EMOTIONAL AWARENESS MODERATES THE RELATIONSHIP BETWEEN
CHILDHOOD ABUSE AND BORDERLINE PERSONALITY DISORDER SYMPTOM
DIMENSIONS

BY

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THESIS

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Abstract

Objective: To examine pathways to borderline personality disorder (BPD), focusing on childhood abuse and emotional attention and clarity. **Method:** Among 293 community residents (mean age = 43.1; 53.9% female), measured associations between the BPD symptom dimensions of disturbed relatedness, affective dysregulation, and behavioral dysregulation and (a) childhood abuse (emotional, physical, and sexual); (b) emotional attention and clarity; and (c) negative affect, using structured interviews, the Schedule for Non-Adaptive and Adaptive Personality-2, the Trait Meta Mood Scale, and the Positive and Negative Affect Scale, respectively. **Results:** All forms of childhood abuse were associated with BPD symptom dimensions. Emotional attention and clarity moderated the effects of childhood physical and emotional abuse on behavioral dysregulation and disturbed relatedness. All results held when controlling for negative affect. **Conclusion:** The relations between childhood abuse and BPD are robust. Emotional attention and clarity may help elucidate the links between childhood abuse and BPD.

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Introduction

Borderline personality disorder (BPD) is a complex disorder with impairments in multiple areas of functioning, such as interpersonal relationships, impulsivity, and emotional regulation (Berlin, Rolls, Iverson, 2005; Fossati, Gratz, Maffei, & Borroni, 2013; Powers, Gleason, & Oltmanns, 2013). In addition, behavioral dysregulation for individuals with BPD often manifests in the form of parasuicidal behaviors (e.g., cutting) and maladaptive activities such as substance abuse, unsafe sexual practices, and binge eating (Linehan, 1993). Patterns of intense affective arousal, combined with the problematic habits employed by individuals to reduce heightened emotions, frequently result in debilitating experiences that undermine the quality of life of individuals with BPD.

The results of past research suggest that BPD is best thought of as being multidimensional rather than unitary. Following from a confirmatory factor analysis of BPD symptoms, Sanislow et al. (2002) proposed a three-factor model of BPD in which the diagnostic criteria map onto three symptom dimensions: (a) disturbed relatedness (interpersonal instability, identity disturbance, chronic feelings of emptiness, and stress-related paranoid ideation); (b) affective dysregulation (efforts to avoid abandonment, affective instability, and inappropriate/intense anger); and (c) behavioral dysregulation (impulsivity, suicidal behavior). A later study by Andión et al. (2011) using two different structured interviews replicated this three-factor structure. The present research separately examined the three BPD symptom dimensions described by Sanislow et al. (2002) and later replicated by Andión et al. (2011).

In the current study, we examined the relation between BPD, childhood emotional, physical, and sexual abuse, and emotional awareness. While numerous studies have found associations between childhood abuse and BPD (e.g., Bierer et al., 2003; Elices et al., 2015;

Johnson, Cohen, Chen, Kasen, & Brook, 2006), to our knowledge, no research has examined whether childhood abuse is differentially associated with the three BPD symptom dimensions identified by Sanislow et al. (2002). Thus, our first goal was to examine the relation between childhood abuse and specific BPD symptom dimensions.

The construct of emotional awareness is composed of two facets: emotional attention and emotional clarity (Coffey, Berenbaum, & Kerns, 2003; Gohm & Clore, 2000; 2002). Emotional attention refers to attending to and valuing one's own emotional experiences. Emotional clarity describes the ability to identify one's own emotional experience. Past research has found that emotional awareness is associated with BPD symptoms. Numerous studies have linked difficulties in identifying emotions to multiple BPD symptoms, including affective instability (Hertel, Schütz, & Lammers, 2009; Lizeretti, Extremera, & Rodríguez, 2012), identity disturbance, interpersonal difficulties (Gardner & Qualter, 2009), and impulsivity (Gardner & Qualter, 2009; Velotti & Garofalo, 2015). Importantly, none of the studies examining the associations between emotional clarity and BPD took into account negative affect; this is important because negative affect is related to both BPD (Lobbestael & Arntz, 2015) and emotional clarity (Coffey et al., 2003; Gohm & Clore, 2002; Le, Berenbaum, & Raghavan, 2002). In contrast, only one study has examined the relation between BPD and attention to emotion – Lizeretti, Extremera, and Rodríguez (2012) found that higher levels of emotional attention were associated with elevated levels of BPD. It should be noted that Lizeretti et al. (2012) did not examine the relation between emotional attention and specific BPD symptoms. Thus, our second goal was to examine which specific aspects of emotional awareness (i.e. attention and/or clarity) would be associated with which specific BPD symptom dimensions and whether these associations would remain even after taking into account negative affect.

In addition to examining whether childhood abuse and emotional awareness would be associated with specific BPD symptom dimensions, we also explored the possibility that the impact of these predictors would be moderated by each other. Emotional awareness has often been found to moderate the links between other variables (such as emotion regulation and urgency) and criterion variables (such as affective well-being and binge eating) (e.g., Lischetzke & Eid, 2003; Manjrekar, Berenbaum, & Bhayani, 2015). Similarly, past research has often found interactions between attention to emotion and clarity of emotion in the prediction of criterion variables (e.g., Berenbaum, Boden, & Baker, 2009; Boden, Gala, & Berenbaum, 2013; Manjrekar & Berenbaum, 2012). In other words, the relation between emotional awareness and a variety of criterion variables has often been found to depend on the particular configuration of attention to and clarity of emotion.

Various presentations of psychological distress have been found to be associated with specific configurations of emotional awareness identified in previous research (Gohm, 2003). Berenbaum, Bredemeier, Thompson, and Boden (2012) found that: (a) individuals who were both depressed and worriers were especially likely to exhibit high levels of attention to emotion but low levels of emotional clarity (a pattern described by Gohm (2003) as "overwhelmed"); (b) individuals who were depressed but not worried were especially likely to exhibit low levels of both attention to emotion and emotional clarity (a pattern described by Gohm (2003) as "cold"); and (c) individuals who were worriers but who were not depressed were especially likely to exhibit high levels of both attention to emotion and emotional clarity (a pattern described by Gohm (2003) as "hot"). Thus, we were especially interested in determining whether particular configurations of attention to emotion and emotional clarity would interact with childhood abuse in the prediction of BPD symptom dimensions.

To summarize, the goal of this study was to examine the ways in which childhood abuse and emotional awareness (i.e., emotional clarity and emotional attention) are associated with specific BPD symptom dimensions. Based on the results of past research, we expected to find that childhood emotional, physical, and sexual abuse and emotional attention would be positively associated with BPD symptoms, whereas emotional clarity would be negatively associated with BPD symptoms. Additionally, we tested the possibility that there would be a three-way interaction between emotional clarity, emotional attention, and the various forms of childhood abuse in the prediction of BPD symptom dimensions. Finally, we measured negative affect so that we could render less plausible the possibility that any associations we found between emotional awareness, childhood abuse, and BPD symptoms were merely artifacts of their shared associations with negative affect.

<center>**Method**</center>

Participants

The participants were 293 adults (53.9% female) between the ages of 18 and 89 years (M = 43.1, SD = 17.3). These individuals were participating in a large project examining pathways to disturbed emotions, personality disorders, perceptions, and beliefs (Berenbaum et al., 2006). The majority of participants (77.8%) identified as Caucasian/White, while 5.5% were Asian American or Asian, 8.9% were African American, 2.7% were Latino/Latina, 1.4% were Native American, and 2.4% were from various other races or ethnicities, or did not specify their ethnicity. Approximately half (53.9%) of the sample had a college degree, 31.1% had some college education, 11.3% had only a high school degree, and 1.4% had not graduated from high school. Close to half (40.3%) of the sample was married, and an additional 9.9% were living with a romantic partner.

Measures

Borderline Personality Disorder. We assessed BPD symptom dimensions using the BPD subscale from the Schedule for Nonadaptive and Adaptive Personality-2 (SNAP-2; Clark, Simms, Wu, & Casillas, 2014), which uses a true/false self-report format. The original SNAP and SNAP-2 diagnostic scales are highly correlated with interview measures of personality disorders (e.g., Clark, 1993; Clark, et al., 2014). Specifically, subscales for each symptom dimension were formed by matching items to the criteria found in the DSM IV corresponding to the factors derived by Sanislow et al. (2002). Affective dysregulation was scored using the mean of the ten items assessing efforts to avoid abandonment, affective instability, and inappropriate/intense anger ($\alpha = .77$); behavioral dysregulation was scored using the mean of the eleven items assessing the presence of impulsivity and suicidal behavior ($\alpha = .72$); disturbed

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relatedness was scored using the mean of the six items assessing interpersonal instability, identity disturbance, chronic feelings of emptiness, and stress-related paranoid ideation ($\alpha = .51$).

Childhood Abuse. Childhood physical, sexual, and emotional abuse were assessed via an interview conducted by trained graduate students. Participants were informed that only members of the research team would be able to see their responses. Participants were also given information that made them less likely to withhold information regarding childhood sexual experiences (e.g., participants were informed that childhood sexual experiences are not rare, sometimes occurring with family members and other times not, and may or may not be painful).

The childhood physical abuse interview utilized an expanded version of the Self-Report of Childhood Abuse Physical (Widom & Shepard, 1996), which inquired as to the occurrence and nature of physical abuse experiences. Participants were asked about a number of physically abusive events (e.g., "beat or hit you with something hard like a stick or baseball bat"; "intentionally burn you"; "hurt you badly enough so that you needed a doctor or other medical treatment"). These questions were then followed up on as necessary by asking about the perpetrator(s), frequency of the events, and the ages at which they occurred.

Childhood sexual abuse was measured via an interview procedure that followed the approach described by Finkelhor (1979), Russell (1983), and Widom and Morris (1997). As with the physical abuse interview, participants were asked about a variety of sexual acts (e.g., "another person showing his or her sex organs to you"; "you fondling another person in a sexual way"; "oral or anal sex"; "intercourse"). These questions were followed up on (as necessary) by asking about the nature of the perpetrator(s), frequency of the events, the ages at which they occurred, whether (in the case of fondling and touching) the participant was unclothed, and whether there were explicit threats to comply with the wishes of the perpetrator. Participants

were informed that for sexual experiences that occurred starting at and after age 12, we were interested only in unwanted sexual experiences.

Childhood emotional abuse was assessed using the relevant portion of the Childhood Trauma Interview (Bernstein et al., 1994; Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995). Participants were asked about a variety of emotionally abusive actions (e.g., "Did anyone ever call you stupid or ugly or bad, or say that you couldn't do anything right"; "Did anyone say or do things that made you feel ashamed or embarrassed"; "What about ignoring you or giving you the silent treatment"). These questions were followed up on (as necessary) by asking about the nature of the perpetrator(s), what had been said or done, the frequency of the events, and the ages at which they occurred.

These three types of childhood abuse were rated in terms of global severity (0 = absent; 6 = torturous) and along three different periods: before age 6, ages 6–11, and ages 12–17. The interviewer's evaluation of the severity of the acts served as the basis for the rating (as opposed to the participant's impression of the severity of the acts). Using the interviewers' notes, a research assistant, blind to all other scores, rated the same three types of maltreatment across the three age ranges for each participant. Interrater reliability, measured using the intraclass correlation coefficient, treating raters as random effects and the mean of the raters as the unit of reliability, ranged between .88 and .91. Because abuse scores were relatively consistent across age, the abuse scores were averaged across age ranges to provide one physical abuse, one sexual abuse, and one emotional abuse score for each participant.

Emotional Awareness. We measured two domains of emotional awareness – attention to emotion and clarity of emotion – using the relevant subscales of the Trait Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Attention to emotions was

measured using 13 items assessing the degree to which participants notice or think about their feelings (α = .84; e.g., "I pay a lot of attention to how I feel"), while clarity of emotions was measured using 11 items evaluating how well participants identify, discriminate between, and understand their feelings (α = .85; e.g., "I am usually very clear about my feelings"). Participants indicated their responses on a on a scale ranging from 1 (strongly disagree) to 5 (strongly agree) with higher scores indicating higher levels of clarity or attention. The TMMS has been validated in a number of clinical and nonclinical samples (Salovey et al., 1995), and both subscales have been found to have excellent psychometric properties and reasonable evidence of convergent and discriminant validity (Salovey et al., 1995).

Negative Affect. Negative affect was measured using the 10-item negative affect scale from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) supplemented with five lower arousal negative affect words: frustrated, down, sad, grouchy, and anxious (α = .94). Participants indicated their experience of affect in the past month on a scale ranging from 1 (very slightly or not at all) to 5 (extremely).

Results

We began by examining the associations between negative affect, childhood abuse, and emotional awareness and the BPD symptom dimensions. As seen in Table 1, emotional clarity was significantly negatively associated with all three BPD symptom dimensions. In contrast, emotional attention was associated (positively) with only affective dysregulation. As expected, all forms of childhood abuse were strongly positively correlated with disturbed relatedness and both forms of dysregulation. Also as expected, negative affect was positively correlated with all BPD symptom dimensions, all forms of childhood abuse, and emotional attention, and it was negatively correlated with emotional clarity.

Having found that both child abuse and emotional awareness were associated with the BPD symptom dimensions, we proceeded to test whether they would continue to be significantly associated after taking into account negative affect. After controlling for negative affect, childhood emotional abuse remained positively significantly correlated with disturbed relatedness ($r = .16$, $p < .01$), affective dysregulation ($r = .21$, $p < .01$), and behavioral dysregulation ($r =.27$, $p < .01$). Childhood physical abuse was also positively correlated with disturbed relatedness ($r = .15$, $p < .01$), affective dysregulation ($r = .14$, $p < .05$), and behavioral dysregulation ($r = .19$, $p < .01$). Childhood sexual abuse was positively correlated with disturbed relatedness ($r = .16$, $p < .01$) and behavioral dysregulation ($r = .28$, $p < .01$), but not affective dysregulation ($r = .08$, $p = .184$). Partial correlations revealed that emotional attention ($r = -.13$, $p < .05$) and clarity ($r = -.17$, $p < .01$) were both negatively significantly correlated with disturbed relatedness after taking negative affect into account. However, none of the partial correlations between emotional awareness and affective or behavioral dysregulation were statistically significant.

Next, we examined whether the emotional awareness variables moderated the effects of the different forms of childhood abuse on BPD symptom dimensions with a focus on the hypothesized three-way interactions. To do so, we conducted hierarchical regression analyses in which: (a) negative affect was entered in the first step; (b) childhood abuse variables and emotional awareness variables were entered in the second step; (c) the three two-way interactions (e.g., emotional abuse x attention to emotion) were entered in the third step; and (d) the three-way interaction (e.g., emotional abuse x attention to emotion x clarity of emotions) was entered in the final step. Disturbed relatedness, affective dysregulation, and behavioral dysregulation served as the dependent variables (each in their own regression analyses).

Three three-way interactions were significantly related to BPD symptom dimensions. No significant interactions predicted affective dysregulation for any of the three forms of abuse. However, there were two significant three-way interactions predicting behavioral dysregulation, one involving physical abuse and the other involving emotional abuse. These two interactions are illustrated as the results of simple slopes analyses (Aiken & West, 1991) in Figure 1. The pattern of results was quite similar for physical abuse and emotional abuse, shown in the left and right panels of Figure 1, respectively. In both cases, higher levels of physical abuse were associated with higher levels of behavioral dysregulation for all individuals except for those high in both emotional attention and emotional clarity. In both cases, the association between abuse and behavioral dysregulation was strongest among individuals high in attention to emotion but low in emotional clarity ($\beta = .38$, $p < .01$ and $\beta = .50$, $p < .01$, for physical abuse and emotional abuse, respectively), though the associations were also significant among individuals low in attention to emotion and low in emotional clarity ($\beta = .32$, $p < .01$ and $\beta = .45$, $p < .01$, for physical abuse and emotional abuse, respectively) and among individuals low in attention to

emotion and high in emotional clarity ($\beta = .30$, $p < .01$ and $\beta = .37$, $p < .01$, for physical abuse and emotional abuse, respectively).

As seen in Figure 2, a different pattern emerged involving physical abuse and the prediction of disturbed relatedness. It turned out that higher levels of physical abuse were associated with higher levels of disturbed relatedness only among individuals low in both emotional attention and emotional clarity ($\beta = .54$, $p < .01$). Physical abuse was not associated with disturbed relatedness among any other combinations of emotional attention and emotional clarity.

Discussion

Consistent with previous research (e.g., Bierer et al., 2003; Elices et al., 2015), we found that all three kinds of childhood abuse were associated with higher levels of BPD. However, such research has rarely examined the association between childhood abuse and different BPD symptoms. The present study adds to the existing literature by demonstrating that this association holds across different types of abuse and across BPD symptom dimensions. Furthermore, these relations hold even when negative affect is taken into account.

As in earlier studies (e.g., Gardner & Qualter, 2009; Hertel, Schütz, & Lammers, 2009; Lizeretti, Extremera, & Rodríguez, 2012; Velotti & Garofalo, 2015), our findings regarding the individual associations between emotional clarity and BPD showed that emotional clarity was negatively associated with all BPD symptom dimensions. We also found that higher levels of attention to emotion were associated with greater affective dysregulation. However, neither facet of emotional awareness was associated with affective dysregulation or behavioral dysregulation after taking into account negative affect.

The only BPD symptom dimension that was associated with emotional awareness after taking into account negative affect was disturbed relatedness. This is particularly noteworthy given that the internal consistency of our disturbed relatedness measure was lowest among the three. Thus, the observed relation between emotional awareness and disturbed relatedness in this study is likely a lower-bound estimate of the strength of the association.

After taking into account negative affect, higher levels of disturbed relatedness were associated with lower attention to emotion and lower clarity of emotion. One possible reason for the robust association between emotional awareness and disturbed relatedness is that not recognizing and understanding emotions may impair people's ability to understand their

relationships with others and the environment. As a result, deficits in emotional awareness may result in interpersonal dysfunction and identity disturbance.

Although when examined in isolation there was relatively little evidence of emotional awareness being associated with BPD symptom dimensions (particularly after taking into account negative affect), we did obtain evidence of emotional awareness moderating the link between childhood abuse and BPD symptom dimensions. We found that neither a history of physical nor emotional abuse predicted behavioral dysregulation for individuals displaying a "hot" emotional awareness pattern (i.e., high emotional attention and high emotional clarity; Gohm, 2003), though it did for every other emotional awareness pattern (i.e., low emotional attention, high emotional clarity; high emotional attention, low emotional clarity; low emotional attention, low emotional clarity). It is possible that having high levels of both emotional attention and clarity is a double-edged sword. On the one hand, under ordinary circumstances, being emotionally "hot" brings with it above-average levels of behavioral and affective dysregulation due to the effects that being overly preoccupied with one's emotions may have on behavior. On the other hand, such emotional awareness may protect against experiences of degradation and terror stemming from emotional and physical abuse (Allen, 2008). For example, a person who is both attentive to and clear about their fear of an abusive parent may be less likely to generalize their parent's behavior to different contexts (e.g., romantic relationships). This could mean lower levels of traits related to behavioral dysregulation, such as impulsivity, which may draw on a lack of clarity and attention to emotions.

The link between physical and emotional abuse and behavioral dysregulation was particularly high among individuals who were high in emotional attention, but low in emotional clarity (overwhelmed; Gohm, 2003). This should not be surprising given that this pernicious

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combination has been associated with some of the most extensive manifestations of psychological distress (Berenbaum et al., 2012).

We also found that the link between physical abuse and disturbed relatedness was especially strong among individuals low in both emotional attention and clarity (i.e., "colds"). The impact of physical abuse on disturbed relatedness may be stronger among those with low levels of emotional awareness because they cannot apply affective information in a way that allows for context (e.g., my older sibling hitting me when we were children), severity (e.g., being spanked as a child by a parent versus being punched in the face), and likelihood (e.g., my well-adjusted romantic partner physically assaulting me for leaving the house dirty).

It will be necessary for future research to replicate the findings of the present study. It will also be important to extend these findings to some of the more deleterious aspects of BPD, For example, there is growing interest and awareness in constructs such as non-suicidal self-injury (e.g., Carvalho et al., 2015; Paul, Tsypes, Eidlitz, Ernhout, & Whitlock, 2015), that are not necessarily particular to BPD. Past research has also established links between other Cluster B personality disorders and childhood emotional abuse (e.g., Peng, Zhou, Chen, & Cai, 2011; Sher et al., 2015); it will be necessary to investigate whether or not emotional awareness moderates the relationship between childhood abuse and other personality disorder symptoms as we found in the case of BPD.

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Figures and Tables

Table 1
Correlations Among Variables (N = 293)

Variable	1	2	3	4	5	6	7	8	9
1. Negative Affect	-								
2. Emotional Abuse	.25**	-							
3. Physical Abuse	.14*	.55**	-						
4. Sexual Abuse	.17**	.35**	.39**	-					
5. Emotional Attention	.21**	.14*	.01	-.00	-				
6. Emotional Clarity	-.41**	-.08	-.00	-.11	.08	-			
7. Disturbed Relatedness	.47**	.26**	.20**	.23**	-.01	-.33**	-		
8. Affective Dysregulation	.63**	.31**	.20**	.17**	.20**	-.29**	.47**	-	
9. Behavioral Dysregulation	.32**	.33**	.22**	.31**	.11	-.19**	.47**	.47**	-
M	2.1	1.1	0.9	0.5	3.9	3.9	0.3	0.2	0.2
SD	0.8	1.0	0.9	0.9	0.6	0.7	0.2	0.2	0.2

* $p < .05$
** $p < .01$

Table 2

Summary of Hierarchical Multiple Regression Analyses Predicting Borderline Personality Disorder Symptom Dimensions (N = 293)

	Disturbed Relatedness		Affective Dysregulation		Behavioral Dysregulation	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Emotional Abuse						
Step 1		.22**		.39**		.10**
Negative Affect	.47**		.63**		.32**	
Step 2		.05**		.03**		.07**
Emotional Abuse	.16**		.16**		.26**	
Emotional Attention	-.10ᵗ		.06		.04	
Emotional Clarity	-.15**		-.06		-.08	
Step 3		.01		.01		.03*
Emotional Abuse X Emotional Attention	-.03		-.08		-.10	
Emotional Abuse X Emotional Clarity	-.12*		-.04		-.14**	
Emotional Attention X Emotional Clarity	.00		.02		.03	
Step 4		.00		.00		.01*
Emotional Abuse X Emotional Attention X Emotional Clarity	-.01		.00		-.12*	
Physical Abuse						
Step 1		.22**		.39**		.10**
Negative Affect	.47**		.63**		.32**	
Step 2		.05**		.02*		.04**
Physical Abuse	.14**		.12**		.19**	
Emotional Attention	-.08		.08		.07	
Emotional Clarity			-.07		-.10	
Step 3		.02		.00		.02
Physical Abuse X Emotional Attention	-.12*		-.00		-.09	
Physical Abuse X Emotional Clarity	-.06		-.06		-.11*	
Emotional Attention X Emotional Clarity	-.02		-.01		.01	
Step 4		.01*		.00		.01*
Physical Abuse X Emotional Attention X Emotional Clarity	.11*		-.01		-.11*	
Sexual Abuse						
Step 1		.22**		.39**		.10**
Negative Affect	.47**		.63**		.32**	
Step 2		.05**		.01		.07**
Sexual Abuse	.14**		.06		.27**	
Emotional Attention	-.08		.08		.07	
Emotional Clarity	-.14*		-.06		-.07	
Step 3		.01		.01		.02
Sexual Abuse X Emotional Attention	-.01		-.07		-.01	
Sexual Abuse X Emotional Clarity	-.09		.04		-.12*	
Emotional Attention X Emotional Clarity	.00		.02		.05	
Step 4		.00		.00		.00
Sexual Abuse X Emotional Attention X Emotional Clarity	.04		.01		.06	

* *p* < .05
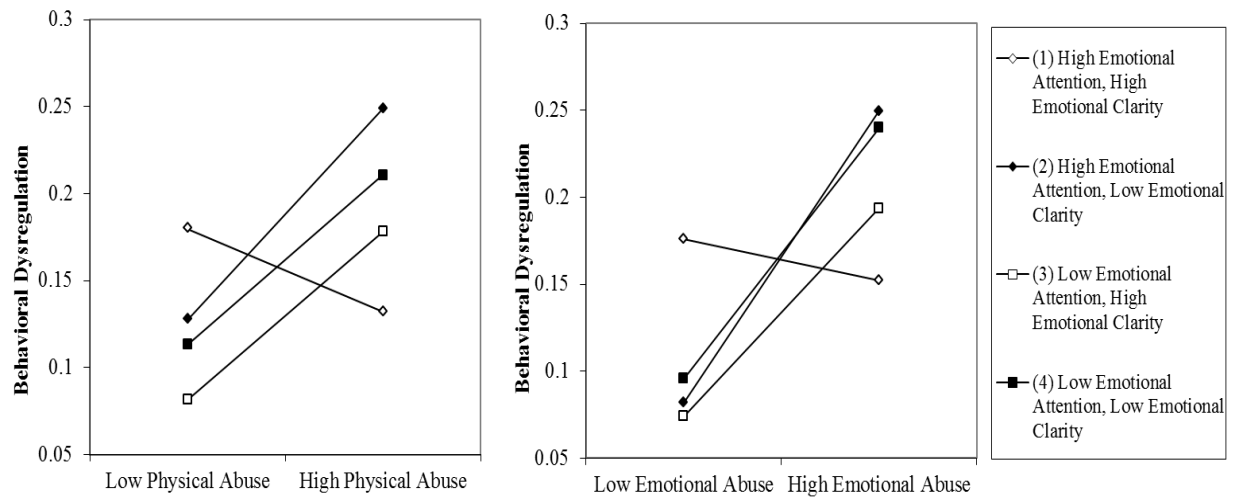** *p* < .01
ᵗ *p* = .051

Fig 1. The relationships between attention to emotion, clarity of emotion, and physical and emotional abuse with behavioral dysregulation.
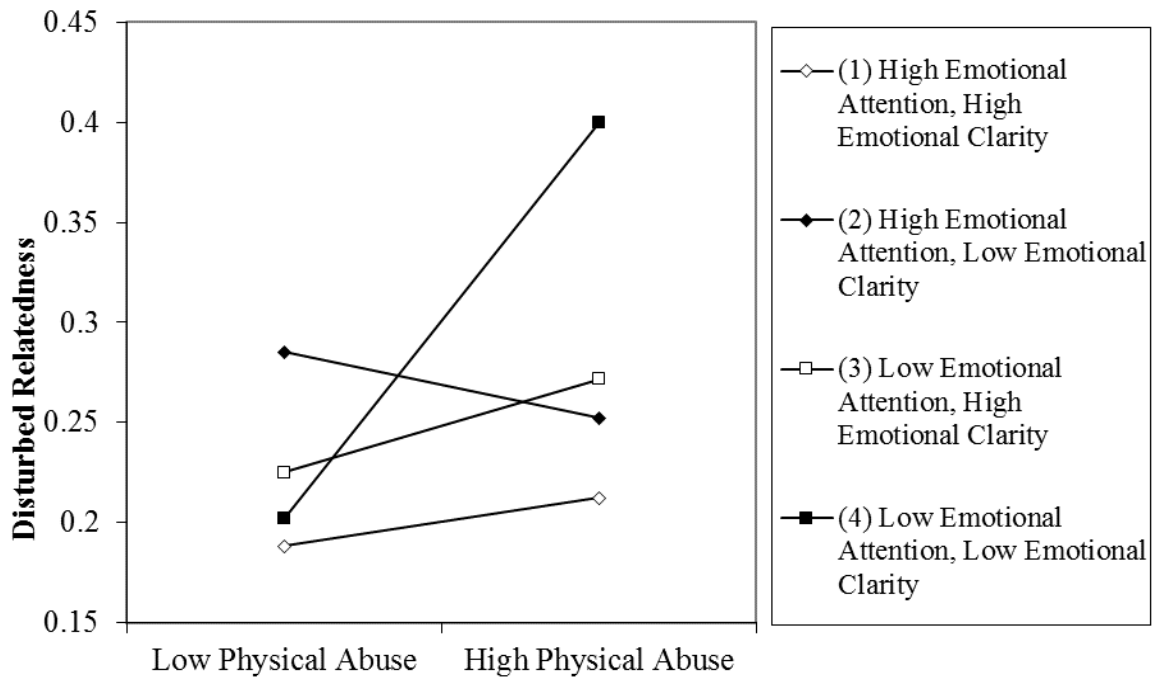

Fig 2. The relationships between attention to emotion, clarity of emotion, and physical abuse with disturbed relatedness.