. D., Salovey, P., & Caruso, D. (2000). Models of emotional intelligence. In R. J. Sternberg (Ed.), *Handbook of intelligence* (pp. 396–420) (New York: Cambridge).
- Mayer, J. D., Salovey, P., & Caruso, D. (2002). *Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) user's manual*. Toronto, Canada: MHS.
- Moffitt, T. E. (2006). Life-course persistent versus adolescent-limited antisocial behavior. In D. Cicchetti, & D. Cohen (Eds.), *Developmental psychopathology* (pp. 570–598) (2 ed.). New York: Wiley.
- \*Moriarty, N., Stough, C., Tidmarsh, P., Eger, D., & Dennison, S. (2001). Deficits in emotional intelligence underlying adolescent sex offending. *Journal of Adolescence*, 24, 743–751, <http://dx.doi.org/10.1006/jado.2001.0441>.
- O'Moore, M., & Kirkham, C. (2001). Self-esteem and its relationship to bullying behavior. *Aggressive Behavior*, 27(4), 269–283, <http://dx.doi.org/10.1002/ab.1010>.
- \*Oluyinka, O. A. (2009). Mediator role of emotional intelligence on the relationship between self-reported misconduct and bullying behaviour among secondary school students. *IFE Psychologia*, 17(2), 106–120.
- Ostrov, J., & Godleski, S. (2009). Impulsivity-hyperactivity and subtypes of aggression in early childhood: An observational and short term longitudinal study. *European Child and Adolescent Psychiatry*, 18(8), 477–483, <http://dx.doi.org/10.1007/s00787-009-0002-2>.
- Pedersen, W. C., Denson, T. F., Gross, R. J., Vasquez, E. A., Kelley, N. J., & Miller, N. (2011). The impact of rumination on aggressive thoughts, feelings, arousal, and behavior. *British Journal of Social Psychology*, 50, 281–301, <http://dx.doi.org/10.1348/014466610x515696>.
- Petrides, K. V. (2009). *Technical manual for the Trait Emotional Intelligence Questionnaire (TEIQue)*. London: London Psychometric Laboratory.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98(2), 273–289, <http://dx.doi.org/10.1348/000712606X120618>.
- \*Petrides, K. V., Sangareau, Y., Furnham, A., & Frederickson, N. (2006). Trait emotional intelligence and children's peer relations at school. *Social Development*, 15, 537–547, <http://dx.doi.org/10.1111/j.1467-9507.2006.00355.x>.
- Piquero, A. R., Daigle, L. E., Gibson, C., Piquero, N. L., & Tibbetts, S. G. (2007). Are life-course persistent offenders at risk for adverse health outcomes? *Journal of Research in Crime and Delinquency*, 44, 185–207, <http://dx.doi.org/10.1177/0022427806297739>.
- \*Plugia, L., Stough, C., Carter, J. D., & Joseph, M. (2005). The emotional intelligence of adult sex offenders: Ability based EI assessment. *Journal of Sexual Aggression*, 11(3), 249–258, <http://dx.doi.org/10.1080/13552600500271384>.
- Salguero, J. M., Extremera, N., & Fernández-Berrocal, P. (2012). Emotional intelligence and depression: The moderator role of gender. *Personality and Individual Differences*, 53(1), 29–32, <http://dx.doi.org/10.1016/j.paid.2012.02.006>.
- Salovey, P., Mayer, J. D., Goldman, 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. 125–151). Washington: American Psychological Association.
- \*Santesso, D. L., Reker, D. L., 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, <http://dx.doi.org/10.1007/s10578-005-0005-2>.

<sup>1</sup> Articles marked with an asterisk were included in the systematic review.



- Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., et al. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25, 167–177.
- \*Siu, A. F. (2009). Trait emotional intelligence and its relationships with problem behavior in Hong Kong adolescents. *Personality and Individual Differences*, 47(6), 553–557, <http://dx.doi.org/10.1016/j.paid.2009.05.004>.
- Tett, R. P., Fox, K. E., & Wang, A. (2005). Development and validation of a self-report measure of emotional intelligence as a multidimensional trait domain. *Personality and Social Psychology Bulletin*, 31, 1–30, <http://dx.doi.org/10.1177/0146167204272860>.
- Van der Graaff, J., Branje, S., De Wied, M., & Meeus, W. (2012). The moderating role of empathy in the association between parental support and adolescent aggressive and delinquent behavior. *Aggressive Behavior*, 38, 368–377, <http://dx.doi.org/10.1002/ab.21435>.
- Vasquez, E. A., Osman, S., & Wood, J. L. (2012). Rumination and the displacement of aggression in United Kingdom gang-affiliated youth. *Aggressive Behavior*, 38, 89–97, <http://dx.doi.org/10.1002/ab.20419>.
- \*Vernon, P. A., Villani, V. C., Schermer, J. A., Kirilovic, S., Martin, R. A., Petrides, K. V., et al. (2009). Genetic and environmental correlations between trait emotional intelligence and humor styles. *Journal of Individual Differences*, 30(3), 130–137, <http://dx.doi.org/10.1027/1614-0001.30.3.130>.
- Wallace, M. T., Barry, C. T., Zeigler-Hill, V., & Green, B. A. (2012). Locus of control as a contributing factor in the relation between self-perception and adolescent aggression. *Aggressive Behavior*, 38, 213–221, <http://dx.doi.org/10.1002/ab.21419>.
- \*Winters, J., Clift, R. J. W., & Dutton, D. G. (2004). An exploratory study of emotional intelligence and domestic abuse. *Journal of Family Violence*, 19(5), 255–267, <http://dx.doi.org/10.1023/B:JOFV.0000042076.21723.f3>.
- World Health Organization (2002). *World report on violence and health*. Washington: OPS.
- \*Yip, J. A., & Martin, R. A. (2006). Sense of humor, emotional intelligence, and social competence. *Journal of Research in Personality*, 40, 1202–1208, <http://dx.doi.org/10.1016/j.jrp.2005.08.005>.