

# Multidimensional Trait Emotional Intelligence and Aggressive Tendencies in Male Offenders of Domestic Violence

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**Abstract** This study was undertaken to identify the role of six facets of trait-emotional intelligence (EI) in men's aggressive tendencies toward intimate partners ( $N=131$ ). Consistent with past research, hierarchical regression showed emotional self-regulation and empathy were negatively and uniquely predictive of four self-reported aggressive tendencies: physical aggression, verbal aggression, anger, and hostility. Canonical correlations yielded two distinct patterns of relationships between EI and aggressive tendencies. The first canonical correlation supported an overall negative relationship, especially involving dependent variables anger and hostility. A second canonical correlation revealed higher physical and verbal aggression were associated with higher emotional self-recognition, regulation of others' emotions, nonverbal emotional expression, and lower empathy. Findings support a multidimensional understanding of EI and aggressive tendencies.

**Keywords** Aggression · Canonical correlation · Emotional intelligence · Domestic violence

Aggression against female partners is commonly reported in intimate relationships. Based on a global review of the literature, Alhabib et al. (2010) concluded that “violence against women has reached epidemic proportions in many societies” (p. 373). In the United States, 24.3 % of women have experienced severe physical aggression by a partner, and 48.4 %

have experienced psychological aggression by a partner (Black et al. 2011). Along similar lines, Feder and Wilson (2005) found intimate partner homicide accounts for up to 11 % of total murders in the United States. Although men and women are aggressive toward their partners at similar rates (Straus 1999; Straus and Gelles 1986), men are far more likely to seriously injure their partners (Archer 2000). Male-to-female partner aggression is accordingly an important target of research.

Male aggression in intimate relationships has been linked to problems with emotional functioning (e.g., Babcock et al. 2008; Winters et al. 2004). Emotional intelligence (EI), a relatively new concept with increasing popularity in the clinical literature (Schutte et al. 2007), bears consideration in understanding partner aggression. Building on past findings demonstrating EI's relationship to general aggression in intimate relationships (Gardner and Qualter 2010; Winters et al. 2004), the current study was undertaken to explore the role of trait-EI as a multidimensional construct in relation to a multifaceted conceptualization of aggressive tendencies. Examining multiple facets of both EI and aggressive tendencies was expected to offer a clearer understanding of the linkages between these two domains as a possible basis for refining treatment of male domestic violence offenders.

## Emotional Intelligence

EI denotes a set of abilities and propensities regarding the perception, management, and utilization of emotions in the self and others (Cherniss 2010; Matthews et al. 2002, 2004; Mayer et al. 1999; Petrides and Furnham 2003). It has come to be conceptualized in two ways. Ability-based models consider EI as a capacity measurable using right and wrong answers,

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whereas trait-based (or “mixed”) approaches treat EI as a tendency or willingness to engage in emotion perception and management, permitting assessment by way of self-report (Petrides and Furnham 2001, 2003). The trait-based model assesses one’s typical level of EI, whereas ability EI is better framed in terms of maximal levels. While there is ongoing debate over the relative merits of ability- versus trait-based models of EI (Lievens and Chan 2010; Zeidner et al. 2008), and both can be measured in a unidimensional or multidimensional framework, the trait approach has been suggested as most appropriate for capturing the subjective, cross-situational nature of emotional experiences (Austin 2004; Petrides and Furnham 2003). The current study relied on a trait-based measure targeting Salovey and Mayer’s (1990) original model of EI (Tett and Fox 2006; Tett et al. 2005), which includes six core facets and four applications or proximal outcomes. Our focus here was on the six core dimensions: Recognition of Emotion in the Self, Regulation of Emotion in the Self, Recognition of Emotion in Others, Regulation of Emotion in Others, Empathy, and Nonverbal Emotional Expression (see Table 1).

### EI and Partner Aggression

Past research has demonstrated links between overall EI and interpersonal problems (Bar-On 2000). Couples lower on EI, for example, tend to experience greater conflict (Brackett et al. 2005), and men who are violent in intimate relationships have lower EI than men in the general population (Winters et al. 2004). Further, multiple measures of EI significantly correlate with anger, hostility, and physical aggression (Gardner and Qualter 2010).

Notably, most EI research in this and other areas has been undertaken using global EI measures. Broad measures constrain understanding of complex phenomena by obscuring finer-tuned linkages operating at the facet level (Tett et al.

2003). Examining how EI components relate individually with relevant criteria offers potentially important insights into the role of EI in partner aggression.

The multidimensionality of EI is supported both conceptually (e.g., Bar-On 1997; Mayer and Salovey 1997; Salovey and Mayer 1990) and empirically (Barchard and Christensen 2007; Fan et al. 2010). Tett et al. (2005), for example, identified distinct trait-EI components correlating with distinct life satisfaction facets. Joseph and Newman (2010) reported meta-analytic evidence in support of a cascading model of EI facets in predicting job performance. Freudenthaler and Neubauer (2005) found that interpersonal and intrapersonal components of EI show distinct and meaningful patterns of relations with assorted personality traits and cognitive ability. A multidimensional understanding of EI affords more nuanced prediction of valued outcomes beyond that afforded by global EI measurement. Several distinct EI facets (e.g., emotional self-regulation, empathy) bear consideration as predictors of men’s aggressive tendencies toward their partners.

An EI facet often studied independently of other components is emotional self-regulation. Particularly relevant in emotionally arousing situations (Tett et al. 2005), emotional regulation in the self has direct relevance to aggressive tendencies. Those with a diminished ability to control their own emotions, including anger, are likely to have a greater tendency to engage in aggressive behavior (Robertson et al. 2012). Others may act aggressively in a maladaptive attempt to decrease (regulate) negative emotions, including anger (Bushman et al. 2001), sadness, and anxiety (Jakupcak 2003). Although specific causal mechanisms may vary between individuals, difficulties in emotion regulation and self-regulation more broadly have been associated with increased aggression in general (Cohn et al. 2010; DeWall et al. 2007; Finkel et al. 2009) and with partner aggression in particular (e.g., Gratz and Roemer 2004).

**Table 1** Six core facets of emotional intelligence

Label	Abbreviation	Definition	Sample item
Recognition of emotion in the self	RecSlf	Being in touch with one’s feelings and describing those feelings in words	If I am upset, I know the cause of it.
Regulation of emotion in the self	RegSlf	Controlling one’s own emotional states, particularly in emotionally arousing situations	I can keep myself calm even in highly stressful situations.
Recognition of emotion in others	RecOth	Attending to others’ nonverbal emotional cues, such as facial expressions and tone of voice	I can tell how people are feeling even if they never tell me.
Regulation of emotion in others	RegOth	Managing others’ emotional states, particularly in emotionally arousing situations	Usually, I know what it takes to turn someone else’s boredom into excitement.
Empathy	Emp	Understanding others’ emotions by relating them to one’s own experiences	I am sensitive to the feelings of other people.
Nonverbal emotional expression	NvExp	Communicating one’s feelings to others through bodily (i.e., nonverbal) expression	I like to hug those who are emotionally close to me.

Adapted from Table 1 of Tett et al. (2005)

Numerous self-report studies in undergraduate populations have found that men's difficulties in emotion regulation relate to physical and verbal aggression toward intimate partners (Gratz et al. 2009; Gratz and Roemer 2004; Harper et al. 2005; Shorey et al. 2011). For example, in a daily diary study of newlyweds, McNulty and Hellmuth (2008) found that men more variable in negative emotion were more likely to be aggressive toward their wives. Although the relationship between difficulties in emotion regulation and aggression appears to be well-established in non-clinical and student populations, only one known study has examined this association in a clinical sample of male batterers (Tager et al. 2010). The current study sought to replicate this finding and extend consideration to other aspects of emotional functioning in men's aggressive tendencies.

A second facet of emotional intelligence that has been studied extensively with regard to aggression is empathy. Tett and colleagues (2005) defined empathy as "understanding others' emotions by relating them to one's own experiences" (p. 860). Meta-analyses have shown significant negative relationships between empathy and aggression (Miller and Eisenberg 1988) and offending (Jolliffe and Farrington 2004). In particular, low perspective taking, a cognitive aspect of empathy (Davis 1983), has been related to offending (Jolliffe and Farrington 2004) and aggressive tendencies, especially under conditions of moderate threat (Richardson et al. 1994). Diminished capacity for empathy also appears to increase the risk of physical and verbal aggression directed at intimate partners, as demonstrated in longitudinal studies of adolescents (McCloskey and Lichter 2003), community couples (Péloquin et al. 2011), and male batterers (Covell et al. 2007). In addition, men who are violent in relationships are less accurate in interpreting their female partners' emotions (conceptualized as diminished empathic accuracy) than non-violent men (Clements et al. 2007).

Recently, it has been suggested that empathy and emotion regulation may be interrelated. Specifically, Decety (2010) proposed that emotion regulation is one of three key components of empathy that can be distinguished by relevant neural circuitry and developmental processes. Similarly, Schipper and Petermann (2013) suggested that deficits in empathy (marked by either diminished or extremely high empathy) might contribute to difficulties in emotion regulation on the basis of co-occurrence of deficits and similar neural mechanisms. In support of this, deficits in empathy have been related to alexithymia, or difficulty in naming one's personal emotional experiences (Moriguchi et al. 2006). Alexithymia, in turn, has itself been associated with various problems of self-regulation, such as gambling, alcohol use, and disrupted eating patterns (e.g., Beadle et al. 2013; Lumley and Roby 1995; Shishido et al. 2013). Further, the ability to identify one's emotions has been considered a prerequisite for emotional self-regulation in clinical settings (Cloitre et al. 2006).

However, emotion regulation and empathy have rarely been empirically examined simultaneously, and no known studies have assessed the relative roles of these two facets of EI in relation to intimate partner aggression.

In addition to emotional self-regulation and empathy, other factors identified as facets of EI offer potentially unique contributions to understanding and predicting men's aggression toward women. The nature of those contributions, however, is unclear. Nonverbal emotional expression is a critical part of communication, informing others of one's intentions and providing nonverbal feedback on other's words and actions (Keltner and Haidt 1999; Schröder-Abé and Schütz 2011). Lack of nonverbal emotional expression (i.e., keeping anger "in") could exacerbate interpersonal conflict, leading to violence, or it might diminish opportunity for a partner to engage in provocative discourse.

Recognition and regulation of emotion in one's partner (as opposed to oneself) offer similarly equivocal rationales with respect to aggressive tendencies. On the one hand, such qualities could confer a sense of connection and control toward alleviating violent impulses. For example, sensing when a partner is getting angry offers the chance to defuse that anger by using a calm voice. Conversely, hypersensitivity to a partner's anger or guilt could trigger escalation toward violence, and regulating a partner's emotions could be beneficial or detrimental, depending on the emotions targeted for manipulation by the individual's actions.

Recognition of emotion in the self might also work in either direction: high standing could serve self-regulation toward reducing aggressive tendencies or it could fuel such tendencies, supporting personal justification for aggressive intentions (e.g., "You made me angry and so deserve to be punished"). How emotional self-recognition, nonverbal emotional expression, and recognizing and regulating emotions in others might contribute to aggressive tendencies in men is uncertain. The current study offered the opportunity to explore such contributions within a multidimensional conceptualization of EI.

### Aggressive Tendencies

Our research design did not permit direct assessment of individual differences in aggressive behavior toward a partner. Instead, we focused on four personal attributes closely tied to aggressive behavior and refer to them collectively as aggressive tendencies. Two of the attributes, physical aggression and verbal aggression, are self-report proxies of directly observable aggression. The other two attributes, anger and hostility, are established precursors. Dispositional anger is a tendency toward an emotional, cognitive, and physiological negative and uncomfortable response, while hostility is considered an attitudinal predisposition toward aggression (Eckhardt et al. 1997). Anger can contribute to aggression in

multiple ways (Anderson and Bushman 2002). For example, it can make one feel justified in acts of aggression, reduce otherwise inhibiting cognitive responses, prime cognitive scripts for future aggression, and increase physiological arousal serving aggression. Anger is thus a complex contributor to aggressive behavior.

Empirical studies have shown that both anger and hostility in men are positively related to violence in general (Holtzworth-Munroe et al. 2000) and to intimate partner violence in particular (Norlander and Eckhardt 2005). Global EI relates negatively to anger and hostility (Gardner and Qualter 2010) and predicts hostility after controlling for the Big Five personality factors (i.e., Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness; Petrides et al. 2007). Anger and hostility are closely related to partner aggression, and relationships among EI, anger, and hostility bear further exploration, particularly with respect to EI as a multidimensional construct domain. Moreover, research has shown that, although related, anger, hostility, physical aggression, and verbal aggression are distinct dimensions individually deserving of attention (Bernstein and Gesn 1997).

## Present Study

The few studies reporting relationships between EI and anger, hostility, and partner aggression (Gardner and Qualter 2010; Winters et al. 2004) have suggested that EI may offer unique insights into intimate partner aggression and possibly effective interventions. Lacking in prior research, however, is an examination of multidimensional linkages between EI and aggressive tendencies. Despite being widely recognized as a multidimensional construct both conceptually (e.g., Salovey and Mayer 1990) and empirically (Tett et al. 2005), EI is most often assessed as a single, general construct (Zeidner et al. 2008). A multidimensional conceptualization of EI, however, offers a potentially more nuanced understanding of aggressive tendencies in domestic violence offenders, with possible implications for refining intervention strategies. Accordingly, the primary aim of the present study was to compare multiple distinct EI facets in relation to multiple facets of aggressive tendencies in an effort to pinpoint more precisely the role of EI in men with a history of partner aggression.

Consistent with prior research, we expected that regulation of emotion in the self would correlate negatively with aggressive tendencies (Hypothesis 1), and empathy would also correlate negatively with aggressive tendencies (Hypothesis 2). Further, we anticipated that regulation of emotion in the self and empathy would each uniquely predict aggressive tendencies (Hypothesis 3). Finally, we expected that aggressive tendencies would be predicted incrementally (beyond emotional self-regulation and empathy) by (a) recognition of emotion in

the self, (b) recognition of emotion in others, (c) regulation of emotion in others, and (d) nonverbal emotional expression (Hypothesis 4). Given the noted equivocality of the latter four EI facets as potentially diminishing versus exacerbating aggressive tendencies, Hypotheses 4a to 4d were assessed using two-tailed tests. Through exploratory analyses, we also examined whether results for all hypotheses vary across the four dimensions of aggressive tendencies (i.e., anger, hostility, verbal aggression, physical aggression).

Finally, in light of the multidimensionality of both EI and aggressive tendencies, we explored whether different combinations of EI scales predict different combinations of aggression variables. A statistical method especially suited to answering such questions is *canonical correlation* (CC; cf. Tabachnick and Fidell 2007). Analytical methods are described in detail below, but here we note that, unlike standard regression in which there is a single criterion measure, CC permits identification of multiple distinct combinations of predictors in relations with correspondingly distinct combinations of criteria. CC is a generally underutilized technique with potential to advance understanding of overlapping predictor-criterion domains (Tett et al. 2003). The possibility that EI and aggression might afford multiple patterns of intersection offers to expand understanding of the role of EI in partner aggression, which is the overriding aim of the current undertaking.

## Methods

### Participants

Participants were a forensic/clinical sample of male domestic violence offenders court-ordered to attend a 52-week treatment program in the Midwest USA. No exclusion criteria were employed in the current study; all men mandated to the treatment were asked to participate. Of the 351 men who completed at least some of the measures, 202 had insufficient data, often due to missing a day of treatment. An infrequency scale on the EI measure, described below (e.g., “I have visited the North Pole”), allowed detection of non-purposeful responding, a major concern with clinical populations (McGrath et al. 2000). Consistent with recommendations in the EI test manual, cases with infrequency scores at or above 3 ( $N=17$ ) were dropped. Finally, Mahalanobis distance identified one multivariate outlier, which was also dropped, leaving a usable  $N$  of 131.

Comparisons between the 202 cases offering insufficient data and the 131 retained cases yielded non-significant results for race ( $\chi^2=7.76$ ,  $df=5$ ,  $p=.26$ ), relational status ( $\chi^2=5.42$ ,  $df=4$ ,  $p=.37$ ), and age ( $t=1.14$ ,  $df=321$ ,  $p=.26$ ). A significant difference was obtained for employment status ( $\chi^2=18.67$ ,  $df=5$ ,  $p=.01$ ), with partial responders being unemployed or

self-employed at greater rates compared to complete responders. This may reflect attrition due to cost of treatment (i.e., unemployed and self-employed clients may have found treatment costs more burdensome, leading them to skip sessions and thereby assessment windows). More importantly, MANOVA results comparing partial and complete responders on the four aggression tendency criteria were non-significant,  $F(4, 334)=0.29$ ,  $p=.89$ , Wilks' Lambda=0.99, suggesting lack of bias in the useable data as representative of the offender population with respect to aggressive tendencies.

Ages in the useable sample ( $N=131$ ) ranged from 20 to 62 years ( $M=32.46$ ,  $SD=8.94$ ). Participants were mostly Caucasian (53 %), African American (25.2 %), and Native American (18.5 %), with the rest being Hispanic or mixed. With regard to education, 36 % of participants completed high school or a GED, and 28 % reported some college. In addition, most (51 %) were employed full-time. Information on criminal history was gathered via self-report. Prior to the study and including their domestic violence offense, 94.8 % of participants had been to jail and 12.7 % to prison. The number of times in jail ranged from 0 to 20 ( $M=3.19$ ,  $SD=3.41$ ), and number of times in prison ranged from 0 to 4 ( $M=0.38$ ,  $SD=0.85$ ). The average number of domestic violence arrests was 1.06 ( $SD=0.69$ ), average involvement in domestic violence-related police calls was 1.21 ( $SD=0.96$ ), and average number of times arrested for illegal substance abuse was 1.07 ( $SD=1.58$ ).

## Procedure

Trained treatment providers introduced the study to potential participants at the intake of a court-ordered batterer intervention program. Research packets, including demographics and measures described below, were administered as part of a larger battery, which took approximately one hour to complete. Data were de-identified prior to being transferred to the research group. Assessments were completed over two sessions separated by 3 weeks to allow time for other intake processes to be completed.

## Measures

**Demographic Items** A brief self-report survey assessing basic demographic data and criminal history was created by the host clinical agency and incorporated into the larger questionnaire packet. Ordinal-level items were generated to ask participants about education level, referral source (e.g., self versus court), and probationary status. Participants were also asked to report the number of times they had been convicted of felonies, drug charges, and/or been incarcerated.

**Aggression Questionnaire (AQ)** The AQ (Buss and Perry 1992), derived from Buss and Durkee's (1957) Hostility

Inventory, is a widely used measure of aggression. The AQ consists of four scales comprising 29 items, including Physical Aggression (9 items; the tendency to physically harm others), Verbal Aggression (5 items; the tendency for verbal argumentativeness and abuse), Anger (7 items; the tendency towards physiological arousal and preparation for aggression), and Hostility (8 items; the tendency for antagonistic, suspicious, and paranoid attributions). Items are scored on a 5-point Likert-type scale (1 = *not at all*; 5 = *to a very great extent*) such that higher scores indicate higher levels of aggressive tendencies. Test-retest reliabilities for the scales over a nine-week period are reported to be between 0.72 and 0.80, with internal consistency estimates (alpha) between 0.72 and 0.85 (Buss and Perry 1992). In the present study, alpha ranged from 0.74 to 0.90 (see Table 2).

The AQ allows researchers to capture multiple conceptualizations of aggressive tendencies. The original AQ is generalized with respect to the intended target of aggression (e.g., "Once in a while I can't control the urge to strike another person"). Items were contextualized in the present study to reflect tendency for aggression directed toward an intimate partner (e.g., "Once in a while I can't control the urge to strike my partner"), and the scale's two reversed-keyed items were rewritten by the host treatment facility to be positively-keyed in an effort to improve item clarity for the current population. As a precedent, Farrar and Krcmar (2006) showed that a version of the AQ reworded to capture states instead of traits (e.g., "When *this person* annoyed me . . ." versus "When *people* annoy me . . .") yielded stronger effects in response to an aggression prime. Farrar and Krcmar also found that this reworded version showed construct validity as a state measure and high internal reliability (alphas ranging from 0.80 to 0.92). Such "frame-of-reference" modifications tend to improve test validity by standardizing item interpretation (Schmit et al. 1995). The original AQ has demonstrated adequate convergent validity with violent behaviors, evidenced by significant positive correlations with measures of direct aggressive acts (e.g., "I threw an object at someone in the past 6 months"; Archer and Webb 2006; Harris 1996).

**Multidimensional Emotional Intelligence Assessment (MEIA)** The MEIA (Tett et al. 2005) consists of 116 items targeting the 10 facets of trait-EI identified by Salovey and Mayer (1990). Six core subscales were examined in this study: Recognition of Emotion in the Self (RecSlf), Regulation of Emotion in the Self (RegSlf), Recognition of Emotion in Others (RecOth), Regulation of Emotion in Others (RegOth), Empathy (Emp), and Nonverbal Emotional Expression (NvExp). Each of these subscales contains 12 items. Definitions and sample items for the core scales are provided in Table 1. Previous research (Tett et al. 2005) supports the psychometric properties of the MEIA, including good internal consistency reliabilities (all >0.73, median=

**Table 2** Descriptive statistics, zero-order correlations, and internal reliabilities ( $N=131$ )

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6	7	8	9
1. RecSlf	4.29	0.73	0.73									
2. RegSlf	4.10	0.98	0.88	0.69**								
3. RecOth	4.13	0.76	0.76	0.41**	0.30**							
4. RegOth	4.30	0.75	0.76	0.49**	0.43**	0.56**						
5. NvExp	3.81	0.77	0.74	0.51**	0.49**	0.27**	0.52**					
6. Emp	4.12	0.82	0.81	0.23**	0.18*	0.37**	0.53**	0.38**				
7. PhyAgg	1.70	0.72	0.85	-0.17*	-0.32**	-0.14	-0.16	-0.12	-0.25**			
8. VerAgg	2.27	0.72	0.74	-0.06	-0.22*	0.07	-0.05	-0.07	-0.21*	0.49**		
9. Anger	1.71	0.79	0.90	-0.37**	-0.49**	-0.11	-0.29**	-0.25**	-0.26**	0.58**	0.60**	
10. Host	1.86	0.78	0.85	-0.36**	-0.39**	-0.15	-0.33**	-0.35**	-0.22**	0.40**	0.49**	0.69**

*RecSlf* recognition of emotions in self, *RegSlf* regulation of emotions in Self, *RecOth* recognition of emotions in others, *RegOth* regulation of emotions in others, *NvExp* nonverbal emotional expression, *Emp* empathy, *PhyAgg* physical aggression, *VerAgg* verbal aggression, *Host* hostility

\* $p < .05$ ; \*\* $p < .01$

0.80), test-retest reliabilities (all  $> 0.67$ , median=0.76), correlational differentiation among the six core dimensions, and convergent and discriminant validity with respect to linkages with other variables, including discrimination from social desirability response set. In the present study, internal consistency estimates (alpha) ranged from 0.73 to 0.88 (see Table 2). Items are scored from 1 (*strongly disagree*) to 6 (*strongly agree*), with half the items per scale negatively keyed to control acquiescence response bias.

## Analyses

In addition to means, standard deviations, and internal consistency estimates (i.e., alphas) per scale, correlations were computed among the 10 targeted variables (six trait-EI plus four aggressive tendencies). Hierarchical regression was used per aggression criterion to assess the incremental validity of (a) empathy (*Emp*) over self-regulation (*RegSlf*), and (b) the remaining four core trait-EI scales (*RecSlf*, *RecOth*, *RegOth*, *NvExp*) over the two noted scales. Finally, in light of the multidimensionality of both trait-EI and aggressive tendencies as assessed here, canonical correlation (CC) was used to explore the possibility of multiple variable configurations linking the two domains. The procedure works by creating a weighted linear sum of variables (i.e., canonical variate) on each side of the equation such that the correlation between the two variates (i.e., the canonical correlation; *R<sub>c</sub>*) is as strong as possible given the data at hand (Thompson 2000). In addition to offering a uniquely nuanced solution connecting differentially weighted independent and dependent variables, CC permits extraction of multiple canonical correlations, each derived orthogonally to earlier correlations. Identifying multiple combinations of trait EI and aggression-related variables (i.e., multiple independent and dependent variates) could offer unique insights into the role of EI in partner aggression.

## Results

Descriptive statistics and scale intercorrelations are reported in Table 2. Several points bear noting. First, as in past research using the AQ in offender populations (e.g., Williams et al. 1996), the mean aggression tendency scores were lower than those in the normative college student sample (Buss and Perry 1992), which may reflect participants' attempts to present a positive image. Threats to predictive validity were unclear, however, as rank order may be largely retained despite overall downward bias (Mills and Kroner 2006).

Second, correlations among the four aggression tendency variables (range=0.40 to 0.69;  $M=0.54$ ) were somewhat stronger than those reported in previous research, which have ranged from 0.25 to 0.48, with mean=0.40 (Buss and Perry 1992). Correlations were also strong among the six trait-EI scales (range=0.18 to 0.69;  $M=0.42$ ), which compares to a range of 0.06 to 0.61, with mean=0.32, found in previous research (Tett and Fox 2006). The reason for the inflated correlations is unclear. One possibility is socially desirable responding due to the evaluative nature of the assessment setting (Tett and Simonet 2011). With such high correlations, it is important to determine whether multicollinearity interferes with the ability to distinguish accurately between trait-EI and aggressive tendencies as multidimensional domains. To test this, we calculated tolerance (i.e.,  $1 - \text{the squared multiple } R \text{ regressing a single targeted variable onto the remaining variables from the same set}$ ; possible range=0 to 1.0; cf. Tabachnick and Fidell 2007, p. 90) for all variables in each of the predictor and criterion sets. Multicollinearity becomes more problematic as tolerance approaches zero. In the present study, tolerance values for the six predictors ranged from 0.45 to 0.68, and for the four aggression tendency variables from 0.38 to 0.64. These values indicate that multicollinearity is not especially

problematic in the current data and support proceeding with the main analyses.

With regard to hypothesis testing, correlations revealed that regulation of emotion in the self is negatively correlated with aggressive tendencies ( $r$  range = -0.22 to -0.49, all  $p < .05$ ), in support of Hypothesis 1. As predicted by Hypothesis 2, empathy also correlated negatively with aggressive tendencies ( $r$  range = -0.21 to -0.26, all  $p < .05$ ). Hierarchical regressions results, shown in Table 3, support Hypothesis 3, as both RegSlf and Emp emerged as significant and unique predictors across all four aggressive tendency variables. However, limited support was found for Hypothesis 4. Specifically, the four exploratory EI dimensions did not add uniquely to the prediction of aggressive tendencies. Of note, while RegSlf and Emp generally showed the largest zero-order correlations and beta weights, similar patterns of EI-AQ relationships were found across scales; this suggests limited value in differentiating among the four aggressive tendencies with respect to the role of trait-EI.

Canonical correlation results are reported in Table 4, with main findings depicted in Figures 1 and 2. As shown, two significant canonical variate pairs were extracted:  $R_{c1} = 0.55$ , Wilks' Lambda = 0.56,  $F(24, 423.33)$ ,  $p < .01$ , and  $R_{c2} = 0.39$ , Wilks' Lambda = 0.80,  $F(15, 337.19)$ ,  $p = .02$ . Redundancy analysis (cf. Tabachnick and Fidell 2007, pp. 579–580) indicated that the two aggression canonical variates account for 15 % of the variance in the MEIA scales, whereas the two MEIA canonical variates account for 19 % of the variance in the AQ scales. Both pairs of variates permit substantive interpretation. Specifically, canonical loadings showed the first

canonical variate on the trait-EI side was identified primarily by RegSlf (0.92), followed by RecSlf (0.77), RegOth (0.63), NvExp (0.57), and Emp (0.48); on the aggressive tendency side, it was identified primarily by Anger (-0.96), followed by Hostility (-0.81). This first pair of canonical variates, with strongly definitive loadings for most trait-EI facets and two of the aggressive tendency variables, revealed an overall negative relationship between core trait-EI and the more affective and cognitive components of aggressive tendencies (i.e., anger and hostility).

The second canonical variate pair suggested a subtler pattern of linkages, identified on the trait-EI side primarily by NvExp (0.45), RecSlf (0.43), RegOth (0.42), and RecOth (0.36), and, on the aggressive tendency side, by tendency for Verbal (0.68) and Physical Aggression (0.46). These relationships indicate that, despite an overall negative relationship between trait-EI and aggressive tendencies (as per the first canonical correlation), and contrary to mainstream expectations, higher standing on several trait-EI facets predicts higher levels of men's aggressive tendencies toward their partners.

### Discussion

The present study sought to assess the potential of multiple trait-EI dimensions to further prediction and understanding of multiple aggression-related variables in male offenders of domestic violence. Zero-order correlations largely confirmed the

**Table 3** Hierarchical multiple regressions for AQ subscales with RegSlf (Step 1), Emp (Step 2), and additional EI scales (Step 3)

Predictor	Physical aggression				Verbal aggression				Anger				Hostility			
	R	$\Delta R^2$	$\beta$	<i>spr</i>	R	$\Delta R^2$	$\beta$	<i>spr</i>	R	$\Delta R^2$	$\beta$	<i>spr</i>	R	$\Delta R^2$	$\beta$	<i>spr</i>
<i>Step 1</i>	0.32	0.10**			0.22	0.05*			0.49	0.24**			0.39	0.16**		
RegSlf			-0.32**	-0.32			-0.22**	-0.22			-0.49**	-0.49			-0.37**	-0.37
<i>Step 2</i>	0.38	0.04*			0.28	0.03*			0.52	0.03*			0.42	0.02*		
RegSlf <sup>a</sup>			-0.29**	-0.28			-0.19*	-0.19			-0.45**	-0.45			-0.37**	-0.37
Emp <sup>a</sup>			-0.19*	-0.19			-0.17*	-0.17			-0.18*	-0.18			-0.15*	-0.22
<i>Step 3</i>	0.40	0.02			0.38	0.07			0.54	0.02			0.46	0.04		
RegSlf <sup>a</sup>			-0.41**	-0.29			-0.37**	-0.26			-0.45**	-0.35			-0.22**	-0.37
Emp <sup>a</sup>			-0.26*	-0.21			-0.30*	-0.25			-0.21*	-0.20			-0.07	-0.22
RecSlf <sup>b</sup>			0.10	0.07			0.12	0.08			-0.09	-0.07			-0.11	-0.36
RecOth <sup>b</sup>			-0.03	-0.02			0.19	0.16			0.15	0.14			0.10	-0.15
RegOth <sup>b</sup>			0.06	0.04			0.07	0.04			-0.07	-0.06			-0.15	-0.33
NvExp <sup>b</sup>			0.10	0.08			0.09	0.07			0.09	0.08			-0.11	-0.35

$N = 131$ . *spr* semi-partial correlation coefficient, *RecSlf* recognition of emotion in self, *RegSlf* regulation of emotion in self, *RecOth* recognition of emotion in others, *RegOth* regulation of emotion in others, *NvExp* nonverbal emotional expression, *Emp* empathy

\* $p < .05$ ; \*\* $p < .01$

<sup>a</sup> one-tailed

<sup>b</sup> two-tailed

**Table 4** Summary of canonical correlation analysis ( $N=131$ )

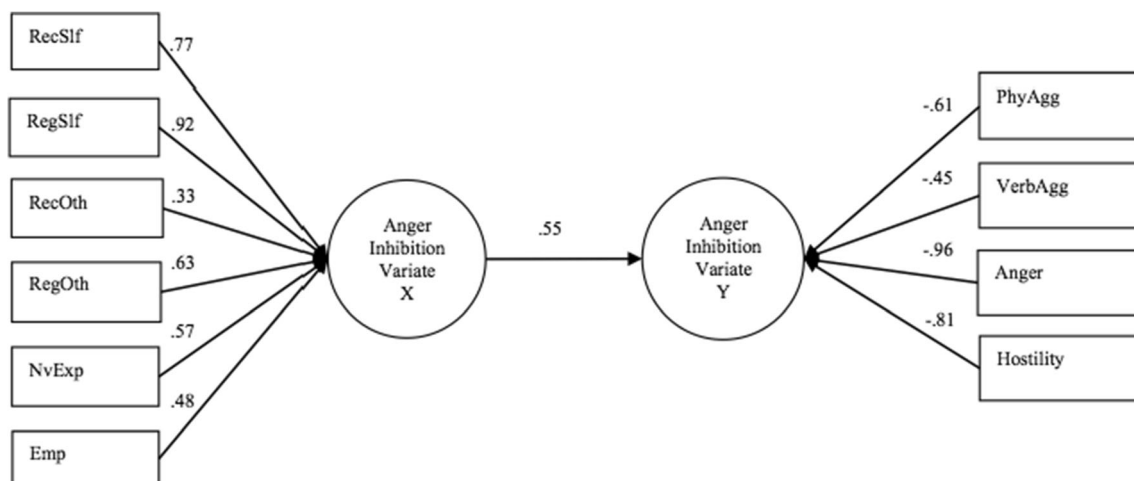
Variable	First variate		Second variate		$h^2$
	$r_1$	$r_1^2$	$r_1$	$r_1^2$	
<b>MEIA</b>					
RecSlf	0.77	59 %	0.43	18 %	77 %
RegSlf	0.92	85 %	-0.03	0 %	85 %
RecOth	0.33	11 %	0.36	13 %	24 %
RegOth	0.63	40 %	0.42	18 %	58 %
NvExp	0.57	32 %	0.45	20 %	53 %
Emp	0.48	23 %	-0.25	6 %	29 %
<i>pv</i>		42 %		13 %	Total=55 %
<b>Aggression</b>					
PhyAgg	-0.61	37 %	0.46	21 %	58 %
VerbAgg	-0.45	20 %	0.68	46 %	66 %
Anger	-0.96	92 %	0.24	6 %	98 %
Hostility	-0.81	66 %	-0.24	6 %	71 %
<i>pv</i>		54 %		20 %	Total=74 %
$R_c^2$		30 %		15 %	

$r_1$  canonical loadings,  $r_1^2$  squared canonical loadings,  $h^2$  canonical communality coefficient, *pv* proportion variance extracted within-variate,  $R_c^2$  squared canonical correlation coefficient, *RecSlf* recognition of emotion in self, *RegSlf* regulation of emotion in self, *RecOth* recognition of emotion in others, *RegOth* regulation of emotion in others, *NvExp* nonverbal emotional expression, *Emp* empathy; *PhyAgg* physical aggression, *VerbAgg* verbal aggression

expected negative relationships between emotional self-regulation and aggression tendencies, as well as between empathy and aggression tendencies, thus supporting Hypotheses 1 and 2, and replicating earlier findings in this area (Gardner and Qualter 2010; Winters et al. 2004). Hypothesis 3 was also supported in that emotional self-regulation and empathy were

each unique predictors of aggressive tendencies; although the two variables have been linked conceptually (Schipper and Petermann 2013), they appear to function separately in predicting aggressive tendencies. Contrary to Hypotheses 4a through d, other facets of EI were not unique predictors of aggressive tendencies after controlling for emotional self-regulation and empathy. Notably, Table 1 shows some significant bivariate associations between the secondary EI facets and aggressive tendencies (e.g., *RecSlf* correlates  $-0.37$  and  $-0.36$  with anger and hostility, respectively). Lack of support for Hypotheses 4a to d suggests emotional self-regulation and empathy are the main carriers of the secondary trait-EI effects. Both emotional self-regulation and empathy appear to be especially important facets of EI in predicting and understanding men's aggressive tendencies toward their partner.

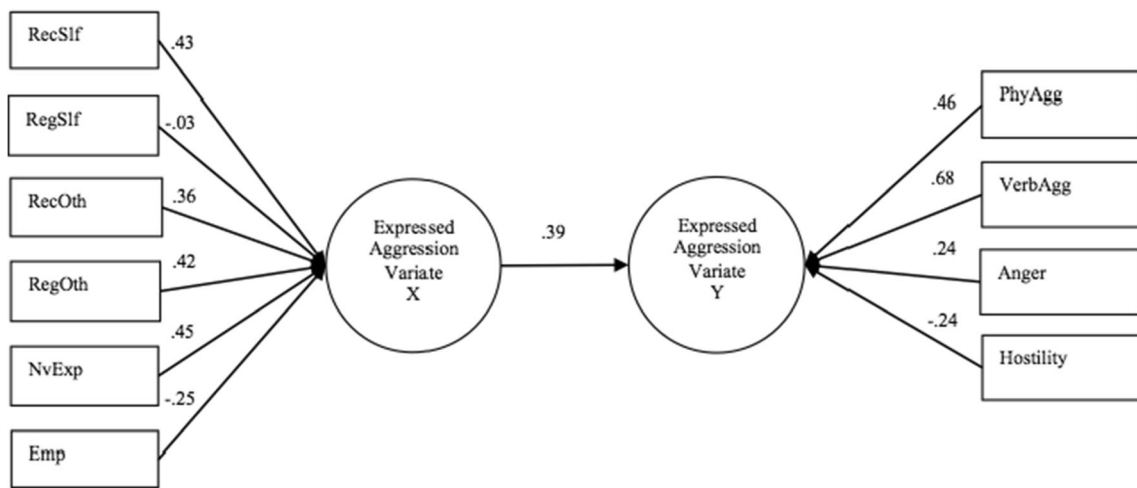
The results of the canonical correlation analysis offer a refined understanding of the EI-aggression linkage. The overall negative relationship between variable sets is clearly reflected in the first canonical correlation ( $R_{c1}=0.55$ ), with uniformly positive loadings on the trait-EI side of the equation and uniformly negative loadings on the aggression side (canonical correlations, like multiple  $R$ s, are always positive; relationship directionality is indicated in the loadings on the respective variates). Extending previous research assessing EI and aggression as global constructs, current results suggest that the primary drivers of the general negative relationship are emotional self-regulation on the EI side and both anger and hostility on the side of aggression tendency. The remaining facets on both sides contributed to the general negative relationship, but secondarily. We labeled the first trait-EI canonical variate as “Anger Inhibition”; domestic violence offenders who are better able to inhibit or regulate negative emotions may feel less anger and hostility toward their partner.



**Fig. 1** MEIA and AQ subscale loadings on the anger inhibition variates ( $R_{c1}$ ). *RecSlf* recognition of emotion in self, *RegSlf* regulation of emotion in self, *RecOth* recognition of emotion in others, *RegOth* regulation of

emotion in others, *NvExp* nonverbal emotional expression, *Emp* empathy, *PhyAgg* physical aggression, *VerbAgg* verbal aggression





**Fig. 2** MEIA and AQ subscale loadings on the expressed aggression variates ( $R_{c2}$ ). *RecSlf* recognition of emotion in self, *RegSlf* regulation of emotion in self, *RecOth* recognition of emotion in others, *RegOth*

regulation of emotion in others, *NvExp* nonverbal emotional expression, *Emp* empathy, *PhyAgg* physical aggression, *VerbAgg* verbal aggression

Offering an interesting counterpoint to the first canonical correlation, the second canonical correlation, with attendant loadings, suggests a more nuanced combination of trait-EI facets predictive of certain aspects of aggressive tendencies. Specifically, controlling for the overall negative EI-aggression relationship (as per the first canonical correlation), participants higher on nonverbal expression (*NvExp*), recognition of emotion in the self (*RecSlf*), regulation of emotion in others (*RegOth*), and recognition of emotion in others (*RecOth*) reported being more likely to be physically and verbally aggressive. Reporting greater influence on others’ emotions, as per higher standing on *RegOth*, suggests that manipulative tendencies per se are not necessarily beneficial in intimate partner relationships; the observed result may reflect high scorers on *RegOth* acknowledging the effects of their aggressive acts on others. The definitive loading for nonverbal expression complements this interpretation, supporting a link between aggressive tendencies and greater behavioral expressivity. The loading of *RecSlf* on  $R_{c2}$  suggests that recognizing one’s own emotions may contribute to overt aggression. Alternatively, those higher on *RecSlf* may simply be more aware of their aggressive tendencies, suggestive of heightened self-insight. The negative loading for hostility on the second canonical variate (–0.24) also points to enhanced insight, implying less suspicious and paranoid attributions toward the partner.

Notably, empathy is the only core trait-EI facet loading negatively on the second independent variable canonical variate (–0.25), suggesting especially low empathy as a marker for  $R_{c2}$ . The overall picture painted by the second canonical correlation is of someone who realizes and to some extent even accepts that he has anger management problems that directly affect his partner, but who feels little remorse when acting out his aggressive impulses. We labeled the second EI canonical variate as “Expressed Aggression” with deference

to the expressivity reflected in nonverbal expression and regulation of emotion in others and the behavioral focus of the two dominant dependent variable contributors. Whether heightened *RecSlf* affords an advantage in treatment, and the role of low empathy in this regard, are matters for further study: being able to identify one’s own emotions may facilitate treatment, but possibly only in those also high in empathy.

**Research Implications**

Derivation of two canonical correlations and differential zero-order correlations within and between the trait-EI and aggression tendency variable sets support the multidimensionality of the two domains. That trait-EI facets showed both negative and positive relations with aggressive tendencies (the latter evident after controlling for the former) strongly underscores the limits of global EI measurement. Despite the convenience of general measures, aggregation across distinct facets can obfuscate potentially important differences among facets in their relations with relevant outcomes. A particularly interesting line of future research would be to consider aggression as an outcome of specific combinations of partner EI profiles. For example, is partner aggression especially likely when both the perpetrator and victim are low in empathy, when one is low on recognition of emotions in the self and the other low on recognition of emotions in others, or when one is low on regulation of emotions in the self and the other low on regulation of emotions in others? Such questions can only be understood and tested within a multidimensional EI framework.

Similar questions derive with respect to multidimensionality on the aggression side of the linkage. Notably, although separate regressions of the four aggressive tendency variables as dependent variables yielded the same combination of EI predictors (self-regulation and empathy), distinctions among

the aggressive tendencies are evident in the two canonical correlations, anger and hostility loading dominantly on the first dependent variable canonical variate and physical and verbal aggression loading dominantly on the second. Such nuanced results would remain completely hidden if not for reliance on a multidimensional understanding of aggressive tendencies and an analytical method (i.e., canonical correlation) sensitive to hierarchical complexities operating at the facet level. We urge assessment of EI and aggressive tendencies as multidimensional domains in future studies in this and related areas.

To overcome limits of self-report in measurement of trait-EI and aggressive tendencies (e.g., due to socially desirable responding), future studies might seek to examine the relationships between EI and expressed aggression in controlled lab settings through observational assessments such as the Articulated Thoughts during Simulated Situations paradigm (ATSS; Davison et al. 1983) or the Taylor Aggression Paradigm (Taylor 1967). Additional research might seek to understand how such risk factors for partner aggression, including low EI and high aggressive tendencies, relate to behavioral reports of partner aggression as well as recidivism rates. Future studies should also target community, non-treatment-seeking samples as well as female perpetrators to assess the generalizability of current findings.

### Clinical and Policy Implications

This study offers several implications for clinical practice. Training in EI has been shown to have potentially positive effects, including improvements in health and well-being over time (Slaski and Cartwright 2003). Such training, particularly in emotional self-regulation, may be especially beneficial to domestic violence offenders, and we encourage research along those lines. The dual relationship between EI and aggressive tendencies, reflected in the two canonical correlations, suggests further opportunity for specialized treatment. Domestic violence offenders who are more aware of how their outward tendency for aggression is linked to their own characteristics (as per recognition of emotion in the self) and how that aggression affects others (as per regulation of emotion in others) may be better prepared to face the changes needed for improving intimate relationships. Empathy may prove especially relevant in this regard, as those low in empathy may lack the willingness to make good use of those improved EI assets. We urge clinicians to take client empathy into account when considering the implementation of an EI-based intervention for domestic violence. Empathy training has been suggested for violent offenders, but it remains largely untested (Day et al. 2010). In a study of sex offenders, training increased empathy but not the ability to recognize emotions in others (Wastell et al. 2009). How EI training might be applied to clinical

interventions for domestic violence offenders is a matter for continuing research.

### Limitations

As respondents were court-ordered for treatment, caution should be used in generalizing results to community populations, as tendency for partner aggression may vary by population. Further, the homogeneity of the current sample with respect to aggressive tendencies may have led to range restriction. In addition, current results may not generalize to all men arrested for domestic violence offenses, but instead may be more typical of those who regularly attend and complete treatment. Finally, because the sample consisted of court-ordered offenders, social desirability may have led to underreporting of aggressive tendencies and the self-report measures used may have been subject to participant bias, limited recall, or shared method variance.

### Conclusions

The present study aimed to broaden understanding of the relationship between trait-EI and aggressive tendencies toward one's partner. Results suggest greater complexity in this relationship than that afforded by reliance on global measures. Specifically, although EI tends to relate negatively to aggressive tendencies, some facets show positive linkages after accounting for the overall negative effect. These findings highlight the importance of considering EI and aggressive tendencies as multidimensional domains, permitting refined treatments targeting reduction of domestic violence, possibly via EI training. Research is needed to assess the potential benefits of such training in light of the noted positive influences of selected EI dimensions on intimate partner aggression.

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